



# **Final Self-Evaluation of the “Energy Efficient Low Carbon Transport Project in South Africa (LCT-SA)”**

## **Final report**

30 June 2021

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The ET would also like to thank those who have devoted their time to be interviewed by the ET and to those who have provided their opinions, comments and feedback through other means. All your valuable contributions are highly appreciated and were taken into account by the ET to write this report.

## List of Acronyms and Abbreviations

BEV	Battery EVs
CCM	Climate Change Mitigation
CoJ	City of Johannesburg
COVID-19	Coronavirus Disease
DFFE	Department of Forestry, Fisheries and the Environment
DMRE	Department of Mineral Resources and Energy
DoT	Department of Transport
DSI	Department of Science and Innovation
dtic	Department of Trade, Industry and Competition
ET	Evaluation Team
EVs	Electric Vehicles
FSE	Final self-Evaluation
GEF	Global Environment Facility
GHG	Greenhouse Gases
GTS	South Africa Green Transport Strategy 2018-2050
HEV	hybrid EVs
ISID	Inclusive and Sustainable Industrial Development
LCT-SA	Energy Efficient Low Carbon Transport Project in South Africa
M&E	Monitoring and Evaluation
NDC	Nationally Determined Contributions
NMT	Non-Motorized Transport
NRCS	National Regulator for Compulsory Specifications
PHEV	plug-in hybrid EVs
PIRs	Project Implementation Reports
PMU	Project Management Unit
PRF	Project Results Framework
ProDoc	GEF CEO Endorsement Project Document
PSC	Project Steering Committee
PV	Photovoltaics
SANEDI	South African National Energy Development Institute
SMEs	Small and Medium-size Enterprises
TIA	Technology Innovation Agency
TOC	Theory of Change
TR	Terminal Report
UNEG	United Nations Evaluation Group
UNIDO	United Nations Industrial Development Organisation
UNITAR	United Nations Institute for Training and Research
uYilo	Electric Mobility Programme of the South African Technology Innovation Agency

## Glossary of Evaluation-Related Terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change due directly or indirectly to an intervention.
Effectiveness	The extent to which the development objectives of an intervention were or are expected to be achieved.
Efficiency	A measure of how economic inputs (through activities) are converted into outputs.
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Intervention	An external action to assist a national effort to achieve specific development goals.
Lessons learned	Generalizations based on evaluation experiences that abstract from specific to broader circumstances.
Logframe or Project Results Framework (logical framework approach)	Management tool used to guide the planning, implementation and evaluation of an intervention. System based on MBO (management by objectives) also called RBM (results-based management) principles.
Outcomes	The achieved or likely effects of an intervention's outputs.
Outputs	The products in terms of physical and human capacities that result from an intervention
Relevance	The extent to which the objectives of an intervention are consistent with the requirements of the end-users, government and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed.
Target groups	The specific individuals or organizations for whose benefit an intervention is undertaken.

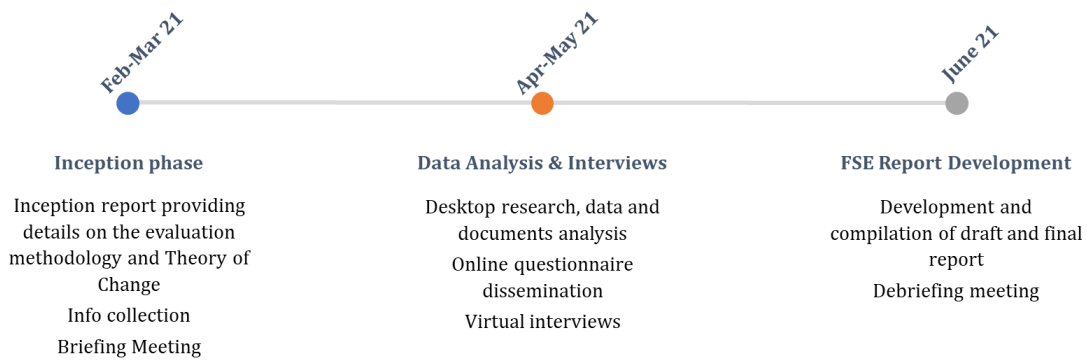
# Executive Summary

## Evaluation purpose and methodology

The overarching purpose of this FSE is to evaluate the Energy Efficient Low Carbon Transport Project in South Africa (known as “LCT-SA”), in order to help UNIDO improve performance and results of ongoing and future programmes and projects. This evaluation pursues two main objectives:

- An “accountability” objective: (i) to evaluate the project’s performance in terms of its relevance, effectiveness, efficiency, sustainability and impact, and
- A “learning” objective: (ii) to identify key learnings to feed into the design and implementation of the forthcoming projects; and (iii) to develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

The FSE, carried out between February and June 2021, reviewed the LCT-SA design, implementation approach and project objectives and targets achievement. It covers the whole duration of the project (January 2016 – March 2021) and provides recommendations for follow-up activities. The steps followed for the FSE are:



## LCT-SA Context

The transport sector accounts for 28% of final energy consumption in South Africa (97% of which is in liquid fuels) and demand is expected to double by 2050. Most of this consumption is for the transport sector, which contributes to the overall GHG emissions of the country and, within the transport sector, over 90% of its emissions are from road transport. The objective of the LCT-SA is to advance energy-efficient low-carbon transport systems for improved energy consumption and mobility practices in South Africa. It has targeted sustainable transport policy improvements, educating the public about key industry developments and demonstrating technologies that will enable less carbon-intensive transport choices by policymakers, transport operators and the end user. Its aim is focused on **promoting the widespread use of Electric Vehicles (EVs) and Non-Motorised Transport (NMT) - in this case with a particular focus on cycling-, and the development of the necessary infrastructure, as part of the Green Transport and Green Cities initiatives of South Africa.** In order to achieve this, there are a set of barriers that LCT-SA needed to address:



The project framework was designed with two main components intended to address those barriers, and a third one for monitoring of project implementation and evaluation of results:

1. Improvement of policy and regulatory frameworks for EVs use and local manufacturing, and NMT; capacity of concerned institutions built, and awareness raised
2. Promotion of non-motorized and public transport in the Cities of Durban and Johannesburg, and development and demonstration of the supporting infrastructure for EVs
3. Monitoring & Evaluation (M&E)

## FSE: Energy Efficient Low Carbon Transport Project in South Africa (LCT-SA)

The involved parties in the implementation and execution of LCT-SA included UNIDO (Implementing Agency), SANEDI (Executing Agency), the dtic (Endorsing Partner), and DoT, DFFE and TIA (through uYilo programme) also supporting and involved in the execution of this project.

### **Key Findings of the Evaluation**

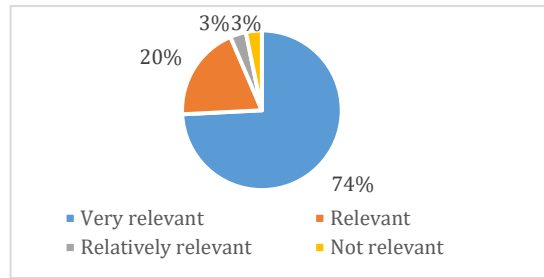
#### **Project Design**

It was found adequate to address the problem and aligned with national goals and priorities. Components and activities are sound, appropriate and consistent with the project objectives. However, some activities on NMT could have had benefited from additional studies at baseline stage (PPG) to better adapt to the current scenario.

Funding, institutional and implementation arrangements are valid and relevant. The project included a solid M&E plan, PRF and Risk Log with mitigation measures. The PRF included indicators (even disaggregated by gender and age), baselines, targets, assumptions and risks. Nevertheless, GHG emissions reductions were too ambitious and depended on the adoption of mechanisms by the Government, which were not adopted.

#### **Relevance**

LCT-SA was and is very relevant for South Africa and the region since it contributes to the reduction of road transport GHG emissions, which are mostly from fossil fuels. Recent policy documents (the Green Transport Strategy 2018-2050 (GTS), the South Africa Low Emissions Development Strategy and the new NDC being prepared) highlight the importance of transitioning to an accessible, cost-effective and affordable low carbon transport system, identifying the promotion of EVs and hybrid vehicles and the provision of infrastructure to promote NMT and eco-mobility as key parts of this transition. In addition, stakeholders highlighted the relevance of LCT-SA for creating capacities and raising awareness about the topic. LCT-SA is as well aligned with GEF Focal Area, ISID mandate, global initiatives (e.g. Paris Agreement and the SDGs).



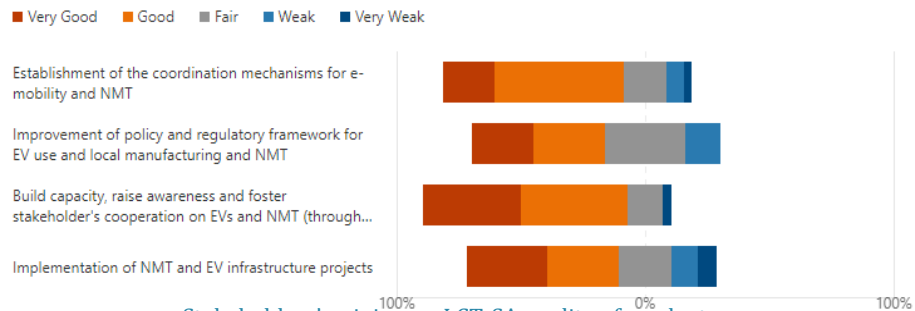
Stakeholders' opinion on LCT-SA relevance

#### **Effectiveness**

LCT-SA was, in general, effective in implementing and executing its activities, which included the support for the GTS 2018-2050 that provides a long-term vision of the transport sector transition in the country; the implementation of a significant number of awareness raising events, numerous conferences, capacity building and training courses conducted and offered to stakeholders and the beneficiaries; installing more PV charging stations than the originally envisaged that provide the end-user the opportunity to experience the technology. The evaluation also found that the drafted NMT policy was not finished and that the planned NMT pilot projects were not implemented, but the two studies conducted on NMT clarified the current challenges towards adopting cycling and proposed possible business ideas for implementing pilot projects for shared bike schemes at university campuses (University of Johannesburg).

#### **Efficiency**

The project was implemented in 5 years instead of the originally 3 that were planned. It received two time-extensions, the first due to some delays in activities implementation and the second due to the impact of COVID-19 that mostly affected procurement and installation of some PV charging stations.



Stakeholders' opinion on LCT-SA quality of products

The activities were implemented within budget, which was received and available with no issues. The products delivered by the projects are of very good quality, especially those related to creation of awareness and the establishment of the coordination mechanism to execute the project.

#### **Sustainability**

There are signs that show that the effort towards a cleaner transport sector in South Africa will continue. This is evidenced mostly by the fact that the GTS 2018-2050 implementation is being prepared by the dtic, who has also recently requested support from UNIDO to continue with a follow-up phase of the LCT-SA; SANEDI has now a



## FSE: Energy Efficient Low Carbon Transport Project in South Africa (LCT-SA)

formal working unit with a programme focused on mobility and is maintaining the LCT-SA website. Dissemination of information has been successful and has in fact increased stakeholders' interest at local and regional level in the low carbon transport topic.

### Cross-cutting performance criteria

**Gender mainstreaming:** in spite of the fact that gender indicators were not properly monitored and recorded, the evaluation team was able to witness the significant involvement of women in this project and with an active role in the South African transport sector. The LCT-SA has always ensured a gender-balanced panel of speakers at events, and the final report of the project (the "e-Book") highlights the important contribution of women to the project's achievements.

**M&E Design and Implementation:** The evaluation found that most of the M&E activities and reporting stages were complete and on time, except for the absence of records to show how many GHG emissions reductions were achieved by the project and the limited records that show that gender targets were achieved.

**Results-Based Management (RBM):** The PMU and overall coordination mechanism seemed to be efficient and effective. The workplan was established and updated in accordance to the challenges encountered (such as the COVID-19 pandemic) and with guidance from the Project Steering Committee (PSC). The team comprised of UNIDO and SANEDI worked exceptionally well.

### Performance of Partners

Even though there have been staff changes during the implementation period, all partners have performed their activities as planned. It is worth highlighting the great team effort and commitment of UNIDO and SANEDI to drive the project successfully towards finalization. Stakeholders are overall happy with their performance and the relationships that were built. The level of engagement of the municipalities and institutions was key to implement the pilot projects, and the partnerships established with the several organisations involved will be crucial for the continuation and sustainability of the LCT-SA legacy.

### Conclusions

When assessing the project progress towards impact, the evaluation concluded that LCT-SA has contributed with the following main achievements:

C1. Succeeded in getting the low carbon transport topic into the local political agenda, encouraging the stakeholders to take it into consideration for the energy transition planning and as a means to reduce the carbon footprint in South African cities, particularly by supporting the GTS development and by providing the end-user with the technology's "look and feel" to foster adoption of EVs.

C2. Transferred knowledge and built awareness of key stakeholders and policy/decision-makers at all levels, with a fruitful and massive information dissemination, awareness raising and capacity building campaign that has enabled the creation of connections and relationships that go beyond the execution of this project.

C3. Installed 8 (eight) PV-charging stations for EVs and contributed to a better understanding of NMT adoption challenges by conducting studies, which also provided ideas of potential pilot projects on bike sharing schemes.

C4. Triggered a more integrated working approach among stakeholders of public and private sector, fostering lasting relationships and collaboration for future projects.

### Recommendations

R1. The LCT-SA laid the ground for LCT topic to start being addressed in South Africa. There is a need to build on the developed work and continue to support cleaner mobility in the country. Therefore, a follow-up project to the LCT-SA is recommended, considering:

- To be framed under a more comprehensive topic, such as Smart Cities, Just Energy Transition, Net Zero, etc., bearing in mind the cross-cutting character of transport and applying nexus approaches to explore these interrelations.

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- An extension of scope to include the role of hydrogen in transport, how the automobile manufacturing industry can adapt to the growing demand of EVs, address public transport in more detail, address the need for funding for entrepreneurs and start-ups in the cleaner mobility sector.
- Continue supporting municipalities in their individual projects and capacity building needs.
- Continue addressing and supporting NMT in the country.

R2. For future UNIDO projects it would be important that:

- In the project design phase: (i) end-users are also engaged in the process; (ii) if a project needs to promote behaviour change on a diverse range of stakeholders, there is a need to identify targeted communication and awareness raising campaigns (iii) activities for capacity building on how to better design and apply M&E plans are included.
- Attention is paid not only to raising awareness and capacity building of the involved government institutions, but also to the coordination of efforts among them.
- Integrate more media coverage, advertising and communication activities to further market the idea and encourage adoption.

### **Lessons Learnt and Good Practices**

L1. Partnerships are key for an effective and efficient project implementation. It is important to understand the different partners to be involved in the project and appropriately choose how, when and in what way they should be involved. The cooperation space that was created will continue, which is a value added by this project and a result of the efforts made to engage all of them.

L2. It is important to do a proper selection and deployment of pilot projects. Learnings from the PV-charging stations experience show that location and accessibility is key for the end-user, and that procurement and installation processes may take more time and resources than expected, therefore need to be carefully planned and monitored. For this, keeping a good communication flow with the pilot project beneficiaries is important.

L3. Detailed baseline assessments at design stage and confirmation of those at project inception phase is important to assess necessary re-alignments of project activities /outcomes / outputs. This is also important to confirm the baseline information against which project progress is to be measured (an example of this are the 3 NMT pilot projects that were not implemented).

L4. Theory of Change methodology is a good tool to understand the overall impact of the project and being more frequently applied in all GEF-UNIDO projects.

L5. M&E plan implementation training, indicators selection and targets selection is very important to ensure that the project remains on track and that can actually provide the desired results.

GP1. The Team Effort and Partnerships Building made a difference in the LCT-SA project implementation, as well as choosing the right executing agency and making sure it has the necessary tools and autonomy and capacity to execute the project.

GP2. Activities, workshops for awareness creation, education and capacity building were of good quality, were well organized and advertised to reach the right audience and engage them.

### **Project Ratings<sup>1</sup>**

Evaluation Criterion	Rating
<b>A. Progress towards Impact and Results</b>	HS
<b>B. Project Design</b>	S
B1. Overall Design	S
B2. Project Results Framework	S
<b>C. Project Performance</b>	HS
C1. Relevance	HS

<sup>1</sup> Description of the rating allocation can be found in the main body of this report (Section 2.6). Code used in the rating assessment: Highly satisfactory (HS), Satisfactory (S), Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU).

## FSE: Energy Efficient Low Carbon Transport Project in South Africa (LCT-SA)

Evaluation Criterion	Rating
C2. Effectiveness	HS
C3. Efficiency	S
C4. Sustainability	HS
<b>D. Cross-cutting performance criteria</b>	S
D1. Gender mainstreaming	S
D2. M&E design and implementation	S
D3. Results-Based Management (RBM)	HS
<b>E. Performance of Partners and establishment of partnerships</b>	HS
E1. UNIDO	HS
E2. SANEDI	HS
E3. The dtic	HS
E4. DoT	HS
E5. TIA (uYilo)	HS
E6. DEFF	HS
E7. Donor (GEF)	S
E8. PSC	HS
E9. Beneficiaries (Cities)	HS
E10. Establishment of Partnerships	HS
<b>OVERALL PROJECT ASSESSMENT</b>	S

# 1 Introduction

The present document is the Final Self-Evaluation (FSE) of the “Energy Efficient Low Carbon Transport Project in South Africa” (LCT-SA) which is funded by the Global Environment Facility (GEF), implemented by the United Nations Industrial Development Organisation (UNIDO), executed by South African National Energy Development Institute (SANEDI) and endorsed by the Department of Trade, Industry and Competition (the dtic). Other executing partners involved in the project included the Department of Transport (DoT), the Department of Forestry, Fisheries and the Environment (DFFE), and the Technology Innovation Agency (TIA) represented by uYilo electric mobility programme.

The LCT-SA objective is the **“Promotion of the widespread use of electric vehicles (EVs) and non-motorized transport (NMT), and the development of the necessary infrastructure, as part of the Green Transport and Green Cities initiatives of South Africa”**.

As the project timeline indicates (see Figure 1), it has been executed between 1 January 2016 and 31 March 2021 (including two time extensions approved by UNIDO).

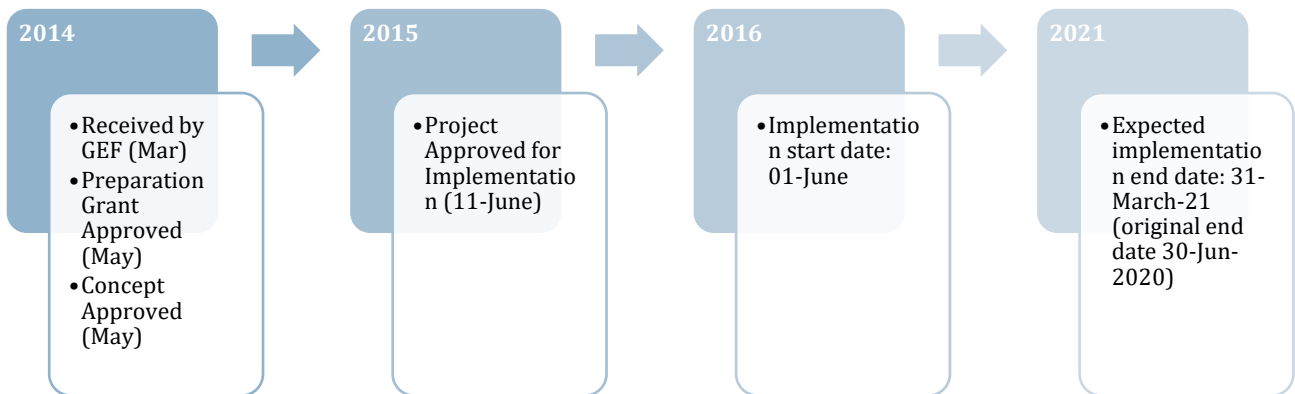


Figure 1: Project timeline

## 1.1 Project Context and objective

The transport sector accounts for 28% of final energy consumption in South Africa (97% of which is in liquid fuels) and demand is expected to double by 2050. The sector plays an increasingly important role in the overall economic and energy performance of South Africa. In addition, the transport sector accounts for the majority of oil consumption, most of which is imported from Middle Eastern and West African producers, but locally refined. South Africa is also experiencing a higher level of motorization as a result of increased commuting needs, an automobile dependent urban sprawl and personal wealth, in terms of both the number of wealthy people and disposable incomes. The ongoing use of transport fuel price subsidization only supports this growth and is closely linked to the fact that automotive manufacturing is an important sector in South Africa, being labour intensive and considered a high yield investment opportunity. According to 2020 statistics, South Africa's dependence on coal and fossil fuels places the country as the leading CO<sub>2</sub> emitter in Africa and the 14<sup>th</sup> largest in the world (UNIDO, 2020).

The objective of the LCT-SA is to advance energy-efficient low-carbon transport systems for improved energy consumption and mobility practices in South Africa. It has targeted sustainable transport policy improvements, educating the public about key industry developments and demonstrating technologies that will enable less carbon-intensive transport choices by policymakers, transport operators and the end user (UNIDO, 2021). Through this project, hosting, partnering and endorsing organizations work together to promote the widespread use of EVs and NMT, and the development of the necessary infrastructure, as part of the Green Transport and Green Cities initiatives of South Africa (UNIDO, 2020).

A set of barriers was identified as part of the project design and the project aimed at tackling them to achieve its objective. The barriers are summarised in Figure 2.

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*Figure 2: Summary of barriers to adopting energy efficient low carbon transport in South Africa, identified by the project*

The project framework was designed with two main components intended to address the mentioned barriers, and a third one for monitoring of project implementation and evaluation of results:

4. Improvement of policy and regulatory frameworks for EVs use and local manufacturing, and NMT; capacity of concerned institutions built, and awareness raised
5. Promotion of non-motorized and public transport in the Cities of Durban and Johannesburg, and development and demonstration of the supporting infrastructure for EVs
6. Monitoring & Evaluation (M&E)

The Project Results Framework (PRF), including these components and their expected outputs and outcomes, is included in Annex 1: Project Results Framework.

*Table 1: Project Factsheet (UNIDO, 2020)*

Project title	Energy Efficient Low Carbon Transport Project in South Africa
<b>UNIDO project No. and/or ID</b>	130281
<b>GEF project ID</b>	5737
<b>Region</b>	Africa
<b>Country(ies)</b>	South Africa
<b>Planned implementation start date</b> (for GEF projects, as indicated in CEO endorsement/Approval document)	01 January 2016
<b>Planned implementation end date</b> (for GEF projects, as indicated in CEO endorsement/Approval document)	30 June 2019
<b>Actual implementation start date</b>	01 January 2016
<b>Actual implementation end date</b>	31 March 2021
<b>GEF Focal Areas and Operational Project</b> (in addition, also indicate whether the project is linked to a GEF programme)	CC (CCM – Climate change mitigation)
<b>Implementing agency(ies)</b>	UNIDO
<b>Executing partner(s)/entity(ies)</b>	SANEDI, the dtic
<b>Donor(s):</b>	GEF
<b>Total project allotment</b> (for GEF: project grant)	USD 1,300,000
<b>Total co-financing at design</b> (in cash and in-kind)	USD 7,115,000
<b>Materialized co-financing at project completion</b> (in cash and in-kind)	<b>Cash:</b> <b>In-kind:</b>
<b>Mid-term review date</b>	August 2019

With regards to the project implementation arrangements, UNIDO holds the main responsibility as Implementing Agency for the delivery of the outputs and the achievement of the outcomes. A detailed analysis of all the involved parties and their performance is conducted in Section 2.5.

### 1.2 Evaluation Objectives and Scope

The FSE main objective is **to help UNIDO improve performance and results of ongoing and future programmes and projects**. This FSE pursues two main objectives:

- An “accountability” objective: (i) to evaluate the project’s performance in terms of its **relevance, effectiveness, efficiency, sustainability and impact**, and
- A “learning” objective: (ii) to identify **key learnings** to feed into the design and implementation of the forthcoming projects; and (iii) to develop a **series of findings, lessons and recommendations** for enhancing the design of new and implementation of ongoing projects by UNIDO. This is particularly relevant to help improve the selection, enhancing the design of future projects and its activities at global and in country beyond the completion of the GEF grant.

