

# VILLIERA WINERY CASE STUDY

*Villiera Wines is a family run winery in Stellenbosch region of South Africa, committed to preserving the environment through innovative solutions, such as solar powered roofing, rain water harvesting and adoption of farm utility electric vehicles.*

The initial Solar installation covered 950 m<sup>2</sup> and during the latter part of 2017 the solar panel installation was increased to a total of 1155 m<sup>2</sup>. Villiera currently produces a large portion of its own energy requirements from this completely sustainable source (162 KVA) and the increased capacity provides sufficient energy to power pumps for the dams, cooling, vehicle charging, lighting etc giving them complete Eskom independence during sunshine hours. In addition, the cellar receives its lighting requirements through solar domes which were installed to further reduce Villiera's reliance on carbon-based energy production.

Roughly 10, 000 m<sup>2</sup> of roof is now connected to the rainwater harvesting system. The water is diverted from the roofs through rudimentary filters into irrigation main lines. Each millimetre of rain per m<sup>2</sup> surface equates to 1 litre of water. Assuming these estimates Villiera aims to recover approximately 7000,000 litres of water per year based on the average rainfall of 700mm per year.

A greening project to rehabilitate fallow land entailed the planting of a 100,000 indigenous trees on the farm which further reduced Villiera's carbon footprint. These trees were grown in old milk containers, plastic water bottles etc. by our staff and then purchased from them when a year old and planted out in the Wildlife Sanctuary.

In 2010, in conjunction with two neighbours, Villiera wines set aside 230ha of land for Wildlife Conservation. The