LESEDI
ENERGY ENGINEERING

LESEDI RENEWABLES

BATTERY STORAGE

WIND

SOLAR

Renewable energy solutions for your business

www.lesedins.co.za

CONTENT

03

Who we are:

About us
Vision
Mission

04

What we do:

Solar Technological Solutions
Battery Storage Solutions

05

Why choose us:

Key offerings
Funding Solutions

06

Contact us

WHO WE ARE

ABOUT US

Lesedi evolved from **Intens Engineering** which was founded in1984. We have since diversified into a major **engineering, procurement** and **construction (EPC)** company, having successfully completed numerous key projects in the **nuclear, industrial power, mining,** and **oil & gas** environments.

With years of experience in both brownfield and greenfield projects, Lesedi is ideally placed to respond to clients' **integration requirements** of **existing systems** and **processes.**

To date, Lesedi has **successfully** completed over **200 modifications** at Koeberg Nuclear Power Station.

VISION

Our vision is to be the l**eading engineering, procurement** and **construction** enterprise recognised for **empowering** and **energising** the enrichment of the African continent.

MISSION

We will earn our reputation by:

- Growing in a **financially sustainable** manner.
- Never compromising **safety, quality** and **environment.**
- Attracting, nurturing, inspiring and **rewarding talent.**
- Fostering **collaborative relationships** that create value.
- Contributing meaningfully to **social upliftment.**

WHAT WE DO

SOLAR ROOFTOP SOLUTIONS

Lesedi is currently involved with rooftop solar projects (industrial/commercial) and has been involved in the following industries with solutions:

Pharmaceutical – 540kW solar facility, with 2x650kVA Diesel Generators and a 80kWh Uninterruptible Power Supply (UPS) integrated for **minimum interruption** during load shedding and saving on electrical costs during daytime;

Manufacturing for charcoal exporting facility – hybrid solution for 250kW Photovoltaic (PV) with 4x65kWh Battery Energy Storage Systems (BESS) and 250kW diesel generator in parallel operations with a 100kVA Eskom grid connection to **supply the factory** with **power** (design completed).

Lesedi Properties - 144kWp PV solar system to **offset power consumption** from City of Cape Town (CoCT) and feed back into the grid (CoCT) during week-ends and holiday periods when office is unoccupied.

Currently involved with the negotiations of a number of **commercial rooftop proposals** ranging from 65kWp with BESS to 250kWp grid tied.

SOLAR GROUND MOUNTED SOLUTIONS

Lesedi provides more than just solar rooftops but also high quality solar ground mounted solutions for when only ground space can be utilised and when rooftop space is restricted.

Lesedi REIPPPP Project experience:

Round 1: 44MW Concentrated Photovoltaic project; Commissioned *2014
Round 2: 75MW Solar PV project; Commissioned **2014

Projects under development:

- **Kalbaskraal:** 10 MW Solar PV. Project fully developed. Wheeling PPA (Letter of interest from Private Offtaker received).
- **Ariesfontein:** 75 MW Solar PV. Project fully developed. Wheeling available.
- **Donavonskop Project 1:** 10 MW Solar PV. Project fully developed. Wheeling PPA option.
- **Donavonskop Project 2:** (2 x 75 MWe) Solar PV. Site secured and evacuation is available.
- **CoCT 7.7 MW Solar:** Ground mounted PV solar system in Atlantis for City of Cape Town
- **Mossel Bay Municipality IPP** - Offer to Mossel Bay Municipality for a 34 MW solar and 15MW/30MWh BESS hybrid project.
- **AMSA 200MW Solar:** Act as Owner's Engineer for AMSA to develop and solicit offers from international EPC market for the project.
- **Mali Airport 5MW PV and 2MW/4.2MWh BESS:** Develop and been awarded as EPC by Omega Energy (IPP) for implementing the project.

WHAT WE DO

BATTERY STORAGE

Lesedi Renewables Africa has the ability to partner as EPC or Engineering, Procurement and Construction Management (EPCM) in a wide range of battery storage projects, be it for commercial, industrial or utility applications.

We have access to a variety of battery technologies, from long duration sodium sulphur batteries, a variety proven lithium technologies or flow batteries.

We address customer requirements ranging from:

Smoothing **variable generation** from wind and solar PV
Providing rapid **start-up** or **ramp-up** capability in hybrid generation systems
Provide **RE "dispatchability"** to the power system operator
Frequency **support** and **ancillary services** for power utilities
Creating **flexibility** and **optimisation** opportunities in hybrid systems
Peak shaving to overcome localised network capacity or supply constraints
Energy shifting or **energy arbitrage** in established energy markets

WIND SOLUTIONS

Wind turbines allow us to harness the power of the wind and turn it into energy. When the wind blows, the turbine's blades spin clockwise, capturing energy. Lesedi uses wind solutions to provide sustainable, efficiency and cost effective energy.

Lesedi Project highlights:
Round 2 of the REIPPPP:

- 140MW wind facility; Commissioned *2015

This project were executed with **non-recourse finance** from major South African banks and the business cases with financial modelling had to meet banking thresholds. Both projects were **successfully implemented** and **commissioned** in 2015 and 2014 respectfully and are currently operational.

Lesedi resources scope:

Project management, construction management, technical/engineering, as well as all the development activities are being managed from within the team.

1.6 MW Wind and 2MW/1.2MWh BESS: Develop of Hybrid wind, battery and diesel generation project with (REP Developments) for abalone farming business.

* In 2015 aquired Aveng Power resources involved in the development and execution teams.

