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Enkoveneni Solar Home System Project: Scope of Work

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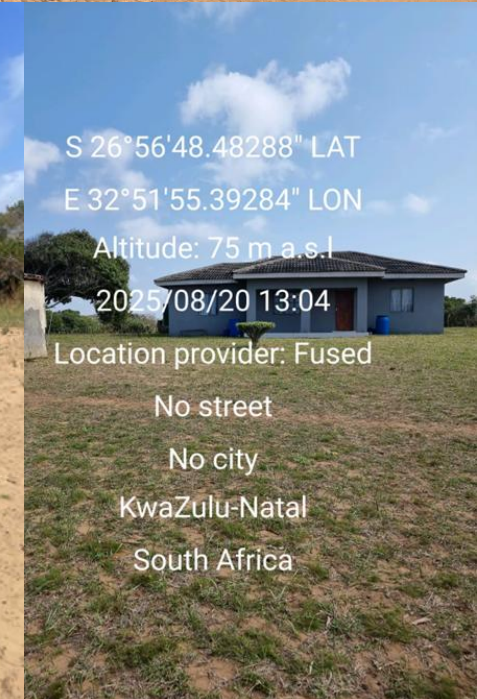
BACKGROUND

- Enkovukeni Village is an islanded community located in Northern KwaZulu-Natal which is home to 54 families located just a few kilometers south of the Mozambican border.
- The area is unelectrified, with only the primary school and a technology hub having limited solar power, which serve as vital resources for the local residents.
- Enkovukeni Village is situated within the iSimangaliso Wetland Park, a designated World Heritage Site.
- The area is environmentally sensitive, has protected areas and any engineering or infrastructure development within the village must comply with a rigorous environmental approval process.



Type of dwellings in the village

- The village features a mix of 27 brick, 15 reed, 5 mud, 4 cottages, plank, container, old brick houses and cottages. Residential yards have space with few housed shaded by trees, and the soil composition is predominantly sea sand, characteristic of coastal dune systems.
- Enkovukeni is surrounded by undisturbed forest, contributing to its ecological sensitivity and reinforcing the need for environmentally conscious development.