These were elaborated further into more detailed evaluation questions that guided the assessment process (see Annex 4: Primary data collection instruments).

The FSE covers the full period of implementation: 1-Jan-2016 to 31-Mar-2021 (5 years and 3 months).

### 1.3 Evaluation approach and methodology

The FSE approach was based on the analysis of the project against five (5) **main criteria** and an additional sixth (6) criterion, namely:

1. **Design and relevance of the project** - analysis of the relevance of the LCT-SA against national priorities
2. **Project impact and results** - identification of direct results obtained from the implementation of the LCT-SA and expected longer-term impacts
3. **Effectiveness** - analysis of the LCT-SA against the achievement and probability of reaching the final results (if not fully achieved)
4. **Efficiency** - analysis of the balance between impact and financial resources
5. **Sustainability** - analysis and identification of the permanence potential and increase of the positive impacts of the LCT-SA after its completion
6. **Gender mainstreaming** - analysis of how the LCT-SA includes gender issues in its implementation

Two additional cross-cutting criteria are evaluated in addition to the previous; these are the M&E plan application and the Results-Based Management (RBM) application.

In addition, the FSE was conducted in accordance with a number of guides and norms:

- UNIDO Evaluation Policy and Manual<sup>2</sup>
- UNEG Norms and Standards for evaluation<sup>3</sup>
- UNIDO Guidelines for the Technical Cooperation Project and Project Cycle<sup>4</sup>
- GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations<sup>5</sup>
- GEF Monitoring and Evaluation Policy<sup>6</sup>

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<sup>2</sup> <https://www.unido.org/sites/default/files/files/2018-04/Evaluation%20Manual%20e-book.pdf>

<sup>3</sup> <http://www.unevaluation.org/document/detail/1914>

<sup>4</sup> [https://www.unido.org/sites/default/files/2017-04/PTC\\_Brochure\\_Draft\\_16.3.2017\\_0.pdf](https://www.unido.org/sites/default/files/2017-04/PTC_Brochure_Draft_16.3.2017_0.pdf)

<sup>5</sup> <https://www.gefio.org/evaluations/guidelines-gef-agencies-conducting-terminal-evaluation-full-sized-projects>

<sup>6</sup> [https://www.thegef.org/sites/default/files/council-meeting-documents/EN\\_GEF.ME\\_C56\\_02\\_Rev01\\_GEF\\_Evaluation\\_Policy\\_June\\_2019\\_0.pdf](https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.ME_C56_02_Rev01_GEF_Evaluation_Policy_June_2019_0.pdf) and [http://www.thegef.org/sites/default/files/council-meeting-documents/EN\\_GEF.C.56.03.Rev\\_.01\\_Policy\\_on\\_Monitoring.pdf](http://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.C.56.03.Rev_.01_Policy_on_Monitoring.pdf)

- GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies<sup>7</sup>

## 1.4 Evaluation tools and sources of information

The FSE was conducted through the application of theory-based evaluation methods (quantitative and qualitative) and made use of the following tools:

- **Theory of Change (TOC)** (described next in 1.4.1): the TOC identified how the LCT-SA aimed at addressing the project barriers and what was needed to generate the desired short/medium terms outcomes as well as to start laying the foundations for longer term impacts. This was important to specify causal pathways between the project deliverables and the envisaged impacts as stated in the GEF CEO Endorsement Project Document (ProDoc). The TOC also enabled the ET to build the impact evaluation matrix and identify appropriate indicators to carry out the evaluation.
- **Evaluation Matrix:** based on the TOC and the LCT-SA PRF included in the ProDoc, an Evaluation Matrix with SMART indicators was established by the ET and used as a basis to elicit information for the evaluation. The Evaluation Matrix addresses several evaluation criteria: project design and relevance; efficiency; effectiveness; progress to impact; sustainability and cross-cutting issues such as gender mainstreaming. The LCT-SA project activities are then evaluated and graded against these criteria. This evaluation matrix can be found in Annex 6: Details on project progress towards impacts.
- **ProDoc Implementation Matrix:** developed to substantiate the evaluation of the “Progress to Impact” criterion. This matrix was built using the PRF and was used to track if there was qualitative and quantitative evidence on the progress towards the overall goal of the project, as per the ProDoc (i.e. tracking the progress of the achievement of all the outcomes/outputs).
- **An online questionnaire** to get a general overview of the project actions as implemented and executed on the ground has been rolled out. The aim is to collect feedback on what to improve and possible follow-up activities (see Annex 4: Primary data collection instruments).
- **Interviews:** Individual and focus group interviews were held with key stakeholders via teleconference or similar communication means. A summary of the key stakeholders interviewed is provided next in 1.4.2.
- **Desk review:** A comprehensive desk/literature review was conducted to analyse all relevant documentation, such as, progress reports, meeting minutes, etc. among other (the list of documents is in Annex 2: List of documents revised during FSE). In addition to documents, the LCT-SA website (<https://www.lctsa.co.za/>), the details of the project in UNIDO’s website were also consulted (<https://open.unido.org/projects/ZA/projects/130281>).
- **UNIDO ratings:** All UNIDO project evaluations are required to rate a series of evaluation and project criteria against a six-point Likert scale, ranging from ‘highly unsatisfactory’ to ‘highly satisfactory’<sup>8</sup>.

### 1.4.1 LCT-SA Project Theory of Change

The following figure (Figure 3) depicts the reconstructed TOC. This TOC shows how the ET interprets and identifies causal pathways that connect objectives and outcomes/outputs and how barriers and activities are involved in this process.

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<sup>7</sup> <https://www.thegef.org/council-meeting-documents/recommended-minimum-fiduciary-standards-gef-implementing-and-executing>

<sup>8</sup> See page 24, UNIDO Evaluation Manual, 2018.

# LCT-SA THEORY OF CHANGE

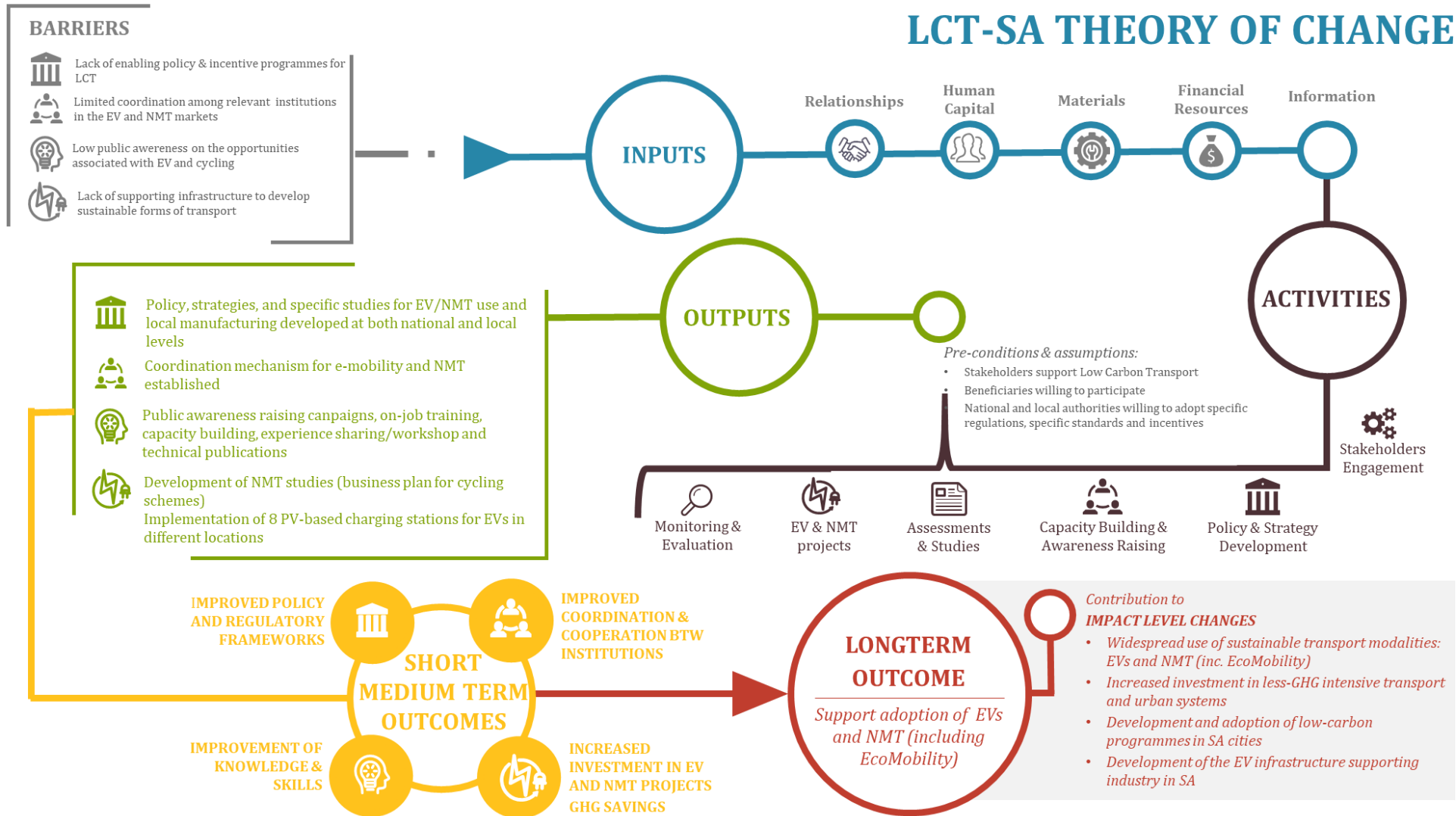


Figure 3: LCT-SA project reconstructed TOC



## 1.4.2 Key stakeholders

The following groups and/or representatives of these groups were identified as key evaluation stakeholders (see list in Annex 3: List of consulted stakeholdersAnnex 3: List of consulted stakeholders).

- **UNIDO:** Including the Project Management Unit (PMU) responsible for the day-to-day delivery of the project, and other senior management or staff involved in the project.
- **Project delivery partners:**
  - **SANEDI**, as Executing Agency
  - **The dtic**, as endorsing agency
  - **Other government agencies:** TIA (through uYilo), DEFF, DoT
- **Project Steering Committee (PSC) members**
- **Donors:** The GEF.
- **Beneficiaries / participants:** individuals and groups that participated in training, workshops and events facilitated by the project, the communities of the cities where pilot projects were implemented, the Government agencies and public institutions from those cities who were involved for pilot projects implementation.
- **Others:** Including institutions that have a direct interest in low carbon transport, green transport and cleaner mobility policies and initiatives, in South Africa.

The project stakeholders were consulted through: (i) an online electronic questionnaire distributed to approximately 150 people from circa 50 organizations; and (ii) 15 focus groups and individual interviews.

The ET received answers to the electronic questionnaire from 31 stakeholders (20.6 % stakeholders response rate) that belong to 19 different organizations (38% organization response rate). The type of organisations that responded to the questionnaire are in Figure 4, with the majority of responses coming from government organisations. The green bar includes the 8 answers from national government organisations and the grey bar includes 7 municipal and provincial government answers and 1 independent. Therefore, there are in total 15 (48%) answers coming from government agencies from all the government levels: municipal, provincial and national.

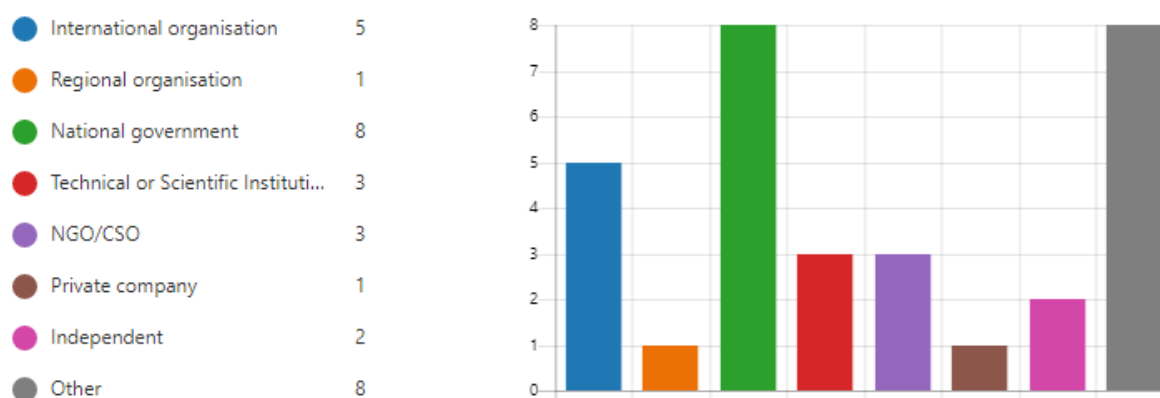


Figure 4: Type of organisations responding to the online questionnaire

The interviews were carried out to most of the key stakeholders involved in the project development, execution and implementation (including implementing agency, executing agency, executing partners, PSC members and beneficiaries). The results of the questionnaire can be found in Annex 5: Statistical Analysis of Survey Data.

## 1.5 Limitations encountered during the Evaluation

This FSE faced the following limitations:

- This FSE has been impacted by the Coronavirus Disease (COVID-19) pandemic, since travel restrictions meant that in-person interviews or visits to the pilot projects sites were impossible. Thus, the entire evaluation has been done remotely as desk-based, on-line exercise, which included virtual stakeholder engagement processes.

- Due to limited availability, it was not possible to interview all key stakeholders despite all the efforts made to engage them and flexibility offered by the ET.

## 2 Project's Assessment and Contribution to Development Results

### 2.1 Progress towards impact

As stated in the LCT-SA reports and documents, the LCT-SA “was established to promote the widespread use of electric vehicles (EVs) and non-motorized transport (NMT), as well as the development of the necessary infrastructure, as part of the Green Transport and Green Cities’ initiatives of South Africa, mainly through improvements of legislative frameworks and the practical application of pilot projects in cities across the country.” In fact, **it did this through:**

- **Introducing the necessary advocacy:** getting the EVs concept going in the country and providing the physical “look and feel” by showcasing EVs, so that people could relate to the technology.
- **Transferring knowledge and building awareness of key stakeholders and decision makers:** visible through:
  - The support provided for the **development of the Green Transport Strategy 2018-2050 (GTS)** that was adopted in 2018 and is now in implementation in the country. The GTS was developed with support from the LTC-SA and on the basis of a strong evidence base built by the project (macro-economic studies, assessments of the implications in the industry, studies on battery technologies, etc)
  - The contribution towards building capacity and providing information and tools to **national institutions acting on the field to inform and influence decision making**
  - The fact the topic **is being incorporated into other policy/strategic documents**, such as the South Africa Low Emissions Development Strategy<sup>9</sup> from 2020 and the Nationally Determined Contributions (NDC) that is currently being developed and open for public consultation<sup>10</sup>. Both documents identify the important role of green transport in achieving the South African goals. The NDC refers that the “long-term decarbonization of South African economy, will in the 2020’s first focus on the electricity sector; in the 2030s, a deeper transition will take place in the electricity sector coupled with a transition in the transport sector towards low emissions vehicles (...)”
  - The involvement of the **manufacturing industry** in the promotion of EVs and the **private sector** that started to roll out the necessary infrastructure for EVs, including charging infrastructure, infrastructure for payment, etc.
- **Installing 8 EV charging stations** in South Africa and by conducting a series of studies on NMT (particularly cycling).

Taking a closer look at the uptake of EVs in South Africa (see Figure 5), including hybrid EVs (HEV), plug-in hybrid EVs (PHEV) and Battery EVs (BEV), **by the end of 2020 there were 5,322 EVs sold in South Africa**. Of the total number of vehicles sold, the majority is HEV (76% of the total), followed by PHEV and BEV (each of them representing 12% of the total). Also, as it can be seen in the figure, from 2013 to 2020 the number of EVs in the country **has practically doubled, as it has increased from 2370 to 5322 EVs**. It is difficult to verify how much of this increase, particularly from 2016 onwards, was due to the implementation of the LCT-SA but most of the people interviewed think that the project had a positive effect on the adoption of EVs (58% of the people that responded to the online questionnaire think that LCT-SA contributed to this).

<sup>9</sup> [https://www.environment.gov.za/sites/default/files/docs/2020lowemission\\_developmentstrategy.pdf](https://www.environment.gov.za/sites/default/files/docs/2020lowemission_developmentstrategy.pdf)

<sup>10</sup> [https://www.environment.gov.za/sites/default/files/reports/draftnationallydeterminedcontributions\\_2021updated.pdf](https://www.environment.gov.za/sites/default/files/reports/draftnationallydeterminedcontributions_2021updated.pdf)

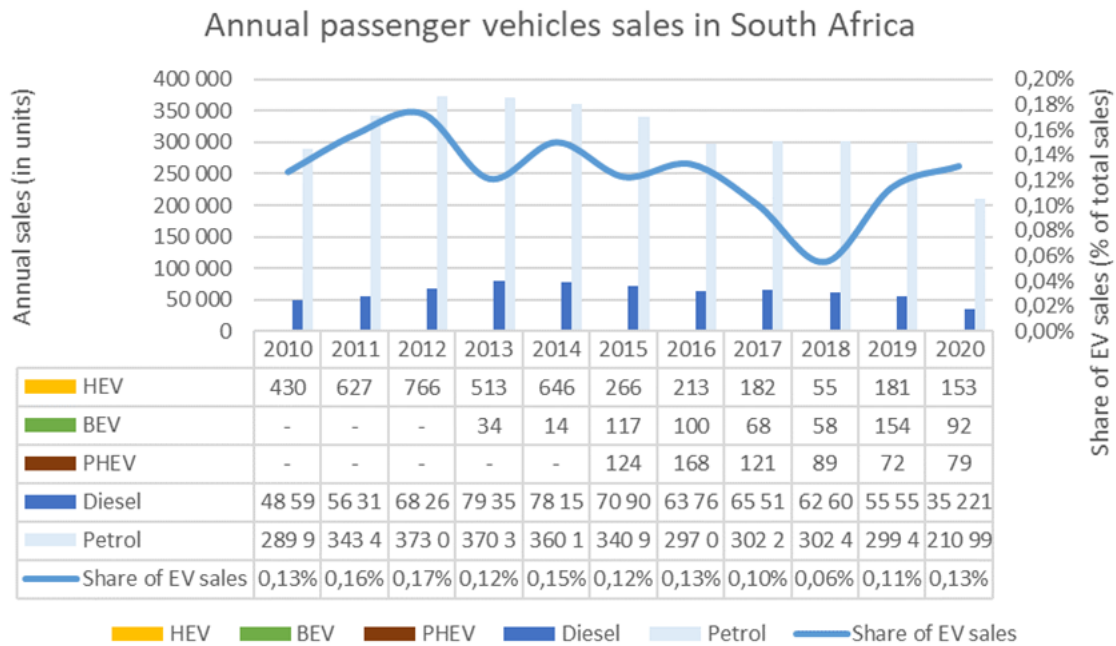


Figure 5: EVs sales between 2010 and 2020<sup>11</sup>

One relevant impact of the project, not tangible in terms of physical installations, but equally relevant is the fact that the project **triggered the opportunity for different departments and actors on the transport sector and across sectors to work together in a collaborative manner**. Some interviewees highlighted the fact that they were able to meet and connect with, for example, other government departments with whom they had not worked before. The project also enabled everyone to speak the same language when discussing LCT.

This change from the traditional “silo working approach” into a more **integrated working approach** across teams and sectors is beneficial for future design of new EVs and NMT transport strategies, since in fact the transport sector is connected to several other sectors and areas such as the energy sector, the health sector, industrial development and technology innovation, entrepreneurship and Small and Medium-size Enterprises (SMEs), among others. Interviewees have highlighted that they expect this **collaborative way of working** to continue after project closure.

Even though the contribution of the project towards the stated impacts is recognised by the consulted stakeholders and the ET, the **project was just the first step: the momentum was created and now there is a need to keep building on it**. There is still a lot of work to be done towards generating a significant and longer-term impact in the reduction of Greenhouse Gases (GHG) emissions from changes in the transport sector in South Africa. Although EVs presence are growing, they are still incipient and technologies will continue to improve, they tend to be more expensive than the traditional internal combustion engine vehicles and the shift to EVs also needs to be accompanied by infrastructure improvements (i.e. charging stations) and public awareness about the benefits of adopting them. On the other hand, NMT such as cycling, also need infrastructural improvements (safe bicycle lanes), schemes that would increase access to bicycles, as well as awareness raising and promotion ensuring that the conditions are in place for it to be safely used, and thus, to promote its uptake in the country. Nevertheless, the project has conducted research studies on NMT and has implemented pilot projects on EVs that confirm the potential and positive impact of taking actions on the EVs and NMT fields. It has particularly been able to **increase awareness among policy makers** about the benefits of including low carbon technologies and “greener” strategies in the planning processes of the transport sector and thanks to the LCT-SA, the **topic has gained a more significant presence in the political agenda**.

The project contributes to the Inclusive and Sustainable Industrial Development (ISID) in its 3 main areas: **it is economically competitive, environmentally sound and socially inclusive**, since:

- It contributes to the future **economic competitiveness** of the transport and the energy sector since it supports the development of the electric vehicles parts and bicycles local manufacturing as well as the

<sup>11</sup> TIPS, 2020 based on data from Lightstone Auto

needed infrastructure (e.g. the PV-charging stations) for their deployment and use. It has also supported the development of specific studies addressing the EVs and the NMT (cycling) markets, which provide conclusions about the needs and opportunities to grow for both markets, for example the study on the batteries manufacturing for EVs and on the business models for the implementation of a bike share project that contemplates access to bicycles and affordability issues of potential users (mostly students).

- It is **environmentally sound** since it contemplates the development of the transport sector by using EVs charged with solar power systems, thus reducing the use of fossil fuels not only from the vehicles themselves but also from the electricity grid. In the case of NMT, although not really implemented and used, cycling was the focus as a means to fulfil the commuting needs of the population (mostly students). These means of transport, EVs and cycling, contribute to environment protection and GHG emissions reduction as well as other polluting emissions. In addition, this project is also helpful to address transport planning under a cross-cutting approach for the sustainable development of cities and communities across South Africa.
- It is **socially inclusive** because it has considered a wide variety of stakeholders in its implementation: government departments and agencies, private sector actors (EV industry, local bicycle manufacturers and SMEs), academia (University of Johannesburg), the cities as beneficiaries of the pilot projects and the users. It is particularly inclusive in terms of capacity building and awareness since it has considered a gender-balanced team of speakers when conducting workshops and events, it has provided specialised training to the project team, and has participated or held in events that included industry leaders, government officials, experts on the transport sector, students and the youth, etc. at national (including municipal, provincial and national level) and international level conferences.

The progress towards impact is **Highly Satisfactory**.

## 2.2 Project Design

### 2.2.1 Overall design

The project was and remains aligned with the national goals and strategies of South Africa, particularly to promote the widespread use of EVs and NMT, as part of the Green Transport and Green Cities' initiatives of South Africa. The project components, as formulated in the ProDoc, are sound, appropriate and consistent with the project objective. The components addressed:

- The need to provide information, build capacity and improve the policy, regulatory and legislative framework of the country, in relation to LCT topics (Component 1),
- The need to demonstrate, through pilot projects, the benefits and the technical feasibility of adopting cleaner modes of transport (Component 2).

The project also responds and is designed in alignment with UNIDO's mandate on ISID, as well as GEF's Guidelines for implementation of the GEF Public Involvement Policy as this project is among the first interventions promoting the nation-wide use of EVs and NMT in an integrated manner: policy improvement, institutional capacity building, demonstration and awareness raising. The activities designed and conducted under each of the components are aligned with those 3 goals.

The baseline cases for each selected city in the ProDoc are very well described and justified, as well as the Barriers and the Actions proposed to be taken in order to address them. However, the baseline analysis conducted at the design stage should have been able to point out the key challenges that NMT faces – safety, limited appropriate infrastructure and lack of access to bikes. If these would have been identified at the design stage then the NMT activities, and consequently associated project target indicators, could have been better defined. For example, the NMT activities could have targeted more studies to support the municipalities to address these challenges instead of trying to develop and implement 3 NMT pilot projects.

