

## Manono: Electrification of an isolated city

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**Year of commitment** : 2018

**CO2 Impact** : A network powered only by renewable energy

**Green energies** : Photovoltaic solar



**3 000 000 €**

**Builder**

Enerdeal: solar installation and storage solution Groupe

## GENERAL INFORMATION

### **Manono won the Sustainable Infrastructure Grand Prize of the 2019 Green Solutions Awards et the RDC (Congo) level + a mention for the international Sustainable Infrastructure Grand Prize.**

Enerdeal's 1MWc solar installation is located in Manono, a town of 20,000 inhabitants in Katanga, Democratic Republic of Congo.

From Lubumbashi, in the best conditions during the dry season, three days are necessary to reach the isolated city. The isolation will be more marked in the rainy season when the truck trip can reach three weeks.

In Manono, since March 2018, a hospital, a school, an airport, shops and housing are now connected to electricity. The 3200 solar panels that achieve a power of 1 MWp are connected to a battery system representing a capacity of 3 MWh, the set is probably one of the largest autonomous installations (not connected to the network) in Central Africa.

Electrification in Africa is a major objective for the improvement of living conditions and the development of regions. In the Katanga region, most residents do not have access to electricity and if electricity is available, the grid is not reliable; cuts are usual. The stand-alone installation solution using only solar energy coupled to the batteries has many advantages over installations coupled with a diesel engine.

The positive environmental impact is undeniable when diesel can be avoided. This is not the only advantage in this region where the price of diesel is very high, fluctuating and has an unsecured supply due to isolation. These elements have only reinforced the investment choice for energy entirely produced by solar panels.

The major challenges of setting up the solar installation will have been the logistical management of sending the equipment to such an isolated place and the management of a day-to-day site with limited resources. Barred roads, truck overturned, convoy to protect, difficult climatic conditions, every day brought its challenges to be raised.

Thanks to this experience, as rich as it is humanly and technically, Enerdeal has gained a notoriety that opens the doors of the international.

Commissioning: 2018

Acquisition: direct by SNEL (National Electricity Company)

## Data Reliability

Self-declared

## Funding Type

Private

## Website Enterprise / Infrastructure

<https://www.linkedin.com/company/enerdeal-nv/>

## Sustainable Development

**Attractiveness** : The project was carried out with the help of the local workforce who could be trained from the first works useful to the installation and more specifically to ensure proper maintenance of the photovoltaic system. not only on-site during commissioning, but also in Germany at the UPS supplier and control system, additional training was recently conducted to ensure proper maintenance monitoring.

As soon as the installation was completed, remote supervision and telephone support also ensured a good follow-up of the local team

**Well Being** : Thanks to the solar installation, a school, a hospital, an airport, many homes and shops are now connected to electricity, enabling much better living conditions.

Consumers of the energy produced in Manono benefit from "social" rates that are lower than the truth cost.

**Social Cohesion** : The network is powered solely by renewable energy

**Preservation / Environmental Improvement** : Electrification of the site could be achieved by guaranteeing energy production solely only to renewable energy without the use of fossil fuels.

## Testimony / Feedback

*Our company, Eurafrikan Power Solutions, has commissioned Enerdeal to perform the technical engineering, component selection and on-site commissioning of an off-grid solar power plant. The plant in Manono offers a power of 1Mw and a storage capacity of 3MWh which makes it probably one of the largest off-grid solar power plants in Africa. We confirm our complete satisfaction with Enerdeal and are willing to recommend the company for any other project of this type.*

*Frédric Chaudoir, director of the company*

## Governance

Snel National Electricity Company

**Holder Type :** Public Local Firm

Enerdeal: solar installation and storage solution Groupe Forrest: distribution lines

**Builder Type :** Other

## Sustainable Solutions

A 1MW solar installation with a storage capacity of 3MWh

### Description :

The climatic conditions impose high constraints on the material in terms of performance and resistance. For batteries, meeting the best conditions to ensure a long life is a real challenge.



1° limitation of levels and power of charge and discharge

2° temperature of batteries maintained at 25 ° in a cabin specially equipped with air conditioning

### *Material chosen*

Panels: Jinko Solar

Batteries: Hitachi

Inverters: WS Tech

- Economic development :
- Energy/climate :
- Infrastructure
- Renewable energies
- Urban Lighting

## Contest

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