

## CASE STUDY NATURAL CAPITAL FIRST OFF-THE-GRID STORE

In 2021, the Tesla Motor Group nominated PEP Africa for the Innovation Excellence Award for the design and implementation of the first off-the-grid retail store in Africa.

### PEP Africa's first off-the-grid store is nominated for a Tesla Innovation Excellence Award

The goal in developing a stand-alone, off-the-grid store is:

- ▶ to minimise the input costs of opening new stores in the group's African operations;
- ▶ to create a safe, friendly place to shop; and
- ▶ to be self-sufficient by being able to prevent business interruption.

The concept for the store was developed in Cape Town, in association with various industry experts. Because the store is modular and made from repurposed shipping containers, they had to be constructed in Cape Town and shipped to their destination, Kasumbalesa, a town in the Democratic Republic of the Congo, on the border with Zambia. The project team considered many aspects, from structure to power, transport and assembly on location.

The business case for the project was to improve efficiencies when rolling out new

stores in African countries. Traditional store infrastructure is not always readily available, or is very expensive. Designing and building a stand-alone, off-the-grid store has presented more opportunities:

- ▶ Reduced input costs – decreasing the cost of store layout and improvements. Should the store be moved, these costs are not lost;
- ▶ Reduced rental – moving from formal centre management to vacant land rental;
- ▶ Increased footprint – expanding into wholesale, smaller towns, outlying areas, and cross-border locations;
- ▶ Reduced services costs – one-off installation costs for electricity through solar, with the reduced risk of downtime due to interrupted power supply; and
- ▶ Test markets – the ability to test markets through pop-up store concepts.

One of the biggest challenges was meeting the requirements for electricity. The project team included Rubicon, a market leader in renewable energy systems. They advised, designed and built the off-grid solution.

After testing, modifications and final approval of the systems, the store was packed and shipped to Zambia, and opened on 19 November 2019.

#### Inputs

- ▶ Operational efficiency
- ▶ Resource management
- ▶ Responsible sourcing

#### Outputs

- ▶ Cost savings
- ▶ Energy saving
- ▶ Unchanged shopping environment and customer experience

747.5 kW

generated from solar power  
with no additional grid  
electricity



Second  
overall

store in sales  
performance

#### Additional business statistics

- ▶ Savings on the cost of electricity (compared to other similar traditional stores in Zambia) amount to 0.7% of sales per year
- ▶ Since the development of the Zambian store, solar and battery back-up power have been rolled out to 70% of stores in Angola, Mozambique, Nigeria and Zambia. The success of the Zambian store secured the roll-out of the same solar and battery equipment to 135 stores. The priority was to use photovoltaic (PV) solar power for all stores that have roof access, and battery back-up for grid-powered stores without space to instal solar panels.
- ▶ The solution powers the stores' main equipment, including lights, power points, alarm systems, point-of-sale terminals and network infrastructure.
- ▶ An estimated R15.75 million per year will be saved across 106 stores in Nigeria and Angola through savings\* on maintenance, fuel and generator costs.
- ▶ Diesel saved from generators: 710 000 L (1 921 CO<sub>2</sub>e)

\*Savings calculated at the time. It will change due to fuel price increases and currency valuation.