Risks considered at design stage in the ProDoc include: i) Management priorities in the participating public and private sector organizations change over time, resulting in reduced participation or even termination of collaboration; ii) The general public resists changes due to a lack of understanding and perceived danger of the technology; iii) Proposed improvements to the institutional and regulatory framework are delayed by public institutions; iv) Incentive and financial support system are insufficient; v) Technology failure; vi) Uptake by other South African cities is limited due to lack of interest and incentives; and vi) Climate change negatively impacts the infrastructure installations put in place by the project. These risks were clearly identified, assessed, rated and mitigation measures were also identified. Moreover, risks were revised during project implementation to account for potential changes in context and modified accordingly in FY 2017.

In terms of the implementation arrangement design, the project performed well, and the involved stakeholders were committed to their roles. There was a good coordination of actions and the project team was able to face challenges arising during implementation such as changes in staff or delays due to the COVID-19 pandemic without compromising the quality of the project results.

The project design included a M&E plan and its associated budget, which is discussed in Section 2.4.2.

*Overall Design is rated as Satisfactory.*

### 2.2.2 Project Results Framework (PRF)

The quantitative goals (targets as defined in the PRF) and main objective are well defined. The PRF has identified indicators and targets at objective level, outcome level and output level and they are specific, measurable, attainable, achievable and timebound (SMART). The PRF does identify gender-related indicators and includes targets in terms of gender participation in activities where appropriate. Some indicators also ask to track age disaggregated data in addition to gender. Baselines, means of verification, assumptions and risks are included and described. Nevertheless:

- The assumptions and risks, although included, are not clearly differentiated one from the other.
- The GHG emissions indicator targets were too ambitious. At project design stage there was a set of incentives that were expected to be put in place by the government that would foster the growth of EV and NMT in South Africa. As those were not developed/adopted, the number of EVs used at that stage to calculate the GHG emissions for the project was very ambitious.
- Issues on the identification of an indicator and its respective target: the indicator “*Number of enhanced standards and regulations for EV infrastructure developed*” was not well defined at the start because the project cannot develop standards or regulations by itself, only provide support for the corresponding government organisations that deal with this for them to be able to develop them. Therefore, this indicator and target should have been different, such as for example “*Number of enhanced standards and regulations for EV infrastructure supported by the project*” or “*Number of proposals for standards and regulations for EV infrastructure supported by the project*”.

*The PRF is rated Satisfactory.*

The Project Design is rated as **Satisfactory**.

## 2.3 Project Performance

### 2.3.1 Relevance

The LCT-SA was and is very relevant for the South African context since:

- the transport sector accounted for 28% of final energy consumption in the country (97% of which is in liquid fuels) and demand is expected to double by 2050<sup>12</sup>.
- The South African energy sector relies heavily on fossil fuels (particularly coal, putting South Africa among the largest coal consumers of the world) and has positioned the country as the 13<sup>th</sup> largest CO<sub>2</sub> emitter in the world. The transportation sector’s contribution to GHG emissions has increased by 33.3% in the 10 years from 2000 to 2010, translating into 13.1% of South Africa’s total GHG emissions. Road transport contributed 91.6% towards the total transport GHG emissions in 2010, mainly due to increased motor vehicle sales.
- In its recent policy documents, the GTS (which was developed with support from the LCT-SA), the South Africa Low Emissions Development Strategy and the new NDC being prepared, clearly highlights the importance of transitioning to accessible, cost-effective and affordable low carbon transport systems, identifying amongst other things the promotion of EVs and hybrid vehicles and the provision of infrastructure to promote NMT and eco-mobility.

Therefore, the actions proposed and promoted by the LCT-SA to adopt a cleaner transport sector in South Africa are very relevant to mainly reduce the carbon footprint of the country by reducing consumption of fossil fuels with the installed solar PV charging stations for the EVs, and by promoting the adoption of EVs and NMT. This also has

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<sup>12</sup> Information from the ProDoc.

an impact at regional level as well since other countries from the region can learn from the success stories and lessons of the LCT-SA implementation.

The project is aligned as well with global initiatives such as the Paris Agreement, and contributes to the Sustainable Development Goals (SDGs):

- SDG-7 (Ensure access to affordable, reliable, sustainable and modern energy for all)
- SDG-9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation),
- SDG-11 (Make cities and human settlements inclusive, safe, resilient and sustainable)
- SDG-13 (Take urgent action to combat climate change and its impacts)
- SDG-17 (Strengthen the means of implementation and revitalize the global partnership for sustainable development)

The project is well aligned with the GEF Focal Area under which it was implemented (CCM – Climate Change Mitigation) since the proposed actions and implemented activities directly tackle GHG emissions, which in this case are associated to the transport sector. In addition, apart from being directly related to UNIDO’s mandate on ISID, the project contributes to UNIDO’s four (4) strategic priorities as defined in the *UNIDO’s Medium-term Programme Framework 2008-2021 – from strategy to action*<sup>13</sup>: (a) advancing economic competitiveness; (ii) safeguarding the environment; (iii) creating shared prosperity; and (iv) strengthening knowledge and institutions.

On the other hand, the stakeholder’s opinions show that the project is very relevant for South Africa, and this is reflected in their answers to the online questionnaire and the interviews (see Figure 6).

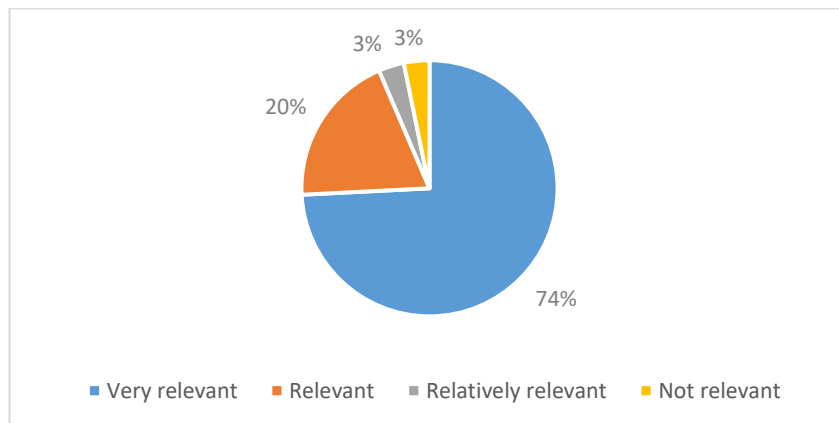


Figure 6: Project relevance for their own organisations and for South Africa, in the opinion of the stakeholders

It is also worth mentioning that the comments received from the stakeholders about its impact and the relevance highlight mostly the awareness creation in South Africa about the role that transport systems play in the energy transition, its potential, especially regarding EVs, and also the role that NMT could play. They have also highlighted the contribution the project made to the political agenda through the GTS, which is a very important piece of policy for the country, and the work that still remains to be explored/done in terms of policies for NMT and EVs based on the studies and research that were conducted through the project. In addition, they also referred that there was a huge added value in terms of promotion, education on concepts and technologies, training, and demonstration through infrastructure deployed about how EVs can support the decarbonisation of the economy. It also provided a better understanding of the challenges that exist for adopting NMT massively, especially cycling.

Relevance is rated **Highly Satisfactory**.

### 2.3.2 Effectiveness

This section looks at both the actual achievement of the expected results (Short- and Medium-Term Outcomes) and its potential for replication and adoption at larger scale (Long-Term Outcome). The analysis is based on the PRF and the TOC, complemented by our review of documents and the information gathered through the online

<sup>13</sup> [https://www.unido.org/sites/default/files/files/2019-01/MTPF\\_Brochure\\_23-06-2017.pdf](https://www.unido.org/sites/default/files/files/2019-01/MTPF_Brochure_23-06-2017.pdf)

questionnaire and interviews. Further details can be found in Annex 6: Details on project progress towards impacts where each indicator of the PRF is addressed and the results achieved evaluated.

It is to be noted that changes adopted throughout the project implementation period are taken into account for this analysis. These changes are reflected in decisions taken by the LCT-SA team and PSC and included in the Inception Report and PSC Meeting Minutes. Particularly, in the Inception Report, there were changes and comments regarding the targets on the PRF, which were considered to build the effectiveness analysis matrix included in Annex 6: Details on project progress towards impacts, that is the base for the analysis of the effectiveness. Those changes are related to: targets set for the expected GHG emission reduction, the exclusion of game reserve EVs and inclusion of national parks; and adopting “EcoMobility” when addressing modes of transport, and not only “EVs” and “NMT”.

### **Outcome 1.1: Enabling policy and regulatory framework, together with strengthened institutional capacity and enhanced awareness, facilitating early and widespread use and local manufacturing of EVs and NMT in South Africa**

The LCT-SA has been able to engage government stakeholders in the low carbon transport conversation and to incentivise the inclusion of the topic in their political agenda. The project has been able to contribute to the development of the **GTS of South Africa** for the 2018-2050 period and to build a national vision for the future of transport in the country. The GTS was issued in 2018 by the DoT and this piece of legislation is a significant milestone for the strengthening of the policy framework aimed at the promotion and adoption of low-carbon transport modalities and future strategies in every mode of transport since it addresses not only road transport but also aviation, maritime and rail transport.

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*“The vision of the GTS is to substantially reduce GHG emissions and other environmental impacts from the transport sector by 5% by 2050”.*

GTS 2018-2050

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The LCT-SA has focused on two specific transport modalities: light EVs and NMT, particularly cycling. One of the project outputs aimed at developing specific EVs and NMT policies and, although specific policies were not developed for each sector separately, the GTS mentions both topics and, additionally several studies and research has been done by the project, including a roadmap and policy papers that provide valuable information about the potential for market growth and what is needed for that to happen. They include for example:

- “Unity in Sustainable Mobility: Roadmap towards building a unified Electro Mobility Industry in South Africa” published by EVIA (January 2017)
- “Exploring the Policy Impacts of a Transition to Electric Vehicles in South Africa” Policy Brief (May 2019)
- “Opportunities to Develop the Lithium-Ion Battery Value Chain in South Africa” (January 2021)

Awareness raising, capacity building and stakeholders’ engagement events were hosted during all the project execution. Government officials attended relevant events such as the 30th Electric Vehicle Symposium (EVS30) and the Expert General Meeting (EGM) that was hosted at the UNIDO Headquarters in Vienna in 2017/18, which was significant to intensify the interest of various government departments in the electrification of the transport sector. The project has been successful in its stakeholders’ engagement activities and was able to involve stakeholders representing the national, provincial and local governments (public sector), e-mobility and energy industry organisations from the private sector. This is evidenced through the diversity of attendees registered in workshops, events, etc. as well as through the responses received to the online questionnaire released by the ET and the interviews carried out to the involved parties.

A long list of events where the project participated, was invited to, or that the project hosted and facilitated is captured in the projects’ progress reports revised by the ET, confirming that the LCT-SA has participated or hosted more than 40 events including workshops, capacity building or awareness raising activities. Although it is difficult to measure the impact on policy-makers, change has been witnessed and all the knowledge and information that the attendees received through these events is still evolving and growing. The events really elevated the potential role that EVs and NMT can play in transport planning.

One significant training to be highlighted is the 12-week online course offered by the United Nations Institute for Training and Research (UNITAR) that took place from 18 September 2017 to 8 December 2017 on Sustainable Urban Mobility in Developing Countries. The course was targeted at urban and transportation planners, decision-makers from local governments as well as representatives of service providers (national governments, private sector, NGOs) and international organizations involved in the transport sector worldwide. The LCT-SA took this opportunity to sponsor a group of stakeholder delegates to undergo the course as part of the capacity building project component and, out of the 18 delegates supported to participate in the course, 70% received certificates of participation and completion.

Workshops and events were executed in all the different cities involved which increased engagement not only at national level but also with local municipalities, that are then the ones responsible for the development of the necessary infrastructure to support LCT.

Several awareness raising materials and information dissemination materials were developed throughout the project including papers, studies, banners with project milestones, the project website, Twitter account, Instagram profile and Facebook page to showcase project progress and expand its footprint. PowerPoint presentations delivered during workshops and events are available as materials in the project website too, and thus available for consultation by anyone interested in the topics.

### **Outcome 2.1 Improved non-motorized and public transport result in a reduction of GHG emissions in the transport sectors of the Cities of Durban and Johannesburg; adequate infrastructure facilitates widespread utilization of EVs powered by renewable energy.**

Several PV charging stations were deployed as a result of the project (Output 2.1.4). A total of 8 (eight) stations were installed in different cities or municipalities including Sandton (Johannesburg area), Centurion municipality, Pretoria Central and City of Tshwane (Pretoria area), Bellville and Somerset West (Cape Town area), and in the Shamwari Game Reserve. This objective was surpassed since more than 2 stations were installed and the project was successful in expanding the geographical scope by including other cities apart from the originally planned Shamwari Game Reserve and City of Johannesburg. At the time of writing of this report, 6 (six) PV charging stations are working, and 2 (two) are being fixed as they faced some technical issues. Three (3) of the PV charging stations are grid-connected so the ability to displace electricity from the grid and, consequently, reduce carbon emissions through that means. As per information received, at the end of 2020 there are around 5,500 EVs in South Africa. Unfortunately, there are no records about how many vehicles are using the UNIDO installed systems or how much electricity is being generated by the PV systems in the charging stations. Only the newly installed City of Cape Town PV charging station has started to collect data in December 2020.

NMT studies on potential pilot projects were carried out. Cycling was the focus of the NMT analysis for the LCT-SA. Studies evidenced that the population is still reluctant to adopt the cycling habit as a means of transport mostly due to safety reasons as well as access to bikes. There was a draft proposal for a National Cycling Strategy (and even TORs were developed to commission this task) but unfortunately the strategy was never developed. The two studies were conducted for the City of Johannesburg for a cycling scheme in the city (the “Mobilized” study and the “Kite Capital” study), especially addressing the University Corridor. These two research projects commissioned by LCT-SA contributed significantly to the broad knowledge base needed for informed decision-making, which can also be used by other cities, but unfortunately no actual pilot project or infrastructure for NMT was implemented. There were as well several discussions at PSC level regarding the challenges that NMT face in South Africa such as municipal by-laws that do not include clear definitions for NMT or somehow “impede” NMT project implementation, the legality of using NMT (e.g. tuk-tuks) for passenger transport, the use of electric bicycles (“pedelecs”) which are not allowed on the roads, etc. A significant outcome of the activities related to NMT is the identification of the youth as a key potential user and promoter of NMT, especially students if access to bikes is facilitated.

In Durban (eThekweni Municipality) no pilot project activities have been implemented because the Municipality’s energy and transport departments have reflected a change of priorities where e-mobility and NMT are concerned. In spite of this, the project team has remained actively in communication with Durban throughout the implementation period to identify synergies and potential opportunities. Evidence of this are the workshops and events where the LCT-SA team participated alongside the eThekweni Municipality, such as for example the 3rd workshop on Developing Cycling Cities co-hosted by eThekweni Municipality’s Go!Durban and Green Corridors on 13-14 October 2020.

During the 2017/18 period there were some scoping studies for the inclusion of an electric bus in the city of Johannesburg, as a pilot project. However, no further developments were achieved regarding electric buses as a result of the LCT-SA.

Particularly with regards to Output 2.1.3 on the adoption of standards and regulations for EV, there was no development of new standards, but international standards were adopted instead (IEC standards). In addition, the national government, through the DoT with the National Regulator for Compulsory Specifications (NRCS), will initiate activities regarding the legislating of standards that will run after LCT-SA completion, which seems to be a more appropriate approach for this type of activity.

The overall rating for effectiveness is **Highly Satisfactory**.



### 2.3.3 Efficiency

Efficiency considers several aspects of the project:

- (i) cost of the project and value for money;
- (ii) mobilization of co-finance;
- (iii) use of inputs (if more results could have been achieved with the same inputs – human resources, financial); and
- (iv) production of results, outputs and outcomes in a timely manner and if those were of good quality and accuracy.

As per the last Progress Report dated November 2020, the financial overview and expenditures show that out of the total GEF budget of USD 1,300,000, a total expenditure of USD 1,281,348.38 was registered and there are available funds totalling USD 89,399.32 (difference between available funds and total expenditure is due to VAT to be claimed by the project which is returned back to the Grant). The report also includes plans for using the remaining funds, totalling USD 63,000, on digital design of the legacy booklet and to finalize some of the project activities (such as for this FSE).

Regarding the mobilization of co-finance for the project, the ET believes that co-financed was mobilized as planned since the activities were implemented.

The project had several delays and had a longer implementation period than the originally foreseen, in part due to the impact of the COVID-19, but also due to (strategy or leadership) changes in the priorities of the beneficiaries that required the LCT-SA project to refocus some of the activities originally planned or look for alternative cities where pilot projects could be implemented. The project implementation period lasted from 17 March 2016 (if the date of the Inception Meeting is considered, which is the first formal activity of the project that took place) to 31 March 2021 (5 years).

The activities that were implemented were completed within budget, i.e., with the budget defined at the project design stage. All the budget was received and there were no availability issues with it.

The quality and accuracy of the deliverables is perceived as very good. Key deliverables are the PV charging stations; originally two (2) were planned and the project finally was able to install eight (8) in total. The GTS is also a very relevant policy document for the South African Transport sector whose development was supported by the project that that was adopted by the Government and is now undergoing implementation under the direction of the dtic. The studies commissioned by the LCT-SA project for the NMT topic are of good quality and relevant to understand what the best way would be to further continue tackling and developing NMT. Quality related to conferences, events, workshops, dissemination of information and the materials developed for this, as well as stakeholders’ engagement through workshops and events stands out as well.

Regarding the NMT space, it is perceived by the stakeholders that they could have done better, there were delays on the policy objectives and in the end no NMT policy was developed, in addition to changes in priorities by the beneficiaries that impacted on the NMT pilot projects implementation, that eventually were not done.

In terms of the overall quality of the activities conducted by the project, the questionnaire results show that the ones with the best rate are those related to creation of awareness and the establishment of the coordination mechanism to execute the project (see Figure 7).

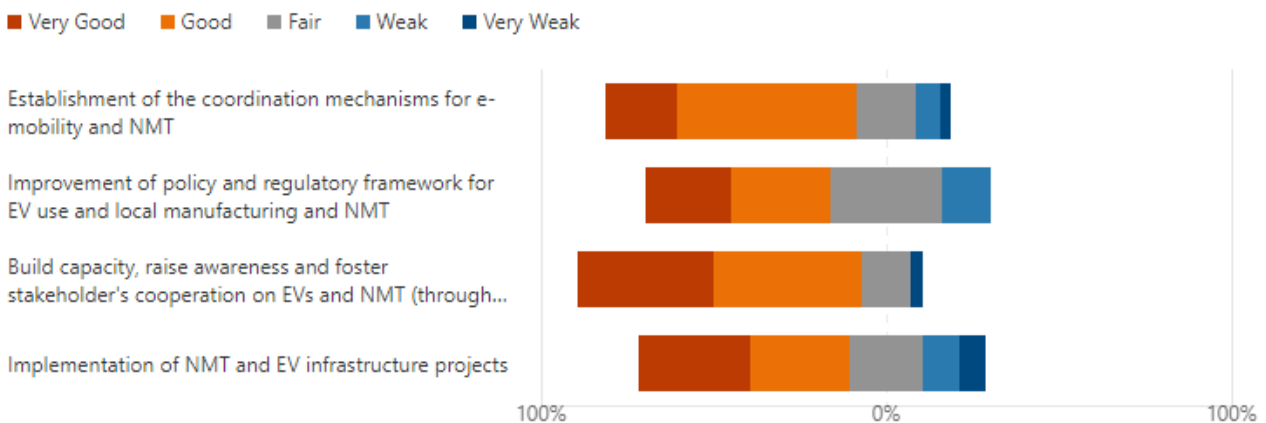


Figure 7: Activities rating by the stakeholders in the online questionnaire

And particularly on the capacity building workshops, on-job trainings and information dissemination events, the stakeholders think they were good or very good (see Figure 8).

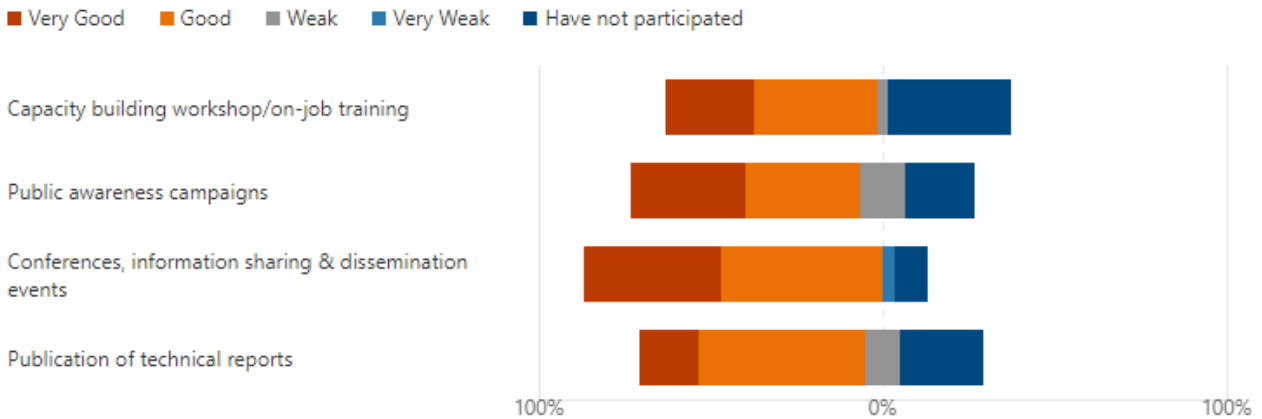


Figure 8: LCT-SA capacity building workshops, on-job training and information dissemination events rating by stakeholders

Efficiency is rated Satisfactory.

### 2.3.4 Sustainability

The sustainability analysis assesses the likelihood that key stakeholders can sustain the benefits yielded by this project after it has been completed. Based on the answers received and interviews conducted, the stakeholders state that **there will be a continuation of their work and efforts in the cleaner mobility topic**. They were already working this topic and the project supported them in bringing it to a next level, reaching out to a wider audience and giving it more relevance at national level. The **project has helped in putting the topic in the political agenda** of some stakeholders, but especially at ministerial level, which helped in considering cleaner mobility as a focus area that the government is now strategically looking at.

With regards to the “tangible” results of the project, there are signs that contribute to the sustainability of the action:

- The project supported the development of the **GTS, which is a long-term strategy and vision for the transport sector development in South Africa**.
- Although there were people working in clean transport at SANEDI, **a formal working “unit” was created** when this project started, to ensure support during the execution and sustainability of the action. **The unit has now grown, and it has its own programme of action in the clean mobility space**, and by the end of the project the unit was even able to raise its own funding.
- The **project’s webpage is now, after project closure, hosted by SANEDI** and profiled on SANEDI’s site too (found currently under the tab “Programmes” - “Cleaner Mobility” - “Low Carbon Transport”). SANEDI is going to maintain it after the project closes. It was referred that the project has built the capacity and provided the tools for SANEDI to influence decision making in the country.
- Significant effort has been made by the project to raise awareness and share information and knowledge about cleaner modes of transport by means of dissemination materials, media and events. These efforts have made it possible for the **topic to be included in the political agenda** and gain traction in the country.
- The **LCT-SA legacy and sustainability impact eBook is published online** to capture all the project outcomes, results, stakeholders that contributed and promoted the project, the benefits of EcoMobility, discuss its future, profile success stories, discuss gender as a cross-cutting topic, among other. This is a very relevant publication.
- **Lessons learnt from this project will inform future programmes related to mobility, approaches and strategies that should be adopted**, and the project will also be showcased as an example for other African countries to take (e.g. Ghana, Kenya) who are becoming more interested in the topic.
- The LCT-SA project made a lot of impact within the country. They were able to **install charging stations, and thus motivated the Government to look closer into LCT** because they were able to see the benefits and started including LCT in their Government fleet.

