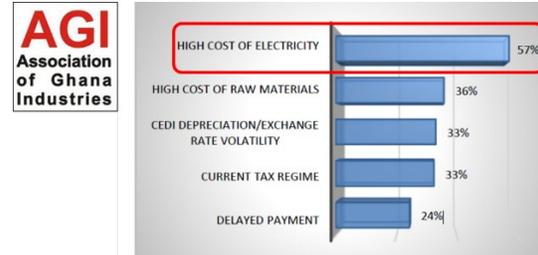


HPW fresh & dry Ltd.

A major player in Ghana's agro-processing industry



Source: THE AGI BUSINESS BAROMETER, 2nd QUARTER 2019

About HPW fresh & dry Ltd.

HPW fresh & dry Ltd. is a Ghanaian company, established in 2010; its parent company HPW AG is based in Switzerland. HPW fresh & dry produces dry fruit out of mango, pineapple and coconut. The factory is located in Adeiso, near the capital Accra, and mainly supplies customers in the European market. Currently, around 800 permanent employees work at HPW fresh & dry. Annually the company processes 20,000 t of raw material from about 600 suppliers across the country. With its value addition at source the company provides jobs for the staff, a market for the fruit producers and foreign currency inflows into the Ghanaian economy.

At HPW's factory site near Adeiso the grid connection is unreliable with severe voltage fluctuations and several power outages per day impacting productivity, equipment life span and overall revenue. Due to the unpredictability of grid electricity, HPW fresh & dry is very much dependent on two diesel back-up generators to ensure a consistent supply of electricity. As a consequence, the company consumes large quantities of diesel fuel, which comes at a significant financial burden, with diesel generation costs well over 30 USD(\$)/ct/kWh.



Fact Sheet Electricity Supply HPW fresh&dry

- Average load: 290 kW
- Diesel generators: 2 x 500 kW
- Operations: 24/7
- Power supply: on average, 60% from grid and 40% from diesel generators due to frequent grid failures; plus existing 110 kWp solar rooftop installation
- Average electricity demand: 7,000 kWh/day (2,500,000 kWh/a)
- Annual electricity costs (grid): \$ 365,000
- Annual diesel costs: \$ 180,000
- Average number and duration of power outages:
 - 70 power cuts a month
 - 60 h of power outage per month
 - 120 h of voltage below operations' threshold per month

The Solar Business Case for Industry in Ghana

In Ghana, export-oriented businesses such as agro-processing companies play a vital role for the economy. That makes reliable and cost-effective electricity a key success factor to drive competitiveness and create employment in this sector and beyond. However, according to the Association of Ghana Industries (AGI), the high cost of electricity continues to be the number one challenge for industry.

CASE STUDY – GHANA

It is in this environment that HPW fresh & dry aims to implement its growth strategy and to invest significant resources into the development of new products: a range of fruit-based snacks has been developed over the past years and the processing equipment is becoming ever more demanding on the reliability and quality of power supply. In other words, to stay in business, HPW fresh & dry needs to power its operations with stable and cost-efficient electricity. In this regard, solar photovoltaics (PV) is a simple and well-proven technology to fulfil the company's quest for low-cost and reliable power.



The BeBa Africa Solar Solution

- After an initial business case calculation, we carried out a load measurement campaign, followed by a detailed feasibility study and a financing proposal for a new 360 kWp rooftop solar power plant, taking the total installed solar capacity at site to 470 kWp.
- For the technical design we worked very closely with HPW fresh & dry to ensure the most optimal integration of the solar system with the factory's existing power supply.
- Modules and inverters were sourced from the Tier 1 component suppliers QCells and SMA from Germany.
- Procurement and shipping of the solar power plant took about three months.
- The installation was completed in 17 days, in cooperation with our local Ghanaian solar partner **Tino Solutions Ltd.**
- To ensure optimum performance of the solar installation, we developed a custom-made control system for integration of the solar power plant with the grid and diesel generators. In addition, we provide HPW fresh & dry with 24/7 technical monitoring and operations services as well as onsite support through our local partner.

Lastly, with BeBa Africa's tailored financing approach no upfront investment by HPW fresh & dry was necessary for the new solar power plant, allowing the company to focus its capital spending on scaling up its operations.



Results

For HPW fresh & dry solar power means to significantly reduce its yearly electricity costs, thereby freeing up cash for further investment in the growth of its core business, and at the same time to improve the company's energy reliability and environmental stewardship.

HPW fresh & dry now produces a total of some 660,000 kWh of green electricity per year from solar energy, covering approx. 25% of the factory's power demand and reducing its dependence on grid electricity and diesel generation. Solar power enables the company not only to reduce its monthly electricity bill by some 20%, but also to save over 30,000 litres of diesel per year. This improves the company's carbon footprint by avoiding over 360 tonnes of CO₂ per year, through substitution of both grid and diesel power.

- 20% savings on electricity costs.
- 30,000 litres diesel reduction per year.
- 660,000 kWh green electricity generation per year (around 25% of factory power consumption).
- 366 tonnes CO₂ savings per year.
- 24/7 remote performance monitoring.

Looking ahead, HPW fresh & dry considers a further expansion of its solar capacity together with a battery storage system as well as the installation of a biogas motor, to achieve the goal of near complete energy autonomy of the factory.