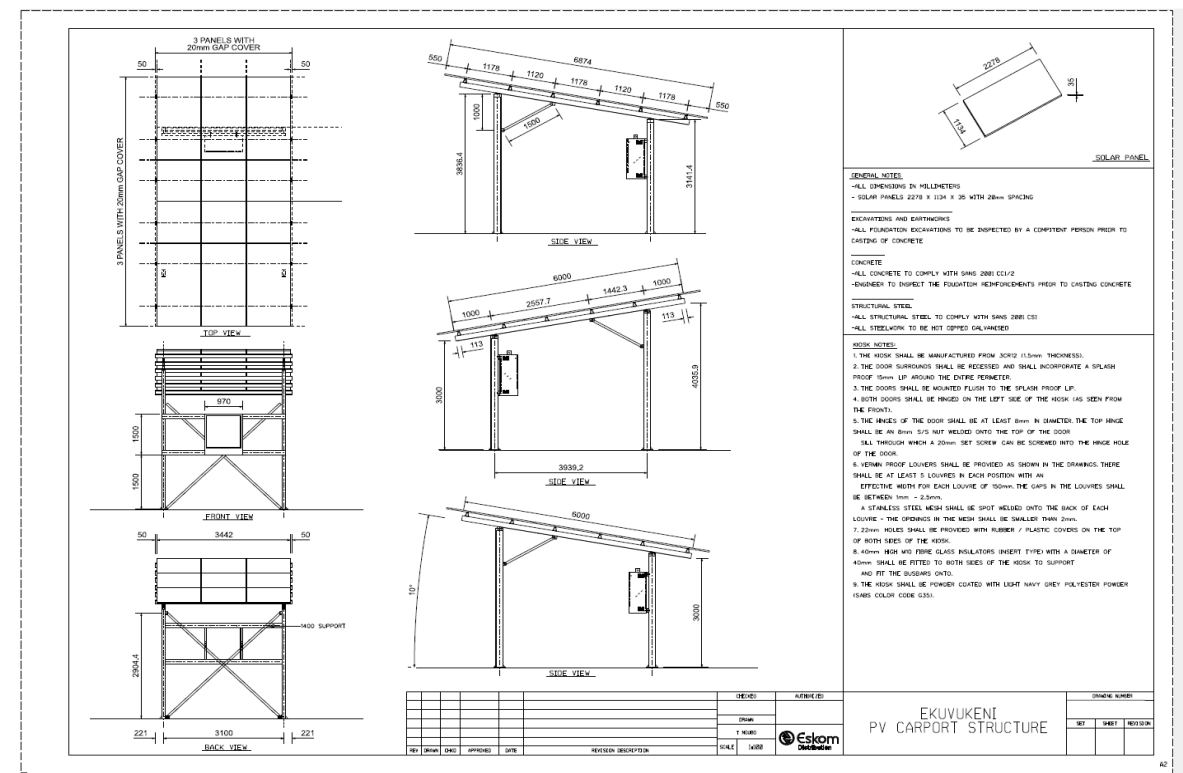
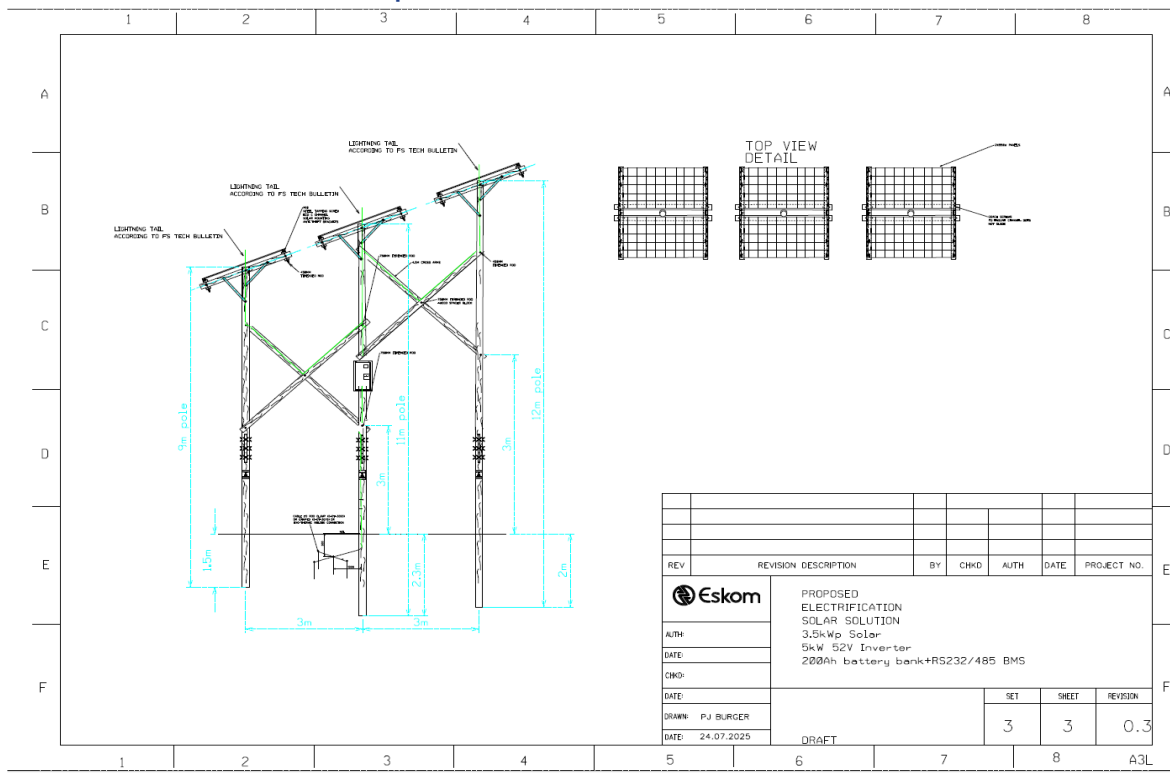