- **SANEDI is looking into extending the cleaner mobility programme** that deals with EV to include hydrogen.
- **The Electric Vehicles Industry Association (EVIA)**, which received support from the LCT-SA, has been able to start its formalization process to become a legal entity

Sustainability is rated **Highly Satisfactory**.

Overall project performance is rated as **Highly Satisfactory**.

## 2.4 Cross-cutting performance criteria

### 2.4.1 Gender mainstreaming

**Gender was mainstreamed both at the design and implementation phases of the project.** As part of the monitoring and evaluation process that was planned at project inception, indicators were identified in the PRF to track impact of the project on gender equality. These indicators were intended to sense women participation in project activities such as workshops, capacity building etc., to see the impact on women as beneficiaries of the project interventions, and to identify if gender topics or specific gender related suggestions were included or not in the policies that were developed with LCT-SA support. In fact, at project design stage, a specific annex was included as part of the ProDoc submitted for approval that included a “gender analysis of South Africa” (Annex E) that includes a detailed review of the gender scenario with an emphasis in the energy sector and transport sector, it also explores the gender dimensions of the project and provides a guide for data collection and tracking indicators for each project component, outcome and outputs.

In the implementation stage, project progress reports indicate that the percentages of women involved in workshops, capacity building and events was higher than the targeted percentages (20% was the target stated in the PRF); fact that was also confirmed through the interviews conducted during this evaluation to the project stakeholders. Project managers stated that in most cases female representation was either 50% or more. This applies to the broader scope of speakers at own and third-party seminars and events, representation on panels, and audience attendance. In addition to gender, the project also has a strong focus on youth in the transport industry. In spite of this, the ET did not have access to any records or registries where the actual percentage of women participants was monitored, and the LCT-SA managers recognised the fact that they should have monitored and recorded these figures more accurately.

In spite of the previous, the project managers have always been aware of the importance of keeping a gender-balanced approach and of considering gender mainstreaming and women’s rights in project activities implementation and project deliverables. Evidence of this is the fact that:

- Most stakeholders think that the project may have contributed to gender equality (see Figure 9).

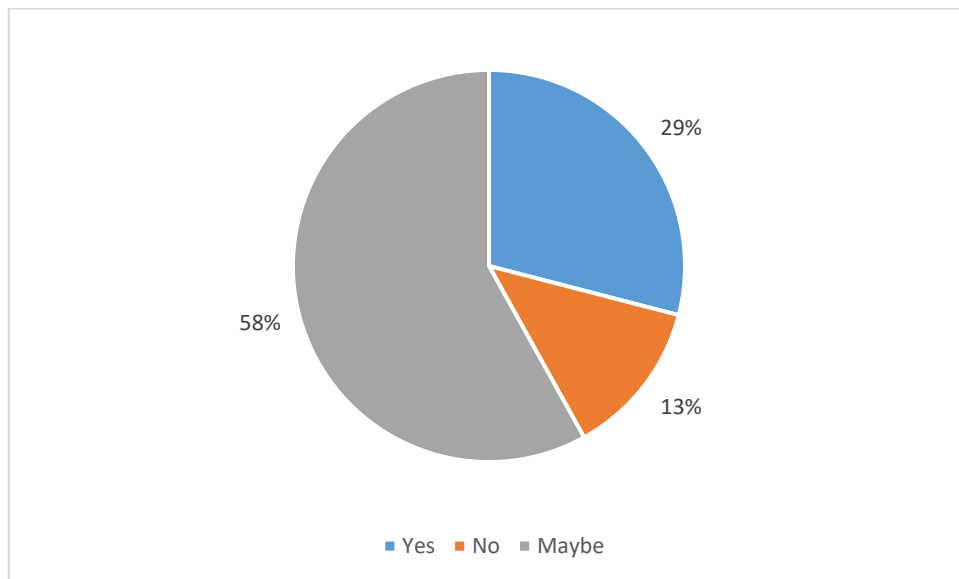


Figure 9: LCT-SA project contribution to gender equality

- Speakers invited to deliver presentations in project events have included both women and men equally and a gender-balanced panel was always ensured. This could be partially confirmed by looking at pictures

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of some events In the PIR FY2020, this was expressly stated, and figures show that a 55% female participation was achieved in the conferences held that year, as panel speakers.

- The UNIDO LCT-SA legacy and sustainability impact eBook includes a special chapter showcasing the role of the different women involved in the LCT-SA project implementation (Chapter “The LCT-SA team – walking the (gender) talk”).
- Both the PMU and the PSC had throughout the project a significant women representation of approximately 60% or more, showcasing the inclusion of gender on the project also at the managerial level. In fact, it was pointed out that in South Africa, Ashanti Mogosetsi is now recognised as the LCT person, and that she was great in raising awareness on the LCT but also on showcasing the role that women can play in the sector and inspiring women to do so.  

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*“Ashanti was an outstanding gender representative and she was raising awareness organically as being one of the faces of the LCT-SA and by addressing the issue of gender within the energy and LCT sectors”.*  

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*Interviewee comment.*  

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- The ET has also witnessed the relevant role of women in the LCT-SA project through the interviews conducted. The ET had the opportunity to speak to several women that were involved in the project implementation, from several organisations and also as members of the PSC. This is a positive aspect of the project. Out of the 20 people interviewed via videocalls, 10 were women (50%). On the other hand, the results of to the online questionnaire show there is a relevant participation of women in the sector since 55% of the answers were provided by women.
- The LCT-SA project has participated in some events where the focus was on women’s role in the energy sector, the transport sector, etc.:
  - The University of Cape Town Graduate Business School Women in Business virtual conference (14 August 2020);
  - Africa Energy Indaba (AEI) Women in Energy Conference, 2018: The Women in Energy focus of the Indaba was guided by UNIDO and included representation of the LCT team to profile the role of women in this sector. As part of UNIDO’s own efforts to advance gender mainstreaming of all its projects, plans are underway to ensure inclusivity of awareness raising, profiling and identifying career development of women in this sector. As a consequence of the profile afforded at the AEI, a number of follow up meetings have been held and workshops attended that will give greater focus to activities linked to gender issues that need to be addressed in the promotion of eco-mobility (extracted from Doc #06).

This FSE, apart from assessing gender mainstreaming as one of the evaluation criteria, has tracked/assessed the inclusion of gender in the development of the present report, by calculating gender participation in its interviews and in the responses to the online questionnaire as well as asking for the stakeholders views on how the project had mainstreaming gender.

Overall, there was a Project Gender Mainstreaming Strategy established at project design stage, described in the ProDoc (page 29) that to the ET understanding was not thoroughly implemented during the project.

Gender mainstreaming is rated as **Satisfactory**.

### 2.4.2 Monitoring and Evaluation

The budgeted M&E plan is described in the ProDoc, section C (page 30 and 31), accompanied by Annex A and Annex F of the same document, and also described in the Inception Report.

**M&E activities were considered at the project design stage** and constituted the third project component having specific objectives, outputs and an adequate allocated budget (see Table 2). In addition, the PRF detailed specific and measurable indicators to be used to monitor the project implementation performance. The M&E activities of the project followed the principles, criteria and minimum requirements set out in UNIDO and GEF policies and guidelines.

The implementation of the M&E Plan rests with the PMU, national counterparts and UNIDO, as per the Inception Report. According to the ProDoc, the M&E procedure would consist of: a) project inception; b) semi-annual reviews; c) tracking project progress and d) independent final evaluation. The M&E activities identified had a total allocated budget of US\$ 150,000 (US\$ 50,000 from the GEF and US\$ 100,000 from co-financing). Table 2 below includes a description of the M&E activities as stated in the ProDoc, and any changes or amendments adopted throughout project execution.

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All project partners and contractors are required to make their studies, reports and other documentation related to the project available, as well to facilitate interviews with staff involved in the project activities. This was the case during the FSE since the ET had access to the available documentation and reports.

*Table 2: M&E activities/outputs at design stage and budget*

Main M&E Activities / Outputs as per ProDoc	Amended M&E Activities / Outputs	Targets / time	Budget in US\$	Engaged Parties
Project Inception Workshop & Report	-	Within 2 months of project start / one report	80,000	PMU, UNIDO Project Manager
Measurement GEF Tracking Tool specific indicators	-	Continuous activity		PMU, UNIDO Project Manager
Monitoring of project impact indicators (as per LogFrame)	-	Continuous activity		
Periodic Progress Reports (feeding into PSC meetings)	They were not done semi-annually; they were done following the PSC meetings schedule.	Semi-annually (summary of the progress made during the most recent six-month period)		
Project Implementation Reports (PIRs), including visits to project sites	-	Annual PIRs		
Terminal Report (TR)	The PMU stated that the Legacy Booklet can be considered the TR.	At project end / 1 report		
Mid-term evaluation	Changed to the development of the Theory of Change report (informed by PM) (Doc #05)	1 Report	70,000	PMU, external evaluator/consultant
Independent Final Evaluation	The Final Self-Evaluation and accompanying Final Self-Evaluation Report (this report) at the end of project implementation	1 Final Self-Evaluation Report / end of project		Independent evaluator, PMU, UNIDO Project Manager, and UNIDO Evaluation Group
<b>Total budget for M&amp;E</b>			<b>150,000</b>	

The following table (Table 3) includes observations to the implementation of the M&E activities/outputs as per the M&E plan and its amendments throughout time. As it can be seen, **overall, the M&E activities/outputs were implemented on time and in accordance to the workplan.** All Project Reports that the ET had access to seem complete, accurate and fit for purpose.

*Table 3: Observations to the implementation of the M&E plan, activities/outputs*

Main M&E Activities / Outputs	Target / Time	Where these activities/outputs carried out/achieved on time?	Where these activities/outputs carried out/achieved complete and accurate?
Project Inception Workshop & Report	1 workshop and 1 report within 2 months of start	 Yes, the Inception Workshop was carried out in March 2016 and an Inception Report was issued alongside this meeting.	 Yes, they seem accurate and complete.
Measurement GEF Tracking Tool specific indicators	Continuous measurement. The tool itself requests update at mid-term and at final stages	 The GEF Tracking Tool was completed at project submission alongside the ProDoc but it was not updated (it is optional for Medium Size projects at mid-term stage). Data collection from the pilot projects that were installed (i.e. the 8 PV-charging stations) was not performed by the PMU.	 No, the PMU does not compile any data or information that can aid the GHG emissions reductions estimate

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Main M&E Activities / Outputs	Target / Time	Where these activities/outputs carried out/achieved on time?	Where these activities/outputs carried out/achieved complete and accurate?
Monitoring of project impact indicators (as per LogFrame)	Continuous monitoring	Monitoring of indicators was conducted for most of the indicators except for some which included sex and age disaggregated data (data records are missing), and GHG emissions reductions (or data from where these could be calculated, e.g. number of vehicles, electricity generated by the systems, charging hours, etc.).	Mostly yes, except for the GHG emissions reductions and sex and age disaggregated data.
Periodic Progress Reports (feeding into PSC meetings)	To be done following PSC meeting schedule (annually)	These reports were done before each PSC meeting to inform about project progress, although not done semi-annually. These are the reports found: PSC Progress Report (October 2016 – June 2017) Progress Report (July 2017 – May 2018) Progress Report (July 2018 – June 2019) Project Progress Report (01 July 2019- 28 February 2020) Project Progress Report (01 March-30 November 2020) There will be another one covering December 2020-March 2021, it is under development at the time this FSE is taking place.	Yes, although there were done following the PSC meeting schedule (annually) and not semi-annually. However, they are complete and accurate and provide enough information on project progress.
Project Implementation Reports (PIRs), including visits to project sites	One PIR per fiscal year, following GEF guidance	A total of 4 PIRs was issued. They cover: FY 2017 (includes since Jan 2016) FY 2018 FY 2019 FY 2020	The PIRs are complete, accurate and follow the GEF template.
Terminal Report (TR)	One at the end of the project	Developed as the “UNIDO Legacy impact ebook”	As per the M&E plan, the TR should summarize the activities/achievements of the project implementation, lessons learned and future upscaling potential, as well as relevant gender dimensions. The ET thinks that the “UNIDO Legacy impact ebook” covers those topics.
Mid-term evaluation	Development of the Theory of Change report (informed by PM) towards middle of implementation period	Conducted on July/August 2019	Report seems accurate and complete
Independent Final Evaluation	The Final Self-Evaluation and accompanying Final Self-Evaluation Report (this	Carried out between February 2021 and June 2021	Not assessed as it is this report.

Main M&E Activities / Outputs	Target / Time	Where these activities/outputs carried out/achieved on time?	Where these activities/outputs carried out/achieved complete and accurate?
	report) at the end of project implementation		

Note that a Risk log has been kept updated throughout the project, as per suggestions made by the PSC, at each PIR reporting moment. Particularly with regards to the monitoring of the several indicators described in the PRF, the ET would like to highlight that although it is positive that many of them included tracking women participation in the project activities, even disaggregated by age, perhaps it was over ambitious, as although the project team has confirmed that women participation was significant (see section 6 for details) the project team did not to register this information properly. The ET could not access clear information about the degree (either in percentages or number) of women participation in the activities.

The M&E is rated as **Satisfactory**.

### 2.4.3 Results-based management (RBM)

The LCT-SA ProDoc was approved for implementation on 11 June 2015 by GEF and entered a “start-up phase” for six (6) months until its actual implementation start date on 1 January 2016. The Inception Workshop took place on 17 March 2016. The project was conceived as a 3-year medium-size project and was expected to finish its implementation by 30 June 2019 (i.e. 3 years and 3 months after the Inception Workshop date). Nonetheless, the project **received two (2) time extensions** until the actual end date on 31 March 2021 (5 years from the Inception Workshop). The first extension was agreed by the PSC and extended the project implementation period until the end of 2020. This extension is referred to in the PIR of FY 2018 where it is stated that the Work Plan has been extended and budgeted up to the end of June 2020 (this was due to delays in project execution). The second extension was granted by UNIDO in May 2020 and extended the project implementation period until 31 March 2021 to allow for the completion of the remaining activities and to account for the delays caused by COVID-19 pandemic on some activities (Doc #41), as for example in the completion of the implementation of some pilot projects.

A **workplan** was put in place at the start of the project – in the Inception Report, 2016 – and was revised and updated based on the actual project implementation progress, as evidenced from the Progress Implementation Reports and the update Progress Reports in 2017, 2018, 2019, 2020 and 2021.

In accordance with the Inception Report “*the PSC will meet on a six-month basis but can also be organized on an ad hoc basis as required*”. Additionally, in accordance with the ProDoc Annex F on the M&E plan, “*the first PSC meeting should be held within the first 12 months of the inception workshop*”. The Inception Workshop was held on 17 March 2016 and therefore the first PSC meeting was supposed to happen until March 2017. As per the documents revised by the ET, the Terms of Reference for the PSC members were developed in February 2016, the PSC Chair was nominated on March 2016 and its members nominated by October 2016. The first PSC Meeting was held on 28 May 2018, therefore having over 14 months of delay with respect to the expected deadline to host this meeting.

The PSC has met 5 (five) times during project execution, having conducted meetings on:

- 28 May 2018 (initial meeting)
- 17 September 2019
- 10 March 2020
- 01 December 2020
- 09 June 2021 (last meeting)

The M&E plan specified in the ProDoc and in the Inception Report was the one used throughout the implementation of the project. The system was however adapted: the project started to develop annual Progress Reports instead of six-month progress reports; the deadlines for the project outputs/products were revised and updated on the Progress Implementation Reports and consequently the workplan for the project was also updated.

The project demonstrated that it **used a flexible and adapted management and implementation approach and tried to rapidly and effectively adapt to unforeseen changes or risks**. According to information made available to the ET and based on feedback collected from the stakeholders, the project adapted its activities when necessary to respond to:

- Delays in project implementation or the need to refocus some activities due to change of mandate or change of leadership in the different Government departments involved in the project.

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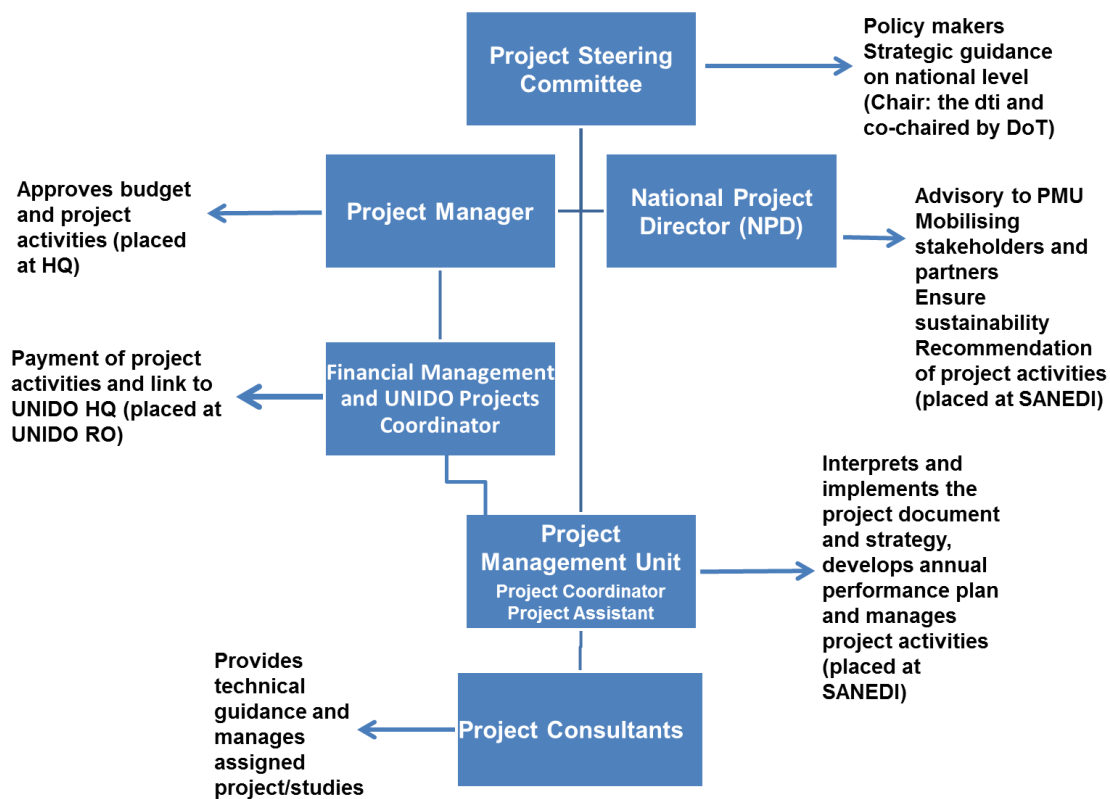
- PSC observations, concerns and suggestions – e.g. regarding the tracking of the EV uptake and the impact of awareness creation and communication, having a risk log and updating it frequently to better manage delays, concerns regarding the NMT activities, and changes to include other cities in the scope of the project (Port Elizabeth, City of Cape Town, Nelson Mandela Bay) to compensate for the limited interest from other cities due to changes in priorities or political leadership (e.g. Durban, eThekwni Municipality) and a recommendation to discontinue the national cycling strategy work due to continuous delays in activities associated to this task, among others.
- COVID-19 Pandemic – the pandemic that arrived at Europe and Africa in the beginning of 2020 impacted the conduction of some of the last activities that were planned, such as the procurement of equipment and parts for the installation of PV-charging stations in the City of Cape Town.

The information on project performance and results achieved was shared with the PSC through its annual/semi-annual meetings, and guidance and suggestions on the depth/content of the activities were discussed / proposed by the PSC considered by the PMU. As per the interviews carried out, the implementation approach used on the project was appropriate to achieve the global results of the project.

The **UNIDO HQ-based management, coordination, monitoring, quality control and technical inputs have been efficient, timely and effective.** The UNIDO HQ has performed all its assigned activities in the project, even with the several changes in staff allocated to the project, held the necessary meetings with SANEDI (executing agency) and the project partners, always participated in the PSC meetings. In addition to its assigned activities, UNIDO was key in engaging with stakeholders for the organisation of the activities as needed. The UNIDO-HQ also maintained the donor (GEF) informed and updated about project performance and activities through the submission of the corresponding PIRs (four (4) in total).

Rating for the RBM is **Highly Satisfactory.**

### 2.5 Performance of Partners



*Figure 10: LCT-SA Project Structure taken from the Inception Report*

#### 2.5.1 UNIDO (Implementing Partner)

UNIDO is the implementing partner of the LCT-SA project and is responsible for reporting back to GEF about project implementation progress through the PIRs as well as for participating in the PSC. As per the revised



documentation, the GEF Focal Point in South Africa is highly satisfied with UNIDO as implementing agency of this project.

UNIDO's role in the LCT-SA has positively impacted on relationships building. UNIDO has developed a good working relationship with the executing partners and has also triggered synergies between stakeholders that took part of the LCT-SA. Some examples are:

- The dtic is formulating the implementation plan of the GTS and has asked UNIDO if they could provide support for that.
- SANEDI and the City of Johannesburg have been discussing about the possibility of implementing an electric bus demonstration project in 2022. This can be considered a positive effect of the support that UNIDO provided to SANEDI through the LCT-SA.
- The City of Cape Town has been able to build a lasting relationship with the teams of the two City buildings where the PV systems are installed, which is positively impacting on a project they are working on now (Energy performance certificates, which need to be displayed in all the buildings by end of 2022). This task is running more smoothly with these two teams in comparison to the rest of the other teams in other buildings of the City and this is thanks to the relationship they have built due to the LCT-SA.

On the other hand, the stakeholders have acknowledged the work done by the LCT-SA team and whenever there is something related with LCT they are invited to participate and contribute to that (e.g. like to the Climate Change Adaptation Action plan).

UNIDO is seen as a politically neutral and enabling partner (i.e. not influencing people) that can support projects implementation and provide objective guidance for projects in key areas of action, such as transport. Having UNIDO as the interlocutor, especially with policymakers, made a difference to move forward with the policy development because UNIDO is seen as a reliable partner with no vested interest. Another positive characteristic to highlight is UNIDO's flexibility to adapt to changes on the stakeholders' priorities and the political environment.

UNIDO's performance is considered **Highly Satisfactory**.

### 2.5.2 SANEDI - South African National Energy Development Institute (Executing Partner)

SANEDI is a Government agency established in 2011 to "*direct, monitor and conduct energy research and development, promote energy research and technology innovation as well as undertake measures to promote energy efficiency throughout the economy*". The LCT-SA Project is hosted and executed by SANEDI's **Cleaner Mobility Programme** which focuses on investigating and demonstrating alternative ways of mobility that will lead to the improvement of the environmental, social and economic conditions of the country. This makes SANEDI the right executing agency to accompany UNIDO in the implementation of the LCT-SA project.

The LCT-SA PMU that coordinates the project is hosted at SANEDI and are responsible for coordination of the work to be carried out by other local project partners, nomination of the National Project Director, potential absorption of the project team after project closure and ongoing support on workshops/trainings, demonstration projects, etc.

It is the ET's opinion that SANEDI has performed well and executed its activities with good quality to respond to the project needs, engaging stakeholders effectively and working on the ground to support the implementation of this project. They have been very committed and that is valuable for UNIDO and for the project itself.

SANEDI's performance is considered **Highly Satisfactory**.

### 2.5.3 The dtic (Endorsing Partner)

The dtic (formerly dti), together with DoT, were responsible for the effective execution of Component 1 of the project (i.e. the policy component), with the dtic focusing specifically on policy related to EV promotion and manufacturing.

The dtic has also acted as the Chair of the PSC and has participated in all PSC meetings as such providing inputs and guidance to the project team. The dtic provided all its necessary inputs and contributions adequately to the project.

The dtic performance is considered **Highly Satisfactory**.

### 2.5.4 Department of Transport (DoT)

The DoT, together with the dtic, were responsible for the effective execution of Component 1 of the project (i.e. the policy component), with DoT focusing specifically on NMT promotion policy. The DoT also has acted as co-chair of the PSC. Two branches of the DoT were involved in the LCT-SA project implementation: The Environmental

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Coordination Branch and the Roads Transport Branch. Having the DoT in the project was fundamental since transport and the automotive industry in South Africa are significant contributors to the local economy and therefore any interventions to make the sector “greener” would have a significant impact.

