



KWAZULU-NATAL PROVINCE

ECONOMIC DEVELOPMENT, TOURISM
AND ENVIRONMENTAL AFFAIRS
REPUBLIC OF SOUTH AFRICA

**GRID CONNECTED SOLAR PHOTOVOLTAIC (PV) MUNICIPAL OFFICE
LIGHTING IN ILEMBE DISTRICT MUNICIPALITY – KWAZULU-NATAL,
SOUTH AFRICA**



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Definitions of Acronyms/Glossary

CTCN	Climate Technological Centre and Network
EDTEA	Economic Development, Tourism and Environmental Affairs
GHG	Greenhouse gas emissions
KZN	KwaZulu-Natal
PMT	Project Management Team
PGHGEIR	Provincial Greenhouse Gas Emissions Inventory Report
TNA	Technological Needs Assessment
TORs	Terms of Reference
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
NDCs	Nationally Determined Contributions



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1. Background

South Africa has an objective to diversify its energy mix, which is currently dominated by coal and (predominantly) imported transport fuels. The KwaZulu-Natal (KZN) Province is expected to contribute to the low carbon economy as committed by the country through the Nationally Determined Contributions (NDCs) under the United Nations Framework Convention on Climate Change (UNFCCC). Energy is one of the key drivers of the economy as well as basic livelihoods; and the provincial GHG inventory has identified energy as a leading sector where fuel combustion contributes more to the province's GHG emission profile.

South Africa ratified the United Nations Framework Convention on Climate Change (UNFCCC) in August 1997. Article 4.5 of UNFCCC identifies technology transfer as a key mechanism for addressing climate change, and requires developed countries to support technology development and utilization in the developing countries. In order to operationalize Article 4.5, parties agreed to introduce a mechanism known as Technological Needs Assessment (TNA), which is housed within the United Nation Environmental Programme (UNEP), under the Climate Technological Centre and Network (CTCN) programme.

In 2014 the iLembe District held its second District Climate Change Conference, which recommended the move towards a low carbon economy. One of the resolutions of the 2014 Climate Change Summit was to consider undertaking the TNA in order to understand technologies that are already in existence within the District and also to prioritise technologies required to move the region towards a low carbon society. The TNA Report, produced in 2016, has prioritised the Renewable energy: Solar PV as one of the most critical Technology to form part of the mitigation programme. Therefore, as part of the move towards the low carbon economy, the proposed project aims to install a 36-kilowatt Solar Backup System to provide electricity for lighting and charging of equipment such as laptops and computers at the Office Building in Maphumulo Local Municipality within iLembe District.

2. Objectives and expected outcomes

The specific objectives of the project are:

- To install the Solar PV Panel technology in the Maphumulo Municipal Offices;
- To grow the Green Economy Sector, especially in the Solar PV market within the iLembe District, and the KwaZulu Natal Province in general.



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- To promote a lifestyle that encourages the low economy society within the Maphumulo Local Municipality specifically and the iLembe District in general.
- To reduce the reliance of Maphumulo Local Municipality on the National Grid for office lighting.

3. Key outputs

The key outputs that are envisaged for the proposed project are:

OUTPUT 1: Undertake an assessment of the building

The iLembe District Municipality, with support from suitably qualified and skilled service providers, has undertaken a building assessment, to assist the Maphumulo Local Municipality in determining the relevance of the project needs and desirability as well as consider issues of has further assisted in the definition of the project objectives and scope, clarification of benefits, analysis of the technical feasibility and compliance requirements, assessment of required resources (human, financial, etc), evaluation of potential risks, and setting of timeframes for project implementation.

OUTPUT 2: Conduct a trend analysis of recent electricity consumption in building

The appointed services provider will have to assess the energy usage within the building for a period of past 12 months. This data is critical in understanding the impact of the project. The Maphumulo Local Municipality will provide such information.

OUTPUT 3: Stakeholder engagement

Identification and engagement of critical stakeholders is crucial to ensure buy in and participation of key parties. Stakeholders that have been identified as key for this project are iLembe District and Maphumulo Local Municipalities, Department of Economic Development, Tourism and Environmental Affairs (EDTEA), and the Renewable Energy component of the Department of Energy.

OUTPUT 4: Project implementation

The appointed service provider will undertake technical work for project implementation. The technical details to be included are:

- a) Selection of the position for the installation of the Solar PV Panels, to be guided by the building assessment report, ensuring that the panels are positioned such that they are exposed to a constant supply of sunrays.



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- b) Installation of the Solar PV panels onto the rooftop of the Municipal buildings and connection of the inverter.
- c) Testing of the functionality of solar panels after installation.

Utilization of local youth possessing skills (e.g. construction and plumbing) from vocational training will be prioritized where semi-skilled workers are required. In the absence of such skill sets, community members, especially youth, will be upskilled so that they are able to maintain and deal with the faults that may arise during the project's operational phase. This will help with the development of skills at a local level and will also create jobs.

OUTPUT 5: Preparation of Operational and Maintenance Manual

The Operational guiding manuals / procedures will be developed for the operation and maintenance of the installed solar PV technology. This Operational guiding manual will include information on how the technology is used and maintained, and as such it will be simple, user-friendly and easy to follow.

OUTPUT 6: Preparation of the Closeout Report and presentation

A workshop will be convened for the service provider to hand over the project close-out report to EDTEA and iLembe District together with the completed deliverables, including training certificates to the youth trainees. The report must have details of all operations, maintenance and ongoing support, together with advice on any outstanding actions/issues and ongoing risks. The service provider will be expected to conduct a training session on the manual during this workshop and produce evidence in the form of training registers and certificates of attendance

4. Progress and expenditure

The project was granted an amount of \$25 000.00, which has not incurred any expenditure as no work has not commenced. The receipt of funds had to follow national and provincial protocols, which often take time. The KwaZulu-Natal Provincial Treasury (KZN-PT) only received funds of R225 391.25 on the 19th of June 2024, leaving the department with only less than 2 months to undertake procurement and implementation. The the Quotation Specification Committee (QSC) process is now on, and the advertisement period will be less than 25 days.

The specific project deliverable will be the (i) installed and functional Solar PV Technology in the Municipal Office Building of Maphumulo Local Municipality, and (ii) operation guiding manuals/procedures that will be used for operating and maintaining the technology.



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Despite the delays that the project is experiencing, the actual implementation of the project in the ground will take less than a month as soon as the supply chain processes are concluded and the service provider has gathered all the materials required for the project implementation.

The anticipated date of final project delivery is 01 December 2024.

5. Acknowledgements

The KZN Department of Economic Development, Tourism and Environmental Affairs (EDTEA) and iLembe District Municipality acknowledge and appreciate the selection of the 'Grid connected solar PV municipal office lighting' project by the Climate Group to receive international financial support (US\$25,000,00) from the Climate Group Future Fund. The funds provide the much-needed support that will help improve KZN's efforts to mitigate the impacts of climate change.

6. Conclusion

The iLembe District project activities will support both the provincial and national climate change strategies that highlight that mitigation and development objectives must prioritize a shift from an energy intensive economy. This work also puts iLembe District ahead of others in light of the National Climate Change Act that has just been enacted and carries clear responsibilities for provinces and districts. With the energy sector having been identified as the main contributor to the KZN GHG emissions profile, this project will assist the Province in achieving its mitigation goals.

7. Annexures

Annexure A: KZN EDTEA's Acting Head of Department approval for appointment of an external service provider for the project.

ENDORSED AND SUBMITTED BY: MS NOLOYISO WALINGO

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