

New KZN solar study could help municipal water treatment go green

A feasibility study using solar energy at the Sundumbili Water Treatment Works in the iLembe District Municipality was conducted through the Vuthela iLembe LED Support Programme. The aim is to improve electricity efficiency through installing renewable energy to power some processes.



Overhead view of the Sundumbili water treatment works indicating the areas that could be used for ground and roof top solar panels. Source: Supplied

Vuthela is funded by the Swiss State Secretariat for Economic Affairs (Seco) and implemented in partnership with the KZN Department of Economic Development and Tourism, the iLembe District Municipality, and the local municipalities of KwaDukuza and Mandeni.

Researchers suggested several measures that would improve efficiency, including upgrading equipment, improving metering and changing the billing tariff applied by Eskom. They found that the site had sufficient space to install rooftop and ground-mounted systems to provide up to 9% of the total power required.



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The solar implementation investigated under this study will assist in providing renewable electricity for the works to abstract raw water from the lower Tugela River, treat it to safe drinkable standards, and pump it to consumers in the Mandeni and KwaDukuza municipalities.

Power comes from a ground-mounted, tracking photovoltaic (PV) system with bifacial modules and roof-mounted PV panels to supplement the power provided by the national grid.

The entire system is expected to cost about R5.2m to install and about R60,000 a year to operate. It is expected to save about R4.8m in the first nine years and about R12m over 25 years.



Proposed rooftop solar panels at the Sundumbili water treatment works. Source: Supplied

Renewables could become an important option for all municipalities to consider as load shedding on the national Eskom grid continues to prevent many municipalities from providing continuous and essential services like potable water.

This programme aims to improve the economic future of iLembe district residents through sustainable economic growth of the local economy by focusing on public financial management, municipal infrastructure, private sector development, building inclusive growth and partnerships.

A longer-term solution that could eliminate reliance on the national grid completely requires additional land for a larger solar plant.

Potential for local economic opportunities

Installing solar systems can potentially create economic opportunities for many technicians in local communities – for installation and maintenance – as well as benefit the municipality through cost savings, greater efficiency, better service delivery and a reduced carbon footprint.

The iLembe District Municipality will now need to study the findings of the Vuthela feasibility study into renewable energy at the Sundumbili WTW, consider funding models, institutional modalities for ownership and operation and take a decision on implementing the system.

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