- The solution shall be designed to supply power each of the 54 households at eNkovukeni Village within an island located in Northern KwaZulu Natal. The expected output of the solar PV is 5kW.
- The scope shall consist of but not limited to:
 - Design, manufacture and install a standalone carport structure using either galvanized steel or treated wooden poles, engineered to support the weight of solar panels, as well as accommodate the inverter and battery enclosure. The design must ensure that the maximum possible PV capacity is installed per household.
 - Install solar panels with a total output of up to 5kW, including a matching inverter and battery system.
 - Provide a secure kiosk to house inverters, batteries, and other electrical components that can be mounted on the solar PV support structure.
 - Install LV pole-top box, cabling, and smart metering as per Eskom standards.
 - Recommended meter: BS Footprint Single Phase Smart Split Meter with CIU and External GSM Modem per household.

Proposed Solar Panel Structure: Idea

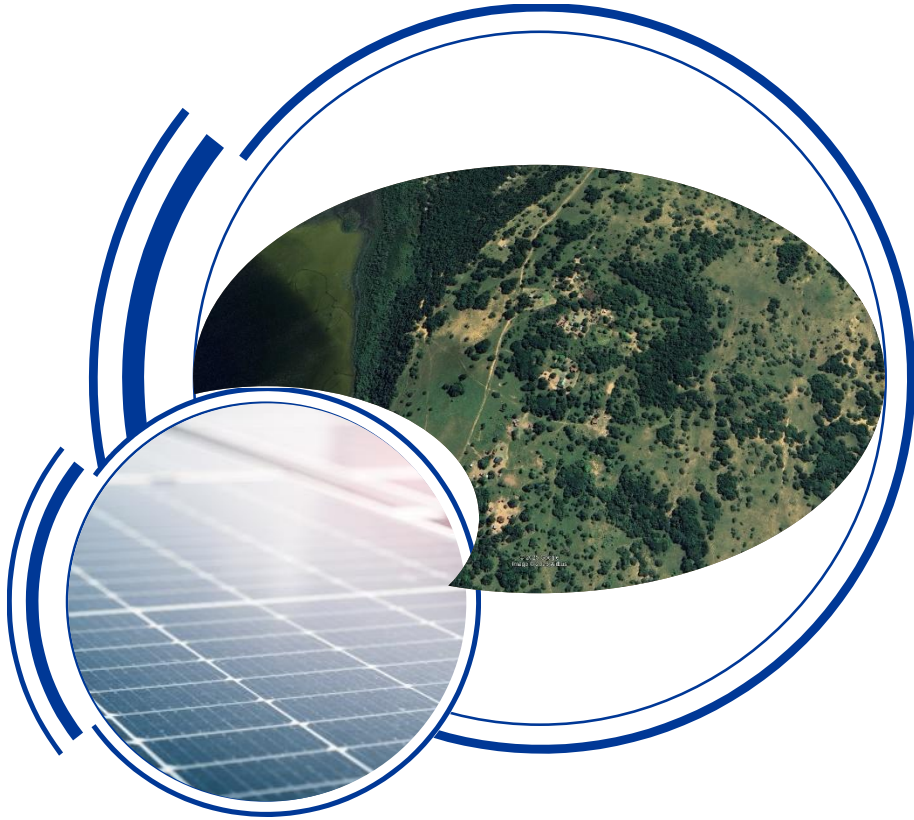


- Preliminary design estimates indicate that photovoltaic (PV) paneling can be maximized to a total capacity of 5kW per household. The proposed solution involves installing PV panels on a standalone structure, such as a carport, constructed using galvanized steel or treated single wooden pole arrangements, as illustrated below.
- These structures will be designed to:
 - Support the weight of the solar panels
 - Accommodate the inverter, battery enclosure, and other electrical components
- To ensure structural integrity and safety, a qualified structural engineer will be required to assess and determine any necessary reinforcement requirements.



Site Scenes





Conclusion