WIND SOLUTIONS

Wind turbines allow us to harness the power of the wind and turn it into energy. When the wind blows, the turbine's blades spin clockwise, capturing energy. Lesedi Renewables Africa has been involved with the erection of one of the 1st wind turbines owned by Eskom at Klipheuwel in Western Cape.

Lesedi got the order for the construction of the **first Wind Turbine** in South Africa for Eskom. The purpose was to produce electricity so that Eskom could test the integration of **wind generated power** on the grid. The concrete base was designed by **Jeumont** and constructed by **Lesedi.** It was 200 m3.

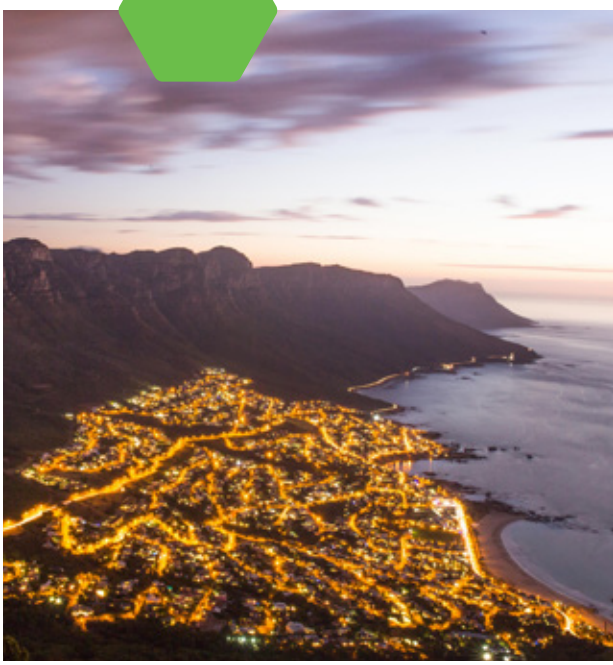
The Nacelle and blades were supplied by **Jeumont** from **France.**
Lesedi was responsible for all the **shipping, transport, logistics** and for the **erection** of the wind turbine, the supply of the **cranes** and **rigging equipment,** and assisting with the **commissioning.** Jeumont provided **only supervision.** This involved the **construction** of the tower and torquing all the bolts around each joint, the installation of the Nacelle, the installation of the blades and nose cone and connecting all the electrical and C&I wiring to the **relevant equipment.**

Wind turbines at Klipheuwel in Western Cape

WHY CHOOSE US

OUR KEY OFFERINGS

- Pre and full **feasibility assessment**
- Best in class **engineering** and **EPC experience** to support **project** development and implementation
- **Balance-of-Plant** design and installation
- Contract **review** and **preparation**
- **Procurement** and **cost** control
- **Project** management, **logistics** coordination and **construction** management
- **Schedule** monitoring
- **Quality** assurance
- **Specialist** studies
- **Environment** and **safety** monitoring
- Commissioning **support services** and **Safety**,
- Health Environmental and Quality **(SHEQ)**
- Hybrid **Solution** Modeling



The Lesedi Renewables Africa team has the capability and broad experience to investigate, advise and implement integrated solutions in optimising and incorporating the most suitable or specialist technology to fulfil specific project needs.

Lesedi Renewables Africa can execute **renewable projects** on **EPCM basis** with OEMs and EPC's. We will **source technology** from international OEMs and **specialists,** whilst the **engineering** and the supply of the balance of **plant** and site **infrastructures** are undertaken in-house. If this work is too large for **'in-house'** execution, it will be **outsourced** (including to Lesedi Nuclear Services).

Most industrial sized **rooftop solar, energy storage, co-generation, tri-generation** and **waste** to **energy** projects require **integrated solutions** of existing processes, while maintaining the **original intent** of the industrial complex, thus requiring thorough understanding of the **business** and **process plant** for **optimisation** before project implementation.

FUNDING SOLUTIONS

Financial **modelling services** can be provided on **projects** between **100kW** and **10MW.** Find out more by **contacting us today.**

CONTACT US

Our business combines project development capabilities together with Lesedi's Engineering, Procurement and Construction (EPC) capabilities, with proven technologies to execute various forms of renewable power generation projects. Contact us.

Renewables@lesedins.co.za | +27 21 525 1300

01

CONTACT

Upon **contacting us**, Lesedi Renewables Africa will have our **sales consultants** conduct **energy assessment** and then **design** the correct combination of **renewable energy technologies** for you.

02

SOURCE

Lesedi will then **generate a quotation** for the best **expert solutions** that provide the ability to **generate reliable power, reduce costs,** and **minimize inconvenience.** Upon **acceptance** of the quote, we will **project manage** the project from **beginning** to **end.**

03

INSTALL

For **Installation** Lesedi Renewables Africa uses **experienced teams** of **engineers, electricians**, and **technicians.** We use a **Greencard authorised** installation company that we have contracted. The **PV GreenCard** is an **industry led quality l**abel that is **inclusive** in nature and becomes the key to ensure a high standard of **quality** for smallscale **Solar PV** installations.

PVGreenCard

04

O&M

For **operations & maintenance** we take on **overall risk** and provide **guarantees** on **performance.**

LESEDI RENEWABLES AFRICA (PTY) LTD

Renewables@lesedins.co.za | +27 21 525 1300

Head Office: 12 Edison Way Century Gate, Century City, 7441,Cape Town, South Africa

Johannesburg Office: Wild Olive Building (1st Floor), 262 Rose Avenue, 0157, Centurion, Johannesburg, South Africa

LESEDI
ENERGY ENGINEERING