The Environmental Coordination Branch was mainly involved in the development of the GTS. The GTS was developed and adopted by the government and now its implementation is being planned. The Roads Transport Branch was responsible for the development of the Green Paper Roads Transport Policy for South Africa and requested support from the project for the development of a National Cycling Strategy since they are responsible for NMT as well. The project provided support for the development of the draft Terms of Reference to commission the development of the mentioned strategy. In addition, there was a draft Proposal for a National Cycling Strategy but there were delays from the DoT and eventually the strategy was not commissioned nor finalised.

The ET considers that all its necessary inputs and contributions adequate to the project.

The DoT performance is considered **Highly Satisfactory**.

### 2.5.5 Technology Innovation Agency (TIA) represented by uYilo

TIA is responsible for the effective execution of Outputs 2.1.3 and 2.1.4 of the LCT-SA, specifically focusing on infrastructure development and the associated technologies. The uYilo National eMobility Programme had representation in the PSC and worked closely with the project team and has collaborated throughout all project implementation period in several activities (adoption of standards for EV infrastructure, participation in events and conferences, contributed to an international discussion paper on best practices in eMobility, supported the verification of compliance for the installation of EV charging stations). Their role was very important, especially in the battery field, which is a fundamental part of any EV.

The National Programme for Electric Mobility uYilo is running since 2013, they were involved as stakeholders in the initial phases of the project and started representing TIA in the PSC since 2019. They were founding member of EVIA in 2014.

The ET considers that all its necessary inputs and contributions adequate to the project.

The TIA/uYilo performance is considered **Highly Satisfactory**

### 2.5.6 Department of Forestry, Fisheries and the Environment (DFFE)

Originally engaged as the Department of Environment (DEA), currently DEFF, its role is to oversee project progress and strategically maintain the direction of the project in line with environmental priorities. It is aimed at supporting the project’s NMT activities and the development of national-level policies. DEFF has collaborated and facilitated sessions on NMT technologies and policy at the DEFF- Developing Cycling Cities- NMT conference and also in planning a NMT webinar/conference for the eThekweni Municipality that was hosted in October 2020 during transport month.

DEFF has contributed a lot to project progress and achievements. Although it was not part of DEFF scope of activities within the project, it would have been useful to ask them for guidance with regards to GHG emissions reductions monitoring.

The DEFF performance is considered **Highly Satisfactory**

### 2.5.7 Donor (the GEF)

The Donor provided funding for the project as expected and was very relevant for SANEDI because thanks to the LCT-SA project and the GEF funding, SANEDI was able to achieve their annual performance plan. This collaboration was very useful and valuable for a government agency like SANEDI because the Cleaner Mobility Programme continues and has been able to go on after project finished.

GEF was present only in the first meeting of the PSC, and although it was part of its assigned tasks to be part of the PSC, this partner was not present in any other PSC meeting. In addition, in accordance to the M&E plan, the GEF FP was expected to be involved in the FSE process but this was not possible, the ET could not interview the person representing the GEF for this project.

The GEF performance is considered **Satisfactory**.

### 2.5.8 Project Steering Committee

The PSC was created to ensure ongoing coordination of the project and cohesive leadership. The PSC consists of high-level representatives from the dtic, DoT, TIA (via uYilo), DEFF, UNIDO, SANEDI and the GEF Focal Point for the LCT-SA project. The purpose of the PSC is to provide strategic guidance for the project while ensuring no overlap with other development projects, and to maximize the input and participation of the project counterparts,

as well as coordinating these inputs. The PSC also reviews and approves or rejects amendments to the project based on the approved ProDoc in accordance with UNIDO and GEF procedures, and in line with the GEF council document. The PSC Chair is the dtic, appointed in 2016, with the DoT as co-chair.

The PSC is expected to meet on a six-month basis but can also be organized on an ad hoc basis as required. In this project, the PSC has met approximately once a year. Other experts and/or government departments and agencies may be invited to attend the PSC meetings, which was the case in some of them where key experts were invited as observers.

The PSC has performed well and has been committed to its functions, has debated and agreed on modifications to the project, has proposed solutions to challenges faced by the project and has registered its meetings in meeting minutes as required. The guidance provided by the PSC to the project has been appropriate and of good quality to lead it. The PSC has engaged with different departments and also some of the members participated actively in events and workshops.

The PSC performance is considered **Highly Satisfactory**.

### 2.5.9 Beneficiaries

Due to changes in some of the beneficiaries plans and priorities, the project had to engage other cities which were not originally planned. Therefore, although it was not possible to carry out the project in the locations as envisaged, the team was effective in building new partnerships and finding alternative locations. Thus, the partnerships built for this project with the beneficiaries provided them with the opportunity of learning through the pilot projects, receiving capacity building and training opportunities, also allowed them to interact among themselves and share experiences and ideas through workshops, events etc.

It is the general view of the stakeholders that the almost all the beneficiaries supported the development of the project through the implementation of their activities, and that they were key for the success of the project.

Overall, the performance of the beneficiaries that were effectively engaged in the project is considered **Highly Satisfactory**.

#### 2.5.9.1 City of Johannesburg (CoJ)

The City of Johannesburg together with the eThekweni Municipality were involved in the execution of Outputs 2.1.1 (improvement of policy and regulatory frameworks to promote NMT and public transport) and 2.1.2 (strengthening institutional capacity and share experience with other cities) of the project, working with the project to develop and operationalize projects and policies for the promotion of NMT in their city.

A Business and Financial Model study for a cycling scheme for CoJ was finalised in Q1 2017, and CoJ remained as the custodian of the study. There were changes in terms of priorities after a change in the Mayoral head of the CoJ during FY 2018-19 that impacted on the NMT activities since the CoJ decided to reallocate funds to non-infrastructure related NMT projects and requested support to conduct studies for a potential pilot project. Although interest was shown to implement the business models identified, no pilot project was finally implemented in CoJ for NMT.

However, CoJ has been involved throughout project execution since the topic is relevant for the climate change mitigation strategies and were able to do the two studies for the bike share system in the University corridor, which has potential for future implementation.

#### 2.5.9.2 eThekweni Municipality and City of Durban

The eThekweni Municipality, through their Energy Office, together with the Johannesburg Municipality, were involved in the execution of Outputs 2.1.1 (improvement of policy and regulatory frameworks to promote NMT and public transport) and 2.1.2 (strengthening institutional capacity and share experience with other cities) of the project, working with the project to develop and operationalize projects and policies for the promotion of NMT in their city.

The eThekweni Municipality was engaged mostly at the beginning of the project implementation period, but some workshops were held throughout all of it. There were synergies identified between DEFF and UNIDO in the beginning of 2020 to promote NMT policy and strategies through a workshop in eThekweni, that was hosted in October 2020 during "Transport Month". In spite of these communications and efforts, unfortunately some priority changes not controlled by the project took place and there were no pilot projects implemented in eThekweni.

In addition, follow-up and conversations were also held between the LCT-SA project team and the City of Durban, there was insufficient support or interest from the City of Durban, and it has been difficult for UNIDO to understand the position of the City and if there was in fact any possibility to provide them with support. This fact became more significant during FY2018-19 and the project started to look at other cities such as the Nelson Mandela Bay Region.

### 2.5.9.3 City of Tshwane (Pretoria)

Two (2) PV-charging stations were installed in the area. The systems are working very well and the although there were some delays and technical issues the city was (and continues to be) committed to continue operating and using the PV-charging stations. They are very happy with the outcome of this installations.

### 2.5.9.4 City of Cape Town

In the City of Cape Town, two (2) PV charging stations were installed. They are grid connected. The City has performed well and was able to handle the installations, even though there were some delays with the procurement process. They internally worked well, and the City was able to coordinate its own teams in each of the two buildings concerned (Somerset West and Bellville) to have the installations done. They have appointed a project manager that coordinated the installation processes of the stations. The inter-departmental relationships that were built internally in the City of Cape Town government thanks to the LCT-SA project will last and are in fact beneficial for them to continue implementing other projects.

### 2.5.9.5 Shamwari Game Reserve

Shamwari game Reserve was engaged in the installation of a PV charging station at the beginning of the project and fulfilled its role as foreseen in the ProDoc.

## 2.5.10 Other Partners

Besides the partners already mentioned and assessed above, there are other two that are important to reference: the EVIA and Eskom (the national electricity utility).

**Electric Vehicle Industry Alliance (EVIA)** is a Public Private Sector consortium constituted to shape and stimulate the local EV industry in South Africa. The EVIA (previously known as the Electric Vehicle *Infrastructure* Alliance) is a uYilo/SANEDI initiative in collaboration with BMW, Nissan SA and Gridcars. It was initially created with the objectives of creating a favourable environment for the introduction of electric vehicles in terms of their battery recharging, transaction handling, and other tracking and communications systems in South Africa in both a financially viable and environmentally safe manner. The Forum has grown to become a body that overlooks EV initiatives and projects in South Africa. UNIDO has been instrumental in supporting the Association to develop a governance structure. The Association has developed a constitution and a Memorandum of Incorporation (MoI) to formally register EVIA as an independent body, which is now being formalised into a legal entity.

This is a key stakeholders' group which is composed of market actors with a focus on electric mobility. The LCT-SA project has invested resources in supporting EVIA to ensure a continued platform of engagement and activity beyond the lifespan of the project. The association has different working groups addressing infrastructure and technology topics, awareness creation and capacity building, policy topics, etc. EVIA has produced as part of the LCT-SA project documents the "Unity in sustainable development: roadmap towards building a unified electromobility industry in South Africa".

**Eskom** was not a foreseen partner of the project in the ProDoc, however it was evident for the project that there was a crucial need to get aligned with them and to get them involved in the project, as the electric vehicle market is supposed to continue growing with the expectations that EVs will exceed other vehicle forms by 2040, and Eskom will be a key partner to bring about the needed infrastructural support as well as to ensure that EVs are charged the right electricity tariff. In fact, Eskom was not very convinced at the start of this project but then they saw the benefits, engaged with the project and became one of the project champions.

## 2.5.11 Establishment of Partnerships

As per the ET perception the project was very successful in the establishment of partnerships at different levels to achieve its objectives. In fact, it is the opinion of the ET and of the consulted stakeholders, that establishment of partnerships has been key for the success of this project.

- **The management and implementation partnership** (between UNIDO, SANEDI, the dtic and other partners in the PSC) **was very efficient and effective**, and it was key for driving this project to its results, surpassing even some of them. It was in fact highlighted in several interviews that the commitment and involvement of UNIDO and the way they positively and effectively adapted the project to the needs of South Africa, the great relationships that were formed at the institutional level within the government institutions in the PSC were pointed out as great. In fact, through this engagement the project contributed to **change the political agenda of South Africa for the transport sector**.
- **The level of engagement and interaction was key to promote green transport in South Africa**. The project successfully engaged with a very diverse range of stakeholders that are involved and might get involved in the LCT sector (government institutions, municipalities, utility, industry, universities, and

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associations in the delivery of its activities and productions of its outputs). Key partnerships were established with:

- **municipalities and institutions** that installed the pilot EVs charging stations. The project managed to engage with more municipalities than was foreseen in the project and installed four (4) times more EV charging stations than the expected.
- **Universities** that are key on shaping young students and thus to inform and form their studies on what can be their role in the market.
- **automobile industry and the utility**, and the fact that they became important stakeholders of the project, is a statement for the long reach of the establishment of partnerships by the project.

**These partnerships are key to guarantee the sustainability and the legacy that the LCT-SA leaves.**

Overall, **partner performance and establishment of partnerships** is considered **Highly Satisfactory**.

## 2.6 Overall project achievement and rating table

The following table summarises the ET assessment and results.

*Table 4: Summary of the ET assessment of LCT-SA implementation and ratings*

Evaluation Criterion	Rating	Comments
<b>A. Progress towards Impact and Results</b>	HS	LCT-SA was able to generate a positive impact towards increasing awareness about EcoMobility in South Africa by introducing the necessary advocacy about EVs, transferring knowledge and creating capacities in key stakeholders and decision-makers through supporting the development of the GTS (and also the topic is now being included in other policy documents), implementing capacity building activities and having several events for awareness creation and information dissemination, involving not only the public organisms but also the private sector.
<b>B. Project Design</b>	S	
B1. Overall Design	S	The project overall design is good, nevertheless the activities designed for the NMT topic could have benefitted from a deeper baseline analysis because the barriers identified for NMT uptake and the challenges faced during project implementation (e.g. changes in cities' priorities and political agendas) did not make it possible for the conduction of the 3 NMT pilot projects.
B2. Project Results Framework	S	The PRF is well defined and has all the components it should have. However, there are a few findings to take into account: assumptions and risks were not differentiated, GHG emissions reductions targets were too ambitious and relying on a potential mechanism that the government was to approve and did not, and the indicator on the enhanced standards to be developed (Output 2.1.3) should have been more appropriately defined.
<b>C. Project Performance</b>	HS	
C1. Relevance	HS	The LCT-SA was and continues to be very relevant for the South African context in terms of climate change mitigation potential, interlinkages to other sectors (e.g. energy), alignment with national and international policies, strategies and goals, and alignment with GEF and UNIDO's strategies, goals and areas of action.
C2. Effectiveness	HS	Although the LCT-SA was not as successful in the NMT space as it was in the EVs space, the impact generated, and activities carried are very valuable for the future of EcoMobility in South Africa.
C3. Efficiency	S	The project had several delays in the execution of activities and was implemented in more than 5 years (originally planned for 3 years). In terms of funding, the funds were received on time and spending on the activities was within the approved budget.  The quality and accuracy of the deliverables is perceived as very good, although it is perceived by stakeholders that in the NMT space they could have done better because there were too many delays in getting the policy drafted, which eventually was not done.
C4. Sustainability	HS	The sustainability analysis assesses the likelihood that key stakeholders can sustain the benefits yielded by this project after it has been completed. Based on the answers received and interviews conducted, the stakeholders state that there will be a

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Evaluation Criterion	Rating	Comments
		continuation of their work and efforts in the cleaner mobility topic, maybe not at the same speed, but still the efforts will continue, therefore showing signs of sustainability.
<b>D. Cross-cutting performance criteria</b>	S	
D1. Gender mainstreaming	S	Although gender was mainstreamed at project design (there is a gender analysis and a strategy annexed to the ProDoc) and considered during project implementation (project managers confirmed a high percentage of women participation in events and always ensured a balanced panel of speakers), there are no records kept (except a few pictures) about the participation of women in the activities.
D2. M&E design and implementation	S	There was an M&E plan developed at design stage which is clear in its requirements. The LCT-SA made some changes to it, some of which are not clearly recorded, and the implementation of the M&E plan suffered some challenges since some indicators and records were not properly tracked.
D3. Results-Based Management (RBM)	HS	The project demonstrated that it used a flexible and adapted management and implementation approach and tried to rapidly and effectively adapt to unforeseen changes or risks. However, the project received two extensions and ended up being implemented in 5 years, updates to the work plan were conducted and registered though. The PSC met for the first time in 2018, when this should have been in 2017 (i.e. within the first 12 months of implementation), it is not clear why the PSC has not been able to meet before. Even though there were several changes in terms of personnel throughout the project period, the team has been able to adapt well and managed the project very well.
<b>E. Performance of Partners and establishment of partnerships</b>	HS	
E1. UNIDO	HS	Excellent performance and great relationship building achievements. UNIDO is seen as a politically neutral and enabling partner (i.e. not influencing people) that can support projects implementation and provide objective guidance for projects in key areas of action, such as transport.
E2. SANEDI	HS	SANEDI did a very good job in making the project a reality on the ground and hosting the PMU, they had a very proactive attitude and coordinating the project very well alongside UNIDO.
E3. The dtic	HS	The dtic has performed very well and complied with its assigned tasks, among them, being the Chair of the PSC.
E4. DoT	HS	The DoT has performed very well and complied with its assigned tasks, albeit the delayed suffered in the NMT policy development.
E5. TIA (uYilo)	HS	TIA supported and provided contributions to the discussions and complied with its responsibilities.
E6. DEFF	HS	DEFF supported and provided contributions to the discussions and complied with its responsibilities.
E7. Donor (GEF)	S	The donor provided funding as agreed. The GEF FP was only represented in the first PSC, and although it was part of its assigned tasks to be part of the PSC, this partner was not present in any other PSC meeting.
E8. PSC	HS	The PSC as a group performed well, had its meetings as agreed and informed on their resolutions providing strategic guidance to the project and addressing any issues constructively to overcome them.
E9. Beneficiaries (Cities)	HS	Due to changes in some of the beneficiaries plans and priorities, the project had to engage other cities which were not originally planned. Therefore, although it was not possible to carry out the project in the locations as envisaged, it is the general view of the stakeholders that the almost all the beneficiaries supported the development of the project through the implementation of their activities, and that they were key for the success of the project.
E10. Establishment of Partnerships	HS	The LCT-SA was very successful in establishing key partnerships with key stakeholders and in creating synergies with their ongoing work and activities. As per the ET perception the project was very successful in the establishment of partnerships at different levels to achieve its objectives. In fact, it is the opinion of the ET and of the

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Evaluation Criterion	Rating	Comments
	S	consulted stakeholders, that establishment of partnerships has been key for the success of this project.
<b>OVERALL ASSESSMENT</b>	<b>S</b>	In summary the ET found the LCT-SA overall <b>Satisfactory</b> .

### Colour code used in the rating assessment:

Score	Definition	Category
6	<b>Highly satisfactory (HS)</b>	<b>SATISFACTORY</b>
5	<b>Satisfactory (S)</b>	
4	<b>Moderately Satisfactory (MS)</b>	
3	<b>Moderately Unsatisfactory (MU)</b>	<b>UNSATISFACTORY</b>
2	<b>Unsatisfactory (U)</b>	
1	<b>Highly Unsatisfactory (HU)</b>	

## 3 Conclusions, recommendations and lessons learned

### 3.1 Conclusions

#### **C1. The LCT-SA has been able to introduce the “low carbon transport” concept in the local political agenda, encouraging the stakeholders to take it into consideration for the energy transition planning and as a means to reduce the carbon footprint in South African cities**

The project was able to put the concept of “low carbon transport” in the local political agenda and created a momentum thanks to the adoption of the GTS, which is a significant milestone and establishes an agreed trajectory for the country for the transport sector for the 2018-2050 period. This is a great achievement of the project, although it was a big challenge to make all stakeholders work together and collaboratively. The LCT-SA succeeded in putting the topic on the table and elevated the discussion at the policy level. Institutions are owning the space and trying to move forward with the sector, there is value created and there is opportunity to do more and continue expanding the market, especially having in mind South Africa’s Net Zero objectives. The transport sector plays a big role in the South African economy and along the national goals and plans and the LCT-SA has helped the sector to gain visibility.

Particularly EVs *per se* are a new concept in South Africa and although in the past years the number of EVs did grow, there is still potential to be exploited and areas that need improvement (e.g. EVs still face taxes that make them more expensive). The LCT-SA programme was good to introduce the necessary advocacy, integrate the concept in the country by providing physical “*look and feel*” for people to understand what this technology is about. Most of the stakeholders that were consulted think in fact that the project had a positive impact on fostering EVs adoption (58% think it contributed mainly due to its wide awareness creation campaign, the GTS and the installation of EV charging stations in several cities).

#### **C2. The LCT-SA implemented and executed a fruitful and massive information dissemination, awareness raising and capacity building campaign that has enabled the creation of connections and relationships that go beyond the execution of this particular project**

The introduction of the LCT concept was possible thanks to the dissemination of information with a strong awareness raising, capacity building and training process that lasted all the project implementation period. The LCT-SA has participated and hosted a great number of events locally and internationally to “market” the idea of “decarbonising” the transport sector through EVs (and NMT), and to provide capacity building to the stakeholders. The project triggered their interest, particularly the municipalities’, and some of them started to work and ask for support for their projects.

The most relevant effect of this “awareness campaign” was felt in the EVs topic, which was supported by the installation of PV-charging stations, giving the end-user the possibility to test the technology and experience it by themselves. This also provided the opportunity to identify potential areas for improvement and learn some lessons out of the experience.

The LCT-SA has been well-recognised for its extensive national capacity building efforts, accommodating various South African cities to support them with their sustainable transportation needs and solutions. Also, a rich diversity of means (apart from the events) to disseminate information have been produced and used such as brochures, articles, videos, radio interviews, website, Facebook page and Twitter account, Instagram profile, banners for events, etc. enabling the project to reach a wider audience.

Particularly for SANEDI, LCT-SA made a significant impact in terms of creating capacity and consolidating a team that will continue working on the LCT topics, informing decision making, researching (e.g. they are looking into battery manufacturing technologies, hydrogen fuel cells for vehicles, charging infrastructure, etc.) and sharing knowledge. In addition, SANEDI has been even able to start raising funds for its own sustainability and continuation of efforts in the LCT space.

#### **C3. The project has been able to facilitate the implementation of 8 (eight) PV-charging stations, beyond the originally 2 (two) that were planned at design stage.**

The project was able to implement 8 (eight) pilot projects (PV-charging stations) instead of the envisaged 2 (two). This is a very good result and shows the ability of the team to take advantage of arising opportunities to implement demonstration activities. In addition, many of them are grid-connected systems, allowing not only to charge EVs but also to displace more carbon-intensive electricity generated by the grid, with renewable energy generated by the PV systems, therefore contributing to GHG emissions reductions.



It is also important to highlight that, when priorities started to change, the project team was effective and fast in finding other cities with an interest to demonstrate EV practices, and therefore installed charging stations in other locations, which in the end resulted in good learning experiences, adding value to the project.

In relation to the development of standards and regulations for EV infrastructure, in the end, no specific standards were developed, and international ones were adopted by the country.

**C4. The NMT related activities executed by the project did not have the same success if compared to the EVs activities. There are several reasons behind this fact which include changes in the cities' priorities and existing challenges to cycling uptake.**

Although the NMT topic was part of the LCT-SA and it was included in awareness raising events it did not have the same impact if compared with EVs. Unfortunately, the cities that had initially presented interest in conducting NMT pilot projects, particularly concerning cycling, had changed their priorities and decided to not implement pilot projects of this sort. In spite of this, LCT-SA was able to conduct two studies on cycling, particularly addressing the "Universities Corridor" (between University of Johannesburg and University of Wits) which clarified what barriers and challenges still exist for the wider adoption of cycling for commuting (e.g., insecurity, access to bikes and long distances) and also provided some ideas on potential business plans that could be implemented as pilot projects. In fact, the study on bike share schemes for the City of Johannesburg supported by UNIDO has become a key reference to guide discussions and implementation for effective bike sharing models in South African cities.

On the other hand, there were other issues around the NMT concept such as what NMT can include and how that is defined at policy level. There was as well a draft proposal for a national cycling strategy but unfortunately there were delays and the strategy was not developed in full. There still exists issues and gaps to be addressed in the NMT space.

## 3.2 Recommendations

**R1. The LCT-SA laid the ground for LCT to start to be addressed in South Africa. There is a need to build on the developed work and continue to support the development of cleaner mobility in the country. Therefore, a follow-up project to the LCT-SA is recommended.**

The follow-up project should:

- **Be framed under a more comprehensive topic, such as Smart Cities, Just Energy Transition, Net Zero, etc.** Now that the role of transport as a cross-cutting activity and its interconnections to other sectors is clearer, cleaner mobility has to be addressed through a different "lens". Nexus approaches can also be applied to explore these interrelations in more detail (such as the relationships between transport and energy, transport and food, etc.). This kind of approaches would also ease resource mobilisation. Finally, transport could also be analysed as a sector connected not only to climate change mitigation but also to adaptation.
- **Consider an extension of scope**
  - Include the role of hydrogen in transport (and how that relates to the energy industry, "green hydrogen", etc.)
  - Integrate the impacts of EVs in the manufacturing industry etc. It would be important to include activities that will support the adaptation of the automobile manufacturing industry to LCT modalities, more specifically to EVs. In fact, the referred subjects were indicated as must have topics for a follow-up project.
  - Try public transport and taxi industry, as those are not being addressed fast enough in the EV space. It is not an easy thing to tackle but needs attention and has potential.
  - Address the "entrepreneurs and start-ups niche". While implementing the project, during events, there were small businesses approaching for funding (e.g. NMT e-bikes, EV tricycles, own charging stations). A potential idea to address this need, could involve a project that brings seed-funding or provides financing mechanism for those type of businesses to grow. This is very relevant because small businesses in general contribute significantly to the countries' economies and, if UNIDO contributed to their growth, UNIDO would be also complying directly with its ISID mandate.
  - Other topics to include may be eco-industrial parks, special economic development zones, sustainable/eco-cities, goods/products delivery that grew a lot with COVID-19 pandemic and can use light EVs, etc. which would be more receptive to include low carbon technologies and transport modes.

- **Continue to focus on municipalities**, they need support and additional capacity building to conduct feasibility studies and develop proposals for their local needs. Municipalities have a lot of influence on the transport infrastructure and public transportation systems and so they can really support the uptake of low carbon means of transport if appropriate information, knowledge and support is provided to them.
- **Continue to support the development of NMT in the country.** The metro could get involved as well and the new project could partner with a big town or city in the area preferably, and to assist them with policy and strategies development to foster the adoption of LCT, including NMT where that could make sense. On the other hand, there are a lot of students' residences near the university campuses and cycling projects that would connect both can be useful. With regards to NMT as a whole, it would be important also that the infrastructure for its use is considered in planning process, especially for new developments.

It is important to note that the dtic has requested UNIDO to support them in a follow-up phase, which shows the great commitment of the Government to continue the efforts of greening their transport sector and contributing to the overall South African low carbon energy transition.

### R2. For future UNIDO projects it would be important that:

- **In the project design phase: (i) end-users are also engaged in the process; (ii) if a project needs to promote behaviour change on a diverse range of stakeholders, there is a need to identify targeted communication and awareness raising campaigns (iii) the indicators to monitor the outputs/outcomes of the project are realistic and properly chosen, and activities for capacity building on how to apply the M&E plan are included.**
  - For potential next phases or projects, make sure to **actively engage the end-user**, which is in fact the one that will make use of the transport systems and is a key part of the puzzle because with no users there is no environmental benefit (i.e. no GHG emissions reductions). It is important to make sure that the activities of a project really talk to the diverse target audiences that the project aims to engage.
  - As behavioural change must be built from the bottom there is a real **need to understand what the most suitable engagement method is for each stakeholder**. Engagement could be done with more awareness, targeted campaigns, using the right tools, understanding people's needs, and consulting with the right experts on what techniques or methods better adapt to engage that particular community or culture, what the right channels are to approach that people, etc. A simple example is that some charging stations are located behind a fence for security reasons but in fact are open to the public. However, people need to be informed that they can ask permission to enter and use the station to charge their cars, so there is a need to improve the communication with those users. Also, of particular interest would be to engage local businesses in the areas where the stations are located, which have a small fleet of EVs and may use the stations in a regular way (easier to monitor too); this is the experience in one of the City of Cape Town stations for example and it has been positive so far.
  - Regarding M&E, it is important to make sure the **indicators included at project design make sense, respond to the actual expectations of the project and can be monitored**. Example of this is the fact that no GHG emissions reductions estimates were recorded by the project, and that was one of the main expected impacts of the project (the GHG emissions reduction is the objective-level indicator of the LCT-SA project, hence its importance). This does not mean that the PMU has to actually do the calculations, but has to make sure that a procedure is clear in order for the indicator to be monitored, such as for example signing an agreement with the beneficiaries that after hand-over they would keep a registry of the emissions that were reduced (or data that would allow the PMU to estimate it afterwards). In addition, to ensure homogeneity, templates to be used and proper training could be provided to the beneficiary for them to track progress and impact of the pilot projects, in this particular case, with regards to carbon emissions. Also, relevant to be mentioned is that gender-related indicators should have been recorded in a better way, so it is necessary to make sure the M&E plan contemplates procedures to monitor these indicators too. A recommendation is to have a short M&E training for the PMU at project start so they become aware of what is expected, if there are changes that need to be made to the monitoring framework and the PRF, be able to identify potential issues with M&E during execution and be able to address them.
- **Attention is paid not only to raising awareness and capacity building of the involved government institutions, but also to the coordination of efforts among them**, to ensure ownership of activities, establishment of partnerships that will be maintained after the project, avoid duplication of efforts and maximise synergies. This has been key in the delivery of the objectives of this project, especially concerning the change on the political agenda.

- **Integrate more media coverage, advertising and communication activities** to motivate the installation of pilot projects such as PV-charging stations or systems, explaining how the project contribute to reduce the carbon emissions, and why that is beneficial for the economy and the environment, etc. This would encourage adoption of cleaner mobility habits and projects.

### 3.3 Lessons learnt

**L1. Partnerships are key for an effective and efficient project implementation. It is important to understand the different partners to be involved in the project and appropriately choose how, when and in what way they should be involved.**

- **Thorough stakeholders understanding and engagement** is very relevant. Selecting the right partners who are willing to help and are interested in contributing to the project is one of the most important parts of designing and executing a project. An example in this case is SANEDI as executing agency and also working with people who are willing to use the assets and go beyond that, like in the case of the charging stations. The LCT-SA has brought together departments that normally work in silos and do not know each other, the cooperation space that was created will continue after this project ends, which is a value added by this project and a result of the efforts made to engage all of them.
- On the other hand, it is relevant to note that the Department of Mineral Resources and Energy (DMRE) was not fully involved in the project. Although the project team tried to involve them in several ways, and they did have some people coming to the events, meetings etc. the engagement was not effective. They think that the reasons that might have affected their engagement are, on the one hand, that there were other priorities at the DoE (coal, nuclear energy, the unions...) and on the other hand, how “Low Carbon Transport” is conceptualised in the DoE, which might have impacted on their interest or availability to get involved actively in the LCT-SA. There is a need to start involving them in the topic and UNIDO should try to bring them on board to tackle these challenges and see what synergies can be built with the DoE.

**L2. It is important to appropriately select and deploy pilot projects, as well as be able to adapt to changes when needed to achieve objective and, possibly, yield additional benefits.**

- **PV-charging stations:**
  - Procurement processes were challenging and laborious, putting together the technical specifications for the systems takes time, there were issues with the tendering process in Cape Town and they had to cancel installation and re-tender again. At IDC they had issues with the batteries after 2 years of use and they finally decided to connect the system to the grid instead of replacing the batteries due to the replacement cost, and also because the demand for EV charging was low (charging station was not very much used). **The connection of the PV charging station to the grid brought them savings on their electricity bill.**
  - **Access to the PV-charging stations** is also an issue in some cases because they are behind a fence or in a private parking lot not opened to the public, so people need to ask to enter to charge the car and maybe they do not know that. Some beneficiaries suggested using shopping centres as potential locations to reach more people and make the stations more accessible.
  - In **terms of locations**, the Shamwari Game Reserve, although a good choice from the environmental impacts’ mitigation perspective (e.g. air pollution reduction locally, not needed to store petrol risking leaks, noise reduction, etc.) and from the technical perspective too, probably was not the best choice from the “marketing” perspective since it is not in front of the public eye (also to be noted that this pilot was installed at the beginning of the project implementation period in 2016 and a lot has been learnt since then) and it was not addressing the overall South Africa transport crisis. Therefore, this pilot project helped the LCT-SA learn from this experience and decide on the next installations.
- **Communication with organisations responsible for pilot projects:** although there is a hand-over process and the PV charging systems are passed to the beneficiaries hands, it would be still good and useful to keep in touch with them, see if the process is going well, if there are any issues, etc. In one case, the beneficiary was not fully satisfied with the service provider and would have appreciated some support from the partners to solve this topic. Keeping in touch would also make it easier to monitor key indicators associated to the operation of the systems.
- **Public transport:** electric buses was part of the project design and in fact GHG emissions reduction target was set for e-buses, but this never came to a reality during the project. The public transport topic is a very sensible topic in the country, therefore a deeper analysis of the subject and what possible options actually exists to make it cleaner, should have been explored in more depth during project design.

**L4. Detailed baseline assessments at design stage and confirmation of those at project inception phase is important to assess necessary re-alignments of project activities /outcomes / outputs. This is also important to confirm the baseline information against which project progress is to be measured.** A more detailed baseline assessment on ongoing NMT initiatives throughout the country would have probably been useful to be able to refocus activities faster and find other cities or municipalities where pilots could have been deployed. In addition, it would have helped to learn better what people exactly need, because for example many people do not use bikes because it is unsafe, especially where no bicycle lanes exist. Also, on NMT there were some studies conducted which were helpful to better understand the scenario and the barriers to NMT projects implementation. However, some of the stakeholders that were involved in this topic felt that “not enough was done” and that there is still a lot of room for improvement on this topic.

**L5. Theory of Change methodology is a good tool to understand the overall impact of the project.** When the project was designed, the Theory of Change methodology was not that widely applied, but once it was developed towards mid-term implementation of the project in 2019, they realised what a useful tool it is to understand the overall impact of the project.

**L6. M&E plan implementation training, indicators selection and targets selection is very important to ensure that the project remains on track and that can actually provide the desired results.**

It is important to define realistic targets at objective level (i.e. GHG emissions reductions) because in the LCT-SA the GHG emission target defined at objective level was too ambitious; the estimates were based on a supporting mechanism that in the end was not adopted by the Government and therefore affected the expected growth of the number of EVs and NMT hence not being able to provide the estimated number of emissions reductions. On the other hand, the fact that no monitoring of GHG emissions reductions data has been performed, implies that there was a lack of training or limited awareness on what the M&E involved and on how to apply it.

Also, to highlight regarding the selection of indicators, is that it is necessary to make sure they truly represent what the project will do. For example, there was a target on the “development of 4 standards and regulations” on EVs infrastructure, when in fact the project plays a supporting role for the organisation in charge of developing the standards, and the project cannot develop standards itself, it is out of the scope of action. This specific target and indicator should have been defined differently, such as “facilitation of 4 standards and regulations”. The project in fact has been able to facilitate the adoption of SANS 62196-2 and SANS 62196-3 which are based on international standards, and supported the National Regulator for Compulsory Specifications on the Electric Vehicle Supply Equipment Regulatory Compliance Certificate.

**L7. There is frequent variability in the political will and political agendas, which should be more thoroughly evaluated at design stage within the risk analysis to mitigate the impact on the project execution**

Delays in activities implementation occurred due to postponement of policy related work due to unforeseen stakeholder delays in the approval and development of policy documentation at national level, in addition to changes in the stakeholders’ priorities with regards to NMT pilot projects. Although the project had foreseen this risk since the beginning, and rated it as *Low* at the start and *Medium* towards the end (in the Risk Log), it might have been useful to identify earlier in time to what other activities shift the resources, and make the best use of available time and resources (instead of waiting until 2020 to take this decision).

### 3.4 Good practices

#### GP1. Team Effort and Partnerships Building:

- The commitment and proactivity of all the team since the very beginning made a difference for the successful implementation of this project and also in building the right partnerships and raising awareness and engaging stakeholders
- Choosing the right executing agency, SANEDI, and making sure it has the necessary tools and autonomy and capacity to execute the project.
- Choosing the right partners and organisations that together with the implementing and executing agencies make the project move forward
- Making relationships work, keeping the enthusiasm and integrating the work of the different actors involved was key to build partnerships that will last after project closure

**GP2. Activities, workshops for awareness creation, education and capacity building:** good quality, good organisation, reaching the right audience and engaging them. People started to hear a lot more about EVs and the topic gained traction in the local agenda. Knowledge transfer and awareness creation on key stakeholders and

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decision makers was one of the strongest results. The events where the project was involved in, really elevated the possible role of NMT and EVs and so many role players had the possibility to get to know more about EVs, hybrid vehicles, and also on NMT there will be a lot of innovations coming, and they will need to integrate them in the transport strategies and work that remains to be done.

## Annex 1: Project Results Framework

Project Narrative	Indicator	Baseline	Target (by EOP, 2018)	Sources of Verification	Assumptions / Risks
<p><b>Project Objective: Promotion of the widespread use of electric vehicles (EVs) and non-motorized transport (NMT), and the development of the necessary infrastructure, as part of the Green Transport and Green Cities initiatives of South Africa.</b></p>	<p>A) Direct GHG emission savings (see the calculations and estimates of Annex G):</p> <ul style="list-style-type: none"> <li>E-cars</li> <li>E-buses</li> <li>Changes in modal shifts from cars, minibus and bus to cycling (incl. e-bikes)</li> </ul> <p>B) Indirect bottom-up and top-down emission savings</p>	<p>Around 100 E-passenger cars, and 500 E-bicycles, one pilot E-bus. Some NMT initiatives and infrastructure (see main text)</p>	<p>A) Direct GHG emission reduction of:</p> <ul style="list-style-type: none"> <li>2,753 tCO<sub>2</sub>/yr, due to E-cars: 2000 of which 20 PV-charged; and E-buses: 10, of which 2 at PV-chargers;</li> <li>6,685 tCO<sub>2</sub>/yr, due to changes in modal shift in NMT projects in Johannesburg and eThekweni (Durban) of trips made in cars and minibus-taxi (2.5%) and bus (5%) to cycling (including use of 1000 trips/day on e-bikes);</li> <li>Total cumulative direct: 117,766 tCO<sub>2</sub></li> </ul> <p>Indirect emission reduction:</p> <ul style="list-style-type: none"> <li>Bottom-up: 353 ktCO<sub>2</sub> (e-vehicles: 105 ktCO<sub>2</sub>; NMT/e-bikes: 248 ktCO<sub>2</sub>)</li> <li>Top-down: 1,079 ktCO<sub>2</sub> (e-vehicles: 301 ktCO<sub>2</sub>; NMT/e-bikes: 778 ktCO<sub>2</sub>)</li> </ul>	<p>Validated energy savings from project reports and surveys</p>	<p>Willingness of state, industry and financial institutions to support the programme and invest time and money in its implementation</p>
<p><b>Component 1: Improvement of policy and regulatory frameworks for EV use and local manufacturing, and NMT; capacity of concerned institutions built and awareness raised</b></p>					
<p><b>Outcome 1.1</b> Enabling policy and regulatory framework, together with strengthened</p>	<p>C) Number of policy papers on low-carbon transportation approved by the Government.</p>	<p>A number of policy initiatives on the promotion of low-carbon transportation exist, but</p>	<p>C) At least 2 policy documents, approved by the Government. very likely</p>	<p>Official documents Websites of organizations</p>	<p>National authorities are willing to adopt specific regulations; Interest by stakeholders to promote</p>

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Project Narrative	Indicator	Baseline	Target (by EOP, 2018)	Sources of Verification	Assumptions / Risks
institutional capacity and enhanced awareness, facilitating early and widespread use and local manufacturing of EVs and NMT in South Africa	D) Coordination mechanisms for the promotion of e-mobility and NMT	no policy documents have been approved by the Government on NMT or electric vehicles. Very limited coordination between various stakeholders in promoting EV and NMT.	the EV Roadmap, and the NMT Policy D) Coordination mechanisms (2) established and functioning.	Publicity given in media	low-carbon transportation exists and can be maintained.
Output 1.1.1 National policy and regulatory framework, incentive programmes, tax incentives, design, planning, and safety guidelines, etc. to promote early take-off, widespread use, and local manufacturing of EVs and NMT strengthened;	1) Number of policy reviews/development (number that includes gender dimensions).	1) A number of policy initiatives on the promotion of low-carbon transportation exist, but no policy documents have been approved by the Government.	1) At least two study reports prepared on potential for local manufacturing of game reserves EVs and of NMT-bicycles with recommendation on policy, incentives and support programmes (both studies) should consider gender dimensions);	Technical reports Project progress reports Workshop proceedings	National authorities are willing to adopt specific regulations.
Output 1.1.2 Concerned institutional capacity at the national level built, and awareness raised.	2) Awareness raising materials developed 3) Number of workshops and seminars organized (percentage of female/male participants (disaggregated by age)) 4) % of counterparts taking part in the development of policy papers report having benefitted from built capacity and raised awareness;	2) There are currently no trainings specifically targeting awareness raising/capacity building on low-carbon transportation.	2) Awareness raising materials available on EV and NMT 3) At least 5 workshops and seminars organized (at least 20% female participants). 4) At least 70% of counterparts taking part in the development of policy papers report having benefitted from built capacity;	Technical reports Workshop proceedings Project progress reports	Interest by stakeholders to promote low-carbon transportation exists and can be maintained.
<b>Component 2: Promotion of non-motorized and public transport in the Cities of Durban and Johannesburg, and development and demonstration of the supporting infrastructure for EVs.</b>					
<b>Outcome 2.1</b> Improved non-motorized and public transport result in	E) Number of NMT infrastructure projects implemented in the Cities	E) Lack of NMT infrastructure in the two cities	E) At least 3 NMT projects implemented	Evaluation reports	National authorities are willing to adopt specific regulations; Interest by

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Project Narrative	Indicator	Baseline	Target (by EOP, 2018)	Sources of Verification	Assumptions / Risks
a reduction of GHG emissions in the transport sectors of the Cities of Durban and Johannesburg; adequate infrastructure facilitates widespread utilization of EVs powered by renewable energy.	of Durban and Johannesburg with the project support. F) Number of PV charging stations installed and operated. G) Percentage of policies/ regulations to promote NMT and public transport that have specific recommendations or specifications for women.	F) Currently, there is limited infrastructure for EVs, charging stations that do exist or planned are mostly not PV-based,	F) At least 2 PV-based, off-line and fast-charging stations designed, installed and operated serving demonstration and testing purposes. G) 50% of developed policies/ regulations to promote NMT and public transport have specific recommendations or specifications for women.	Website of organizations and companies Project progress reports Survey results	stakeholders to promote low-carbon transportation exists and can be maintained.
<b>Output 2.1.1</b> Policy and regulatory frameworks to promote NMT and public transport in the Cities of Durban and Johannesburg enhanced;	5) Review of existing policies, regulations, and support programmes		5) Two studies on EVs and on NMT, reviewing existing policies, regulations, and support programmes with suggestions for necessary strategies, roadmaps, incentive schemes	Technical reports Project progress reports	
<b>Output 2.1.2</b> Institutional capacity for the Cities of Durban and Johannesburg strengthened and awareness raised on NMT; experience shared with the other 9 cities of South Africa under the DEA/KfW Green Cities Promoting NMT programme.	6) Number of capacity building workshops and seminars organized (% of female/male participants (disaggregated by age)) 7) Number of NMT projects implemented in Cities of Durban and Johannesburg with project support 8) Number of workshops organized for regional cooperation amongst South African cities (% of female/male participants (disaggregated by age)).	6) eThekweni Municipality has initiated staff training on the operational aspect of the bicycle sharing programme.	6) At least 5 workshops and seminars organized (20% female participants) 7) At least 3 projects implemented on NMT (in Johannesburg and eThekweni) 8) At least 2 workshops organized for regional cooperation amongst South African cities (20% female participants).	Technical reports Project progress reports Workshop proceedings	National authorities are willing to adopt specific standards/ regulations.
<b>Output 2.1.3</b> Standards and regulations for EV infrastructure, charging	9) Number of enhanced standard and regulations for EV infrastructure developed;	A number of initiatives have discussed the development of such standards, including for	9) A minimum of 4 enhanced standards and regulations for EV infrastructure developed.	Technical reports Project progress reports	National authorities are willing to adopt specific standards/ regulations.



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Project Narrative	Indicator	Baseline	Target (by EOP, 2018)	Sources of Verification	Assumptions / Risks
stations, networks, support applications, etc. developed.		inclusion in the EV Industry Roadmap but little ground-level progress has yet been made.		Workshop proceedings	
<b>Output 2.1.4</b> Design, installation and testing of at least 2 PV-based (fast, off-line) charging stations for EVs in the City of Johannesburg and in the Shamwari Game Reserve.	10) Number of PV-based, off-line and quick charging stations designed, installed and tested. 11) Percentage of ESIA's, if required, that include gender dimension	10) A number of charging stations have been installed at specific sites, such as dealerships and application specific sites, i.e. the Shamwari Game Reserve but these are mostly not PV-based, off-line or quick chargers.	10) At least 2 PV-based, off-line and quick charging stations designed, installed and operated serving demonstration and testing purposes. 11) 100% of ESIA's, if required, include gender dimension	Technical reports Project progress reports Design and installation plans and reports.	

## Annex 2: List of documents revised during FSE

<b>Number and Name of Document (the numbering is used by the ET for organisation purposes)</b>
01_UNIDO_GEF_5_CEO_ER_SA_LCT_revised_5737_signed
02_Green_Transport_Strategy_2018_2050_ZA
03_TIPS and CP 2019 - Exploring the impacts of EVs in SA_Policy Paper 20190509
04_TIPS for UNIDO Battery Manufacturing January 2021
05_Low Carbon Transport TOC_August2019 (100).pdf
06_LCT SA progress report July 2017 - May 2018 (3).pdf
07_LCT SA - Aug 2017 PSC Progress Report - Jan 2016 to June 2017(v2).pdf
08_LCT-SA Progress Report - July 2019-February 2020 Final Draft (2).pdf
09_LCT-SA Progress Report- 01 March 2020- 30 November 2020_final.pdf
10_LCT SA Progress Report_July 2018 - May 2019_02092019 (1).pdf
11_lct banners_final low res.pdf
12_Guide_on_Gender_Mainstreaming_ECC_0-2.pdf
13_ISID_Brochure_web_singlesided_12_03_0.pdf
14A_Guidelines_for_the_Implementation_of_the_Public_Involvement_Policy_4.pdf
14B_Publication_Guidelines for the Implementation of the GEF Public Involvement Policy.pdf
15_5737_2017_EVIA_Brochure.pdf
16_5737_2017_FinalReport.pdf
17_5737_2017_Knowledge_Management_Publicity_Materials.pdf
18_5737_2017_Newly_Defined_Risks.pdf
19_5737_2017_PIR_UNIDO_South Africa_New.pdf
20_5737_2017_Project_Progress_Update_Report.pdf
21_5737_2017_Workplan.pdf
22_5373_PSC_Minutes_-_28_May_2018.pdf
23_5373_Workplan.pdf
24_5515_Project_Progress_Update_Report.pdf
25_5737_2018_PIR_UNIDO_South Africa_New.pdf
26_0ANALYSIS_PATTERN_SPECIAL (2).xls
27_Concept Note - Roadshow for Tertiary Institutions_01 (1).docx
28_Draft programme01 - US.docx
29_LCT PSC Signed Meeting Minutes - 2019 (1).pdf
30_LCT SA - PSC Minutes - 28 May 2018 (1).pdf
31_SA LCT - PSC Minutes - 10 March 2020.pdf
32_LCT-SA PSC Minutes -01 December 2020.pdf
33_Project_Delivery_Report_by_Grant_and_SP_and_SC_Detail.xlsx
34_LCT SA project - hi-level project and gender info_Aug 2019 (1).docx
35_UCT_GSB_UNIDO_Programme_Digital.jpg
36_UP event - announcement_02.docx
37_Proof of impact Fw_ International Energy Agency - EV Cities Casebook and Policy Guide .eml
38_EV_City_Casebook_and_Policy_Guide_2021_Edition.pdf
39_Kite Capital_Business Model and Operator Guidance.pdf
40_Model NMT By-Laws Final Draft 22 October 2019 .docx
41_SA Project Extension_letter.pdf
42_2019 EVS32 Electric Vehicles Siemens (folder)

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42.1_EVS 32 - Siemens Workshop - Demo Station Presentations_tcm27-60827
42.2_EVS32 feedback and reporting workshop agenda
42.3_GTS Presentation EVS 32
42.4_Workshop version-Accelarate vehicle electrification_tcm27-60922
43_City of Tshwane (folder)
43.1_Concept for the Bike Share Continuation Study (003)
43.2_Final Tshwane Bikeshare Technical Report - 20190507
44_CityofJohannesburg 2018-2019 (folder)
44.1_2018_11_01_UNIDO_LCT_Project Charter_V02
44.2_2019_01_24_UNIDO_Kite_LCT_Business Case- LCT-SA Comments
44.3_Attendance register- University Corridor Bicycle Access Operator Brief Workshop_10042019
44.4_Corridor to be flooded with bicycles
44.5_Invitation to Operator's Briefing Session
44.6_Kite Capital_Business Model and Operator Guidance
44.7_Kite Intelligence (KI) UNIDO Proposal FV_120618.compressed
44.8_Kite UNIDO SANEDI Meeting notes 26 October 2018
44.9_Map of University Corridor study Area
44.10_Memo to Stakeholders Municipal Cost Containment Regulation of 2019
44.11_SA-EMobilityGEF 7-PIF-1 1
45_CoTshwane2018_2020 (folder)
45.1_Charge point 01.590-05518 Commissioning Report
45.2_Charge Point 01.590-05519 Commissioning Report
45.3_Terms of reference for charging station installation at the Tshwane House - MH 06022018
45.4_Terms of reference for charging station installation at the Tshwane House 28 AUG 2018
45.5_ToR - electric vehicle project with City of Tshwane v2 (2) (Autosaved)
45.6_Tshwane house charging station
45.7_Tshwane House VO1 - Option 1 - 2019-02-11 (3)
45.8_CoT EV TRAINING- ID copy track sheet final
45.9_EV Training - Delegate names
45.10_CoT EV TRAINING- ID copy track sheet
45.11_ID Combined- Driver's licence copies for Nomvula Maluleke and Phineas Malefahlo
45.12_ID Copy AK Mogosetsi
45.13_ID Copy Evan Brand
45.14_ID Copy Jack Maseri
45.15_ID Copy Kgomotso Kweneite
45.16_ID Copy Mandisa Nkosi
45.17_ID Copy Marnus Coetsee
45.18_ID copy Nditsheni Samuel Mutswari
45.19_ID Copy Nomvula Maluleka
45.20_ID Copy Seabata Mokoena
45.21_ID copy Themba Zwane
46_DoT 2018-2020 (folder)
46.1_41064_gon886raft green transport Strategy
46.2_DoT Minister_Travel request for Transport delegates to join EVS32 delegation
46.3_Government Gazette 41586 (NRTA)
46.4_GTS Presentation at EVS 32 feedback session
46.5_Minister Fikile Mbalula 2019-20 budget vote speech
46.6_Minister's invitation to GTS launch
46.7_National Cycling Strategy Proposal_final (1)
46.8_Terms of Reference- National Cycling Strategy
46.9_UNIDO database_GTS Launch invitees
46.10_Industry Comments on Draft Roads Transport Policy of SA - submitted 08.06.2018
46.11_EVs Charging REGULATIONS Meeting 2019-01-23 MIN Draft 1
46.12_Department of Transport October Month 2018_ AM Inputs
46.13_Draft Terms of Reference- National Cycling Strategy

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46.14_Formal invitation letter- site visit to SA's bicycle manufacturing plant
46.15_Freq_Bicycle_Commute
46.16_Invitation letter to Mr. Mohan_DoT- site visit to SA's bicycle manufacturing plant
46.17_Invitation letter to Mr. Mtshali_GDRT- site visit to SA's bicycle manufacturing plant
46.18_Travel Justification for Qhubeka bicycle manufacturing plant site visit
46.19_Checklist - OTM Planning Committee
46.20_Dialogues Proceedings
46.21_Dialogues programme
46.22_DpnsdC_WsAEuoS3
46.23_Draft Invitation to speakers
46.24_Draft programme and proposed speakers for dialogues
46.25_Draft programme and proposed speakers for dialogues_AM input
46.26_Draft programme and proposed speakers for dialogues_AM
46.27_Draft Programme - Dialogues v1.5
46.28_GTS.Gazette
46.29_meeting notes_11 Sep 2018 at DOT
46.30_Official GTS logo
46.31_Panel discussion questions 17 October 2018
46.32_Panel discussion questions
46.33_R Molotsoane Biography
46.34_Speaker profiles for panel discussion on 17 October
47_20160107 EcoMobility Exhibition Final Report
48_20161021 LCT SA Project Progress - PSC 24Oct16
49_ANNEX J_Budget_SA LCT
50_Draft IEA Evaluation 14dic20
51_Final Report Green Transport Study 22122016
52_GEF LCT-SA Project Workplan - 2016-2021__
53_Green Transportation dti Final Report- gaps in policy for Green transport
54_LCT PSC Members
55_Terms of Reference PSC_ February 2016
56_Agenda and Proceedings for the LCT Inception Workshop
57_Agenda LCT Inception Workshop
58_AWARD-2000-Report
59_dti chairperson
60_Inception Workshop Presentation pdf
61_Inception Workshop Presentation pptx
62_LCT Annual Workplan and performance v2
63_LCT Annual Workplan and performance
64_LCT Project in South Africa - Inception Workshop 16 March 2016
65_LCT Project Inception Report
66_LCT Project Inception Report v3
67_LCT Project Inception Report v2
68_LCT Project Inception Workshop Agenda
69_LCT Project Management
70_LCT Project Roadmap
71_LCT Project Roadmap v2
72_LCT Project Roadmap v3
73_LCT SA PMU TOR
74_nomination dti chairperson
75_nomination letter to dti
76_Terms of Reference PSC_ February 2016
77_Workshop Invitation
78_Workshop Invitation v2
79_UNIDO LEGACY PUBLICATION_PROOF 1
80_ANNEX E_Gender_Analysis_of_South_Africa
81_GEF_5_UNIDO_South_Africa_LCT_CEO_App_MSP_5737_Tracking_Tool
82_5737_2019_PIR_UNIDO_South Africa

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83_5737_PIR_FY20_Final (2)
84_EMG Discussion Paper
85_Pictures_Events.zip

## Annex 3: List of consulted stakeholders

- The online questionnaire was sent to a total of 150 stakeholders (already discounting those that bounced back or were undeliverable), covering a total of 50 organisations or institutions. The online questionnaire was responded by 31 people, of 19 organisations or institutions.
- A total of 20 people was interviewed.
- The following two tables below show the names and organisations interviewed and the organizations that have answered to the questionnaire.

### Interviewed People and Organizations

Stakeholders (Organisation and Name)	Position / Observations	
UNIDO (Implementing Agency)	Tareq Emtairah	Director of Energy Department
	Marie Blanche Ting	National Focal Point for LCT-SA, Energy and Low Carbon Coordinator
	Mandisa Nkosi	Project Administrative Assistant
	Gerswynn Mkuur	LCT-SA Project Manager
	Rana Ghoneim	Chief of Energy Systems & Infrastructure
	Ashanti Mogosetsi	Technical Project and Media Outreach Specialist
	Petronella de Wet	Senior Media, Gender and Outreach Specialist
	Conrad Kassier	Former-Energy and Climate Coordinator
	Juergen Hierold	GEF Coordinator and Unit Chief, Partnership and Results Monitoring Branch, Environment Partnerships Unit
SANEDI (Executing Agency)	Carel Snyman	Former National Project Director
	Tebogo Snyer	Project Manager for Cleaner Mobility
	Minnesh Bipath	Programme Manager - Cleaner mobility
The dtic	Gerhard Fourie	Chief Director Green Industries
DoT	Marleen Goudkamp	Deputy Director: Non-motorised Transport, Integration, Design Standards and Guidelines;
TIA (uYilo)	Hiten Parmar	Director, Electric mobility programme uYilo
IDC (Beneficiary)	Paulo da Silva	Building Management Specialist at Industrial Development Corporation of SA Ltd. (IDC)
City of Cape Town (Beneficiary)	Mary Haw	Manager: Energy Efficiency & Renewable Facilitation at City of Cape Town
	Nombuso Ngcombo	Sustainable Energy Markets at City of Cape Town
City of Tshwane (Beneficiary)	Kedibone Modiselle	Mitigation Programmes & Resource Mobilisation
Mobilized (consultant)	Lize de Beer	Transportation Planner

### Organizations that have answered to the online questionnaire

Name of the Organizations
UNIDO
IDC
SANEDI
DoT
the dtic
DEFF
uYilo programme (TIA)
City of Cape Town

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Western Cape Gov.
City of Tshwane
eThekweni / Durban
Gauteng
Bay of grace foundation
ShovEbike
SowetoRocks MTB Academy
Mobilized
Qhubeka Charity NPC
SEE Sustainability cc / Pedal Power Assoc.

## **Annex 4: Primary data collection instruments**



# GEF-UNIDO LCT-SA Project Evaluation

The project “Energy Efficient Low Carbon Transport Project in South Africa” (LCT-SA) is financed by the Global Environment Facility (GEF), executed by South Africa National Energy Development Institute (SANEDI), endorsed by South Africa Department of Trade, Industry and Competition (dtic), and implemented by UNIDO. The proposed project includes:

- Establishment of a coordination mechanism for e-mobility and Non-Motorised Transport (NMT);
  - Improvement of policy and regulatory frameworks for Electric Vehicles (EVs) use and local manufacturing and NMT;
  - Build capacity, raise awareness and foster stakeholder’s cooperation on EVs and NMT;
  - Implementation of NMT and EV infrastructure projects;
- And,
- Monitoring and Evaluation

The project aims to assist Government entities and industry partners to promote the widespread use of EVs and NMT, and the development of the necessary infrastructure, as part of the Green Transport and Green Cities initiatives of South Africa. The project is expected to have a long-term impact on income and job creation in South Africa as well as environmental benefits such as reduction in air and noise pollution, particularly in larger cities.

The project is amongst the first interventions to promote nation-wide use of EVs and NMT in an integrated manner, prioritising policy improvement, institutional capacity building, demonstration and awareness raising.

ITPEnergised has been contracted by UNIDO to carry out the Terminal Evaluation of the LCT-SA project. If you are being contacted, it is because you have been directly or indirectly involved in the development and implementation of the mentioned project. The estimated time to fill out this survey is less than 10 minutes. Thank you in advance for your answer.

\* Required

1. Name of the organisation: \*

2. Location: \*

3. What type of organisation are you working for? (please select only one of the categories below) \*

- International organisation
- Regional organisation
- National government
- Technical or Scientific Institution/University, Research Institute
- NGO/CSO
- Private company
- Independent
- 
- Other

4. Please insert your gender?

- Male
- Female
- Prefer not to say

5. What has been your organisation's role in the project?

- Executing Agency
- Executing Partner
- Beneficiary
- Participant/Stakeholder
- 
- Other

6. In your opinion, how well are you informed about the LCT-SA project and its activities? 1 star is "poorly informed" and 5 stars is "very well informed".



7. How did you learn about the LCT-SA project?

Social media / internet

Workshop / Conference

Word of mouth

Publication

Other

8. In your opinion, how relevant is the LCT-SA project for your organisation / South Africa? (please select only one of the categories below)

Very relevant

Relevant

Relatively relevant

Not relevant

9. How did the LCT-SA project contribute to your organisation and or to South Africa? \*

10. In your opinion, do you think that the project has contributed to foster the adoption of EVs and NMT in South Africa?

- Yes
- No
- Maybe

11. How? (Can you please provide a justification for you choice above)

12. Were you engaged in the activities of the project?

- Yes
- No

13. If yes, how would you rate them?

	Very Good	Good	Fair	Weak	Very Weak
Establishment of the coordination mechanisms for e-mobility and NMT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improvement of policy and regulatory framework for EV use and local manufacturing and NMT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Build capacity, raise awareness and foster stakeholder's cooperation on EVs and NMT (through workshops & events)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implementation of NMT and EV infrastructure projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Regarding the LCT-SA capacity building workshops, on-job training and information dissemination events, how would you rate them? (select only one option per event type)

	Very Good	Good	Weak	Very Weak	Have not participated
Capacity building workshop/on-job training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public awareness campaigns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conferences, information sharing & dissemination events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Publication of technical reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Do you think that the EV and NMT infrastructure projects implemented were visible enough and good examples to demonstrate the applicability of Low Carbon Transport modalities in South Africa?

- Yes
- No
- Maybe
- I was not aware of the demonstration projects

16. Do you think that the LCT-SA project has contributed directly or indirectly to gender equality?

- Yes
- No
- Maybe

17. How did it contribute (or not) to gender equity?

18. What were the most important lessons your organization has learned through the implementation of the LCT-SA project?

19. How many people in your organisation are using NMT and/or EV for transportation purposes?

- 0 people
- <2 people
- 2 - 5 people
- >5 people

20. If you are one of the project beneficiaries, and thus have a EV infrastructure project implemented, do you have records on the number of vehicles that are using the EV charging station per week on average ?

- 0
- < 5
- 5 - 10
- 10 - 20
- 20 - 40
- > 40
- Not a project beneficiary

21. In your opinion what were the most important accomplishments of the LCT-SA project in general?

22. Can you tell us if you have any other suggestions about where similar activities as the ones implemented by the LCT-SA project could be applied? Can you provide some details on that?

23. What would you suggest to improve if LCT-SA project would be replicated somewhere else?

24. Please add here any other comments you may have:





## **Annex 5: Statistical Analysis of Survey Data**



# GEF-UNIDO LCT-SA Project Evaluation

**31**  
Responses

**33:25**  
Average time to complete

**Active**  
Status

## 1. Name of the organisation:

**31**  
Responses

Latest Responses

"SEE Sustainability cc / Pedal Power Association"

"Qhubeka Charity NPC"

"Western Cape Government : Environmental Affairs and Development ..."

## 2. Location:

**31**  
Responses

Latest Responses

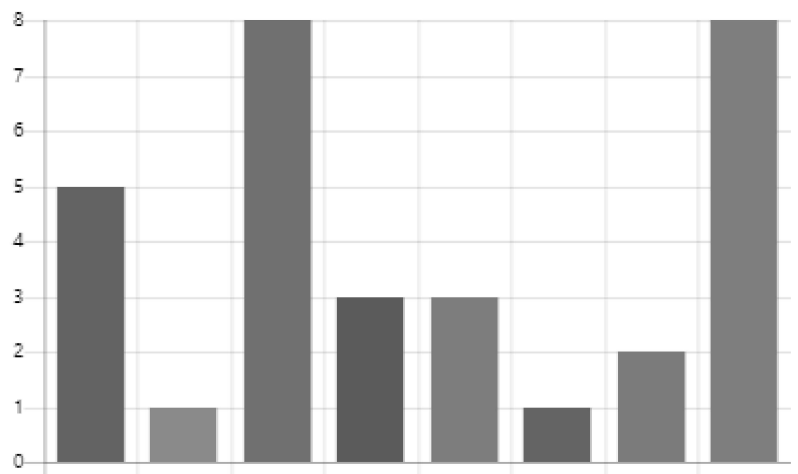
"Cape Town"

"Johannesburg South Africa"

"Cape Town, South Africa"

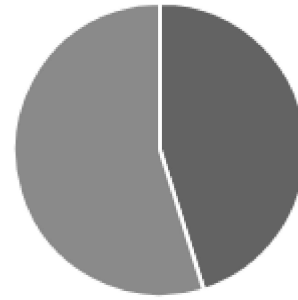
## 3. What type of organisation are you working for? (please select only one of the categories below)

- International organisation 5
- Regional organisation 1
- National government 8
- Technical or Scientific Instituti... 3
- NGO/CSO 3
- Private company 1
- Independent 2
- Other 8



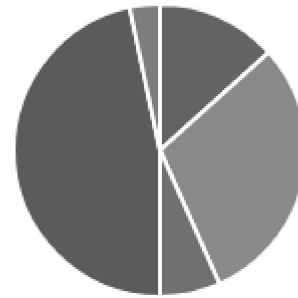
#### 4. Please insert your gender?

- Male 14
- Female 17
- Prefer not to say 0



#### 5. What has been your organisation's role in the project?

- Executing Agency 4
- Executing Partner 9
- Beneficiary 2
- Participant/Stakeholder 14
- Other 1



#### 6. In your opinion, how well are you informed about the LCT-SA project and its activities? 1 star is "poorly informed" and 5 stars is "very well informed".

💡 Insights

**31**  
Responses

★★★★☆  
3.94 Average Rating

#### 7. How did you learn about the LCT-SA project?

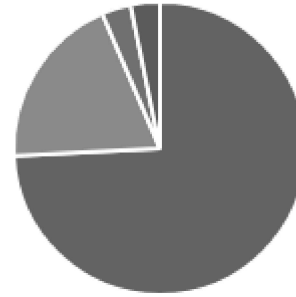
- Social media / internet 2
- Workshop / Conference 10
- Word of mouth 6
- Publication 1
- Other 12



8. In your opinion, how relevant is the LCT-SA project for your organisation / South Africa? (please select only one of the categories below)

💡 Insights

Very relevant	23
Relevant	6
Relatively relevant	1
Not relevant	1



9. How did the LCT-SA project contribute to your organisation and or to South Africa?

31  
Responses

Latest Responses

"we were part of a number of discussions and interactions - this is the ...

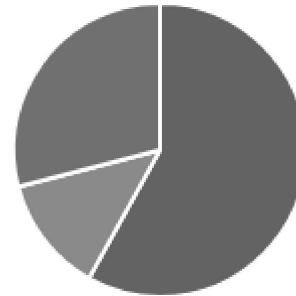
"The project was not executed"

"The project goals and objectives feed directly into the goals and objec...

10. In your opinion, do you think that the project has contributed to foster the adoption of EVs and NMT in South Africa?

💡 Insights

Yes	18
No	4
Maybe	9



11. How? (Can you please provide a justification for you choice above)

30  
Responses

Latest Responses

"Whilst there is significant awareness of EVs and their potential NMT r...

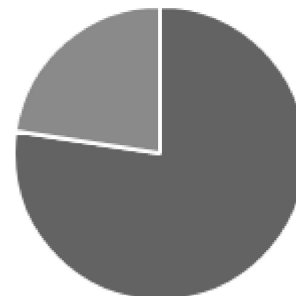
"The project was withdrawn"

"don't have enough hands-on experience with the project to give a co...

12. Were you engaged in the activities of the project?

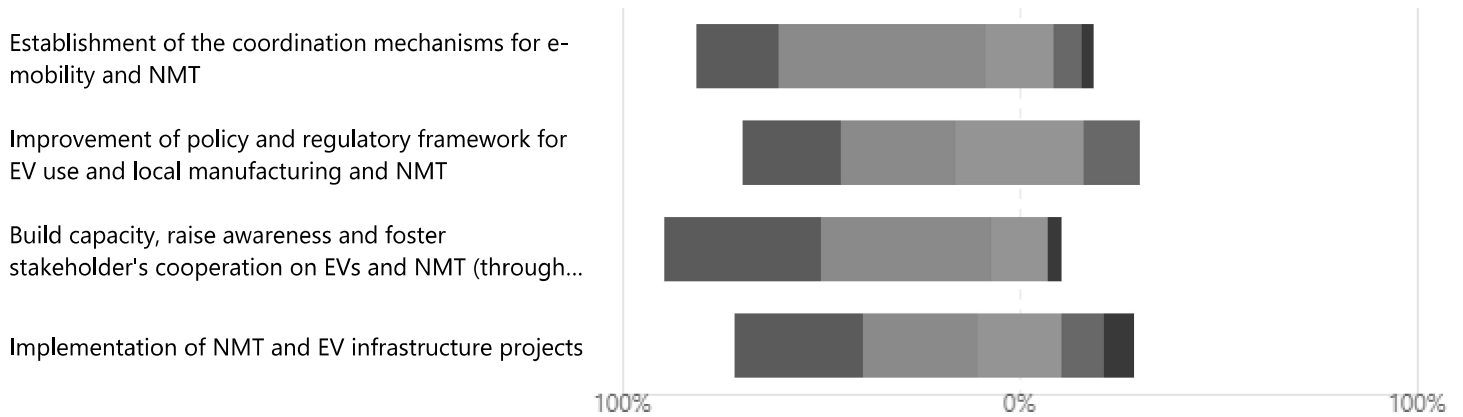
💡 Insights

Yes	24
No	7



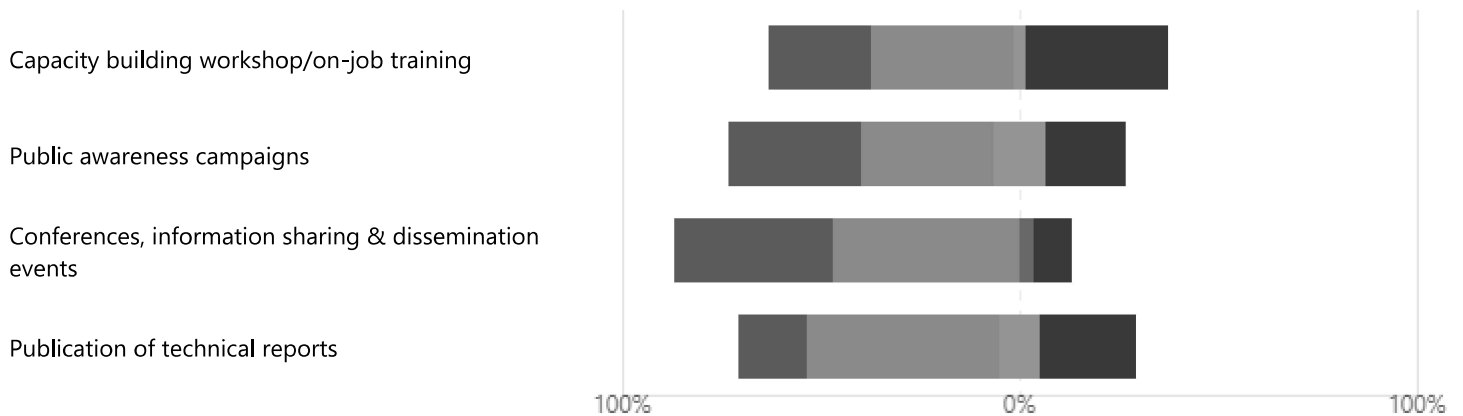
### 13. If yes, how would you rate them?

Very Good  
  Good  
  Fair  
  Weak  
  Very Weak



### 14. Regarding the LCT-SA capacity building workshops, on-job training and information dissemination events, how would you rate them? (select only one option per event type)

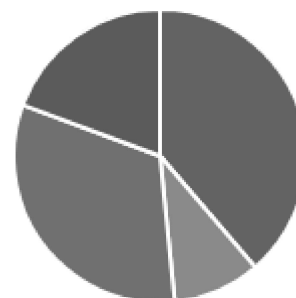
Very Good  
  Good  
  Weak  
  Very Weak  
  Have not participated



### 15. Do you think that the EV and NMT infrastructure projects implemented were visible enough and good examples to demonstrate the applicability of Low Carbon Transport modalities in South Africa?

- Yes 12
- No 3
- Maybe 10
- I was not aware of the demon... 6

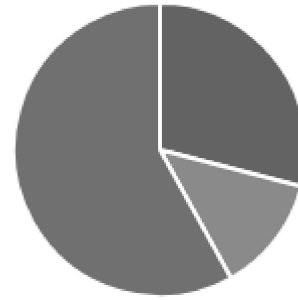
Insights



16. Do you think that the LCT-SA project has contributed directly or indirectly to gender equality?

💡 Insights

● Yes	9
● No	4
● Maybe	18



17. How did it contribute (or not) to gender equity?

26  
Responses

Latest Responses

"I was not directly involved in any of the projects and am not aware of..."

"I do not know"

"again, don't have enough specific information on the projects implem..."

18. What were the most important lessons your organization has learned through the implementation of the LCT-SA project?

28  
Responses

Latest Responses

"The need for relevant capacity in all levels of government, a far great..."

"Project was not implemented"

"don't have enough information on the projects to answer, but I am s..."

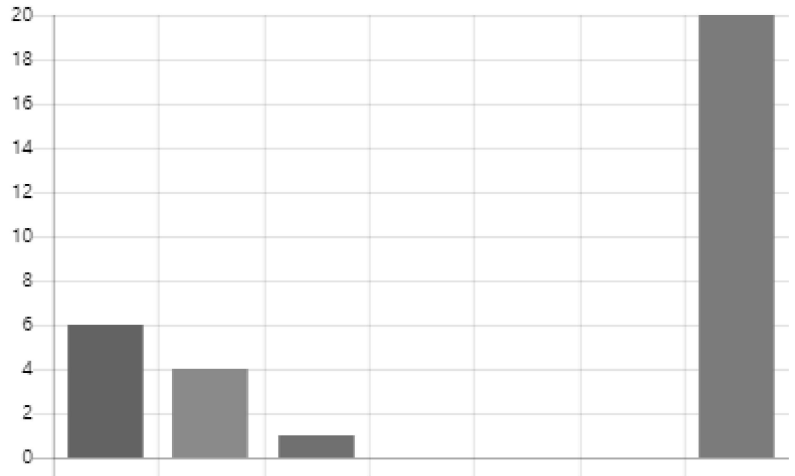
19. How many people in your organisation are using NMT and/or EV for transportation purposes?

● 0 people	4
● <2 people	10
● 2 - 5 people	7
● >5 people	10



20. If you are one of the project beneficiaries, and thus have a EV infrastructure project implemented, do you have records on the number of vehicles that are using the EV charging station per week on average ?

- 0 6
- < 5 4
- 5 - 10 1
- 10 - 20 0
- 20 - 40 0
- > 40 0
- Not a project beneficiary 20



21. In your opinion what were the most important accomplishments of the LCT-SA project in general?

29  
Responses

- Latest Responses
- "Increased awareness of EVs."
  - "Support for local manufacturing and implementation"
  - "unable to answer "

22. Can you tell us if you have any other suggestions about where similar activities as the ones implemented by the LCT-SA project could be applied? Can you provide some details on that?

26  
Responses

- Latest Responses
- "Until such time as SA has a clear strategy supporting and driving the ..."
  - "Involve NGO's earlier and to work out tactics to circumvent South Afri..."
  - "unable to answer, based on the amount of information / knowledge a..."

23. What would you suggest to improve if LCT-SA project would be replicated somewhere else?

26  
Responses

- Latest Responses
- "The departure point should be a national strategy and plan for a parti..."
  - "Focus on execution"
  - "unable to answer, based on the amount of information / knowledge a..."



24. Please add here any other comments you may have:

20  
Responses

Latest Responses

*"South Africa requires a serious rethink of its approach to transport an...*

*"Regrettably support for our local bicycle factory did not get the requir...*

## Annex 6: Details on project progress towards impacts

Table 5: Project outcomes /impacts, outputs, performance indicators and results

(Progress achieved: Not achieved (0-19%); Partially Achieved (20-49%); Moderately Achieved (50-64%); Mostly Achieved (65-89%); Fully Achieved (90-100%))

Strategic Outcomes / impacts	Indicators and Targets by end of project		Achievement until 31/03/2021 (estimated end of project)	Progress achieved / indicator
	Indicators	Targets		
<b>Project Objective</b>				
<b>Promotion of the widespread use of electric vehicles (EVs) and non-motorized transport (NMT), and the development of the necessary infrastructure, as part of the Green Transport and Green Cities initiatives of South Africa.</b>	A) Direct GHG emission savings: <ul style="list-style-type: none"> <li>EVs</li> <li>E-buses</li> <li>Changes in modal shifts from cars, minibus and bus to cycling (incl. e-bikes)</li> </ul>	A) Direct GHG emission reduction of: <ul style="list-style-type: none"> <li>2,753 tCO<sub>2</sub>/yr, due to EVs: 2000 of which 20 PV-charged; and E-buses: 10, of which 2 at PV-chargers;</li> <li>6,685 tCO<sub>2</sub>/yr, due to changes in modal shift in NMT projects in Johannesburg and eThekweni (Durban) of trips made in cars and minibus-taxi (2.5%) and bus (5%) to cycling (including use of 1000 trips/day on e-bikes);</li> <li>Total cumulative direct: 117,766 tCO<sub>2</sub></li> </ul>	<ul style="list-style-type: none"> <li>GHG emissions reductions were not monitored for the EV charging stations. As informed during the interviews, some PV charging stations beneficiaries have started to collect information from the stations, but the ET had no access to these data, and the PMU has not had access either.</li> <li>Since no NMT pilot projects were implemented, those GHG emissions reductions are not achieved.</li> <li>No projects on e-buses have been implemented either, therefore no GHG emissions reductions were generated from this.</li> </ul>	<b>N/A</b>  The PV charging stations are being used so there are some GHG emissions reductions. Since there are no records to confirm this fact and that show how many GHG emissions have been reduced, it is not possible to provide a percentage on its progress.
	B) Indirect bottom-up and top-down emission savings	Indirect emission reduction: <ul style="list-style-type: none"> <li>Bottom-up: 353 ktCO<sub>2</sub> (e-vehicles: 105 ktCO<sub>2</sub>; NMT/e-bikes: 248 ktCO<sub>2</sub>)</li> <li>Top-down: 1,079 ktCO<sub>2</sub> (e-vehicles: 301 ktCO<sub>2</sub>; NMT/e-bikes: 778 ktCO<sub>2</sub>)</li> </ul>		
<b>Component 1: Improvement of policy and regulatory frameworks for EV use and local manufacturing, and NMT; capacity of concerned institutions built, and awareness raised</b>				

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<p><b>Outcome 1.1</b>  <b>Enabling policy and regulatory framework, together with strengthened institutional capacity and enhanced awareness, facilitating early and widespread use and local manufacturing of EVs and NMT in South Africa</b></p>	<p>C) Number of policy papers on low-carbon transportation approved by the Government.</p>	<p>C) At least 2 policy documents, approved by the Government</p>	<p>1. <b>Green Transport Strategy for South Africa: (2018-2050)</b> issued by the Department of Transport in 2018 and available online<sup>14</sup> (document #02) – Makes reference to EV and NMT (not extensively), apart from a broader approach to all that composes transport e.g. air, rail, maritime, etc.</p> <p>2. <b>“Unity in Sustainable Mobility: Roadmap towards building a unified Electro Mobility Industry in South Africa”</b> (Jan 2017) published by EVIA (doc #15)</p> <p>3. Although not finalised, a <b>draft Proposal for a National Cycling Strategy</b> development was done (Doc # 46.7). The document identifies key parties and stakeholders to be involved, suggested actions and steps, estimated timeline, etc. There were delays in the DoT and unfortunately the National Cycling Strategy was not commissioned (draft terms of reference were even developed, Doc #46.8).</p>	<p><b>Achieved 90%</b>          (because the GTS is the only one officially approved by the Government, but extremely relevant for the transport sector and the transition to a low carbon economy)</p>
	<p>D) Coordination mechanisms for the promotion of e-mobility and NMT</p>	<p>D) Coordination mechanisms (2) established and functioning.</p>	<ul style="list-style-type: none"> <li>• SANEDI is the lead executing agency of the proposed project and a PMU was established as the coordination mechanisms for the implementation and executions of this project. This will continue after project finished.</li> </ul>	
<p><b>Output 1.1.1</b>          National policy and regulatory framework, incentive programmes, tax incentives, design, planning, and safety guidelines, etc. to promote early take-off, widespread use, and local manufacturing of EVs and NMT strengthened;</p>	<p>1) Number of policy reviews/development (number that includes gender dimensions).</p>	<p>1) At least two study reports prepared on potential for local manufacturing of game reserves EVs and of NMT-bicycles with recommendation on policy, incentives and support programmes (both studies) should consider gender dimensions);</p>	<p>Local manufacturing of game reserves EVs is not addressed in the studies. However, there are other studies relevant for the EVs topic that were done:</p> <ul style="list-style-type: none"> <li>• <b>EVs: “Unity in Sustainable Mobility: Roadmap towards building a unified Electro Mobility Industry in South Africa”.</b> This document explores the history of EVs, their benefits and positive impacts on GHG emissions, business models, the topics where legislation should focus on, Government actors involved in the e-Mobility space, infrastructure and technologies related to EV charging and energy supply, and also captures success stories and local project examples that create awareness about the topic.</li> </ul> <p>The document does not explicitly focus on gender topics.</p> <ul style="list-style-type: none"> <li>• <b>EVs:</b> Study on macroeconomic impact on EV adoption in South Africa disseminated through UNIDO LCT-SA policy brief workshop in Q2 of 2019 (target achievement referred to in doc #82 – PIR 2019). Document #03 - <b>“Exploring the Policy Impacts of a Transition to Electric Vehicles in South Africa”</b> (May 2019). Gender mentioned in page 18 on the percentage of women that owns a vehicle.</li> </ul> <p>They address the possible options that a just EV transition should consider where you could assume gender is an integral part of since they mention vulnerability assessments, labor market, etc. but no specific points on gender are made. No specific</p>	<p><b>Mostly achieved (85%)</b>          because local manufacturing of game reserves EVs is not addressed and gender dimension is only addressed in some of the studies, not all.</p>

<sup>14</sup> [https://www.transport.gov.za/documents/11623/89294/Green\\_Transport\\_Strategy\\_2018\\_2050\\_onlineversion.pdf/71e19f1d-259e-4c55-9b27-30db418f105a](https://www.transport.gov.za/documents/11623/89294/Green_Transport_Strategy_2018_2050_onlineversion.pdf/71e19f1d-259e-4c55-9b27-30db418f105a)

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			<p>reference to game reserves, but this is also understandable since in the Inception Report it is stated that “Vehicles refer to EVs, NMT and EcoMobility transport modes, excludes game reserve EVs. UNIDO management has decided to exclude game reserve EVs as a focus of this project. The inclusion of EcoMobility vehicles in this category is attributable to the ongoing work of the DoT to expand the definition of NMT to include EcoMobility products” (page 3 of Inception Report).</p> <ul style="list-style-type: none"> <li>• <b>EVs:</b> In Q4 of 2019 the dtic commissioned a follow up study to the policy brief on Macroeconomic Impacts of EV Adoption in South Africa (previous bullet point). The study aims to explore existing and possible opportunities for manufacturing processed materials for battery manufacturing in South Africa and to determine the country’s manufacturing capabilities for complete batteries locally. Doc #04 “<b>Opportunities to Develop the Lithium-Ion Battery Value Chain in South Africa</b>” (issued Jan 2020).</li> </ul> <p>No mention is made to gender or women equality in the document.</p> <ul style="list-style-type: none"> <li>• <b>NMT:</b> Study done by Mobilized (transportation planning and traffic engineering consultancy) on the development of a Business and Financial Model for a scheme that will increase access to bicycles through the provision of free or very affordable bicycles. Focused on the University Corridor in the City of Johannesburg (Doc #16 <i>FinalReport_Joha_Cycle project</i>), done in 2017.</li> </ul> <p>The study includes the gender and age perspective in the analysis of different types or brands of bicycles use.</p> <ul style="list-style-type: none"> <li>• <b>NMT:</b> The study commissioned to Kite Capital (Doc #44.6) “Business Model for the University Corridor” issued in April 2019 builds on the study done by Mobilized and deepens the aspects that the rideshare scheme should consider (customer segments, value proposition, channels of communication, key resources, activities, partnerships, costs structure, revenue streams).</li> </ul> <p>No specific mention to gender issues is made in this document.</p>	
<p><b>Output 1.1.2</b> Concerned institutional capacity at the national level</p>	<p>2) Awareness raising materials developed 3) Number of workshops and seminars organized (percentage of</p>	<p>2) Awareness raising materials available on EV and NMT 3) At least 5 workshops and seminars organized</p>	<ul style="list-style-type: none"> <li>• <b>Awareness Materials:</b> <ul style="list-style-type: none"> <li>- EGM Discussion Paper (Doc #84 “Best Practices in Electric Mobility”) was disseminated during the 2-day EGM event in Vienna in 2019</li> <li>- In the project website<sup>15</sup> there is a “News” section with 7 (seven) powerpoint presentations with topics addressing sustainable transport and EVs.</li> </ul> </li> </ul>	<p><b>Achieved 95%</b> (due to missing evidence on gender participation records, see</p>

<sup>15</sup> Available online: [Presentations - Low Carbon Transport \[lctsa.co.za\]](http://lctsa.co.za/Presentations-Low-Carbon-Transport)

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<p>built, and awareness raised.</p>	<p>female/male participants (disaggregated by age))  4) % of counterparts taking part in the development of policy papers report having benefitted from built capacity and raised awareness;</p>	<p>(at least 20% female participants).  4) At least 70% of counterparts taking part in the development of policy papers report having benefitted from built capacity;</p>	<ul style="list-style-type: none"> <li>- EVIA Brochure (doc #15) Unity in Sustainable Mobility: Roadmap towards building a unified Electro Mobility Industry in South Africa, issued in 2018 (available online<sup>16</sup>).</li> <li>- Knowledge Management and Publicity Materials include the project website, YouTube videos<sup>17</sup>, project brochures to promote the project at stakeholder engagement events and exhibitions, Facebook account (works but last update done on 2017, when created), Twitter account (works and is in use), Instagram profile (works), two radio interviews to Carel Snyman on radio stations with the targeted listenership (links to interviews in Doc #17), and several print media publications and articles, as well as a Banner on the project used in events.</li> <li>- The UNIDO Legacy ebook</li> <li>- Other materials</li> <li>• <b>Workshops / seminars conducted<sup>18</sup>:</b> The project conducted and participated in more than 40 workshops throughout its period of execution.</li> <li>• Doc #82 (PIR FY2018/19) states “Workshops are hosted for Institutional Capacity Building in Government organisations with low carbon transport policy development mandate. Target of 70% policy developers achieved.” Evidence for this was not found but the ET could see that there is a positive impact on the capacity of stakeholders participating in the Workshops, confirmed by the interviews and by the online questionnaire.</li> <li>• Gender participation in workshops is only referred to in PIR FY2020, page 15, where the number of female and male speakers is included, representing a total of 55% women participation as speakers for that FY. It also refers that 20 youth members from universities participated (i.e. indication of age). Although it has been informed to the ET that over 50% female participants was witnessed in the workshops and events, and that the PMU always maintained a gender balanced panel of speakers for the events, the ET could not have access to records where this information is tracked and monitored through the project implementation period.</li> </ul>	<p>previous column)</p>
<p><b>Component 2: Promotion of non-motorized and public transport in the Cities of Johannesburg and eThekweni Municipality, and development and demonstration of the supporting infrastructure for EVs.</b></p>				

<sup>16</sup> Available online: <https://www.evia.org.za/2018EVIACONFERENCEPUBLICATION.PDF>

<sup>17</sup>2016 UNIDO Low Carbon 4 min Snit video: <https://www.youtube.com/watch?v=F-DjPaHLanw>

<sup>18</sup>Several pictures capturing some of the events listed here can be found in the Gallery tab of the project website: <https://www.lctsa.co.za/gallery/>

<p><b>Outcome 2.1</b>  <b>Improved non-motorized and public transport result in a reduction of GHG emissions in the transport sectors of the City of Johannesburg and eThekweni Municipality; adequate infrastructure facilitates widespread utilization of EVs powered by renewable energy</b></p>	<p>E) Number of NMT infrastructure projects implemented in the City of Johannesburg and eThekweni Municipality</p>	<p>E) At least 3 NMT projects implemented in City of Johannesburg and eThekweni Municipality</p>	<ul style="list-style-type: none"> <li>• <b>No pilot projects involving infrastructure have been deployed by the LCT-SA.</b></li> </ul> <p><b>Only two studies were done.</b> In the city of Johannesburg there were two research studies commissioned by LCT-SA on NMT (cycling) for the University Corridor. A specialist transportation planning and traffic engineering services company (<b>Mobilized, Doc #16</b>) was tasked with creating a business and financial model for a scheme that will increase access to bicycles by providing free or very affordable bicycles for use in the University Corridor. This corridor links the university campuses – the University of Johannesburg’s Kingsway, Bunting and Doornfontein campuses; and the University of Witwatersrand’s Braamfontein and Ellis Park campuses. The University Corridor connects with southern Africa’s largest transport hub, Park Station. Following the Mobilized study, LCT-SA appointed Kite Capital, a digital innovation company, to build the case for a bike share scheme pilot project on the University Corridor. The work included the assessment of the viability of business proposal submissions presented to the LCT-SA team. Kite Capital developed a business model (<b>Kite Capital, Doc #44.6</b>) that defines a clear bike-sharing vision for the city, as well as an organisational structure, asset ownership, contracting structure, recommendation of a marketing strategy and a financial plan to potential bike rideshare system operators, and an implementation plan that recommends a suitable operating model.</p> <p>In the City of Johannesburg, the change in the Mayoral head has led to a change in priorities in the NMT space and no funding was available to further promote NMT. (Source: Doc #18 on project risks and interviews to current and former PMs). No NMT project was conducted in the City of <b>Durban</b> due to changes in personnel and priorities of the Municipality.</p>	<p><b>0%</b>  <b>Not achieved</b></p>
	<p>F) Number of PV charging stations installed and operated</p>	<p>F) At least 2 PV-based, off-line and fast-charging stations designed, installed and operated serving demonstration and testing purposes.</p>	<ul style="list-style-type: none"> <li>• <b>A total of 8 (eight) PV charging stations were deployed.</b> They include 8 installations in different places (see details of the stations below in indicator #10). The city of Tshwane station has faced technical issues, but it being resolved at the time of this report and will be operative soon. The rest are operative at the time this evaluation was conducted. The first station that was installed (the IDC one) is not working properly and the users are not using it.</li> </ul>	<p><b>100% achieved</b>                  (and surpassed)</p>
	<p>G) Percentage of policies/ regulations to promote NMT and public transport that have specific recommendations or specifications for women.</p>	<p>G) 50% of developed policies/ regulations to promote NMT and public transport have specific recommendations or specifications for women.</p>	<ul style="list-style-type: none"> <li>• <b>Green Transport Strategy for South Africa: (2018-2050).</b> Does mention that the GTS (national level) must relate to local initiatives at Municipal level to ensure mutual reinforcement. The roles of provinces and municipalities is critical for the implementation of the GTS at local level. This is in line with the Sustainable Urban Agenda that has 8 principal aims. One of those aims is to promote “<i>access for all to safe, age- and gender-responsive, affordable, accessible and sustainable urban mobility and land and sea transport systems...</i>”. This is the only place in the document where gender is mentioned (page 27 of the GTS). <b>There is no specific chapter or section that addressed the needs of women or provides a deeper gender perspective in relation to transport needs and challenges.</b></li> </ul>	<p><b>10% Not achieved</b>                  (the GTS partially mentions gender, it does not provide any recommendation or specification on gender)</p>

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			<ul style="list-style-type: none"> <li>The roadmap released by EVIA: “Unity in Sustainable Mobility: Roadmap towards building a unified Electro Mobility Industry in South Africa” (Jan 2017) (doc #15) does not provide any specific recommendations for women or gender-related specifications.</li> </ul>	
<p><b>Output 2.1.1</b></p> <p>Policy and regulatory frameworks to promote NMT and public transport in the City of Johannesburg and eThekweni Municipality enhanced;</p>	5) Review of existing policies, regulations, and support programmes	5) Two studies on EVs and on NMT, reviewing existing policies, regulations, and support programmes with suggestions for necessary strategies, roadmaps, incentive schemes. The proposed studies will incorporate the study on EcoMobility vehicles as sustainable means of transportation for cities.	<ul style="list-style-type: none"> <li><b>NMT Reports:</b> The previously mentioned reports conducted by Mobilized and by Kite Capital.</li> <li><b>EVs:</b> Document #03 - “Exploring the Policy Impacts of a Transition to Electric Vehicles in South Africa” (May 2019), and the batteries and mineral beneficiation document (January 2021)</li> </ul>	<b>100% Achieved</b>
<p><b>Output 2.1.2</b></p> <p>Institutional capacity for the City of Johannesburg and eThekweni Municipality strengthened and awareness raised on NMT; experience shared with the other 9 cities of South Africa under the DEA/KfW Green Cities Promoting NMT programme.</p>	6) Number of capacity building workshops and seminars organized (% of female/male participants (disaggregated by age))	6) At least 5 workshops and seminars organized (20% female participants)	<ul style="list-style-type: none"> <li>More than 5 capacity building workshops and seminars were organised by the project. As stated previously, there are no records on women participation in the project activities, only the statements by the PMU that female participation surpassed the 20% target.</li> </ul>	<b>95% Achieved</b> (due to missing evidence on gender participation records)
	7) Number of NMT projects implemented in Cities of Durban and Johannesburg with project support	7) At least 3 projects implemented on NMT (in Johannesburg and eThekweni)	<ul style="list-style-type: none"> <li>NMT Pilot projects were not implemented due to changes in the cities’ priorities, as previously explained.</li> </ul>	<b>0% Not achieved</b>
	8) Number of workshops organized for regional cooperation amongst South African cities (% of female/male participants (disaggregated by age)).	8) At least 2 workshops organized for regional cooperation amongst South African cities (20% female participants).	<ul style="list-style-type: none"> <li>Doc #82 states that “national workshops organised include scope for regional cooperation amongst South African Cities.”</li> <li>Doc #08 states that <b>3 events</b> took place during the period July 2019-February 2020: i) EcoMobility World Congress attended with City of Tshwane delegates, ii) Local municipality representatives included in capacity building workshops on the national level, iii) 18 public sector officials sponsored to undergo the UNITAR 12 week online course on Sustainable Urban Mobility in Developing countries.</li> </ul> <p>No details were provided in terms of female participation in these workshops, or disaggregation by age.</p>	<b>95% achieved</b> (due to missing evidence on female participation records)
<p><b>Output 2.1.3</b></p> <p>Standards and regulations for EV</p>	9) Number of enhanced standards and regulations for EV	9) A minimum of 4 enhanced standards and	<ul style="list-style-type: none"> <li>Doc #82 states that South African standards not developed but international standards were adopted, including: <ul style="list-style-type: none"> <li>IEC 61851 in its entirety</li> </ul> </li> </ul>	<b>N/A</b> <b>Not evaluated because the</b>

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<p>infrastructure, charging stations, networks, support applications, etc. developed.</p>	<p>infrastructure developed;</p>	<p>regulations for EV infrastructure developed.</p>	<ul style="list-style-type: none"> <li>○ IEC 62196 in its entirety and specifically Parts 1, 2, 21-24.</li> <li>• Doc #83 states that no additional standards and regulations have been developed by the project and that in Q1 of 2020 the Department of Transport has shared with UNIDO that the legislating of standards is one of the activities that will be initiated by the Department through the National Regulator for Compulsory Specifications (NRCS). This activity is best implemented directly by national government since it will run beyond the project life of the LCT-SA.</li> </ul>	<p><b>indicator does not correspond to what the LCT-SA was in fact allowed to do</b></p>
<p><b>Output 2.1.4</b> Design, installation and testing of at least 2 PV-based (fast, off-line) charging stations for EVs in the City of Johannesburg and in the Shamwari Game Reserve.</p>	<p>10) Number of PV charging stations installed and operated</p>	<p>10) At least 2 PV-based, off-line and fast charging stations designed, installed and operated serving demonstration and testing purposes.</p>	<p><i>(same as indicator F, outcome level)</i></p> <p>Several PV charging stations were deployed. They include 8 projects in different places. Except 2, which were being fixed at the time this FSE took place, all the stations are operative. <i>Doc #82 states that the charging stations are “slow charging infrastructure based on custodian’s capacity to operate and maintain the infrastructure”.</i> The 8 PV charging stations are located in:</p> <ol style="list-style-type: none"> <li>1. EV Charging Station at IDC, Sandton, near Johannesburg</li> <li>2. EV Charging Station at City of Tshwane offices, Mayoral Office in Lyttleton, Centurion Municipality</li> <li>3. EV Charging Station at Metro Police in Bosman Street, Pretoria</li> <li>4. Two (2) UNIDO-sponsored electric vehicle charging bays were launched at the municipal headquarters of the City of Tshwane (Pretoria)</li> <li>5. Solar powered charging station in Bellville, Cape Town</li> <li>6. Solar powered charging station in Somerset West, Cape Town</li> <li>7. Shamwari Game Reserve charging station for EVs</li> </ol> <p>Three (3) of the eight (8) stations are grid-tied so they can inject surplus energy to the grid.</p> <p>Stations #5 and #6 suffered delays due to the COVID-19 pandemic which affected global procurement and local construction (stated in Doc #83)</p>	<p><b>100% achieved</b> (and surpassed)</p>
	<p>11) Percentage of ESIA's, if required, that include gender dimension</p>	<p>11) 100% of ESIA's, if required, include gender dimension</p>	<p>No ESIA's are required to install PV-charging stations.</p>	<p><b>N/A</b> <b>Not evaluated because ESIA's were not required</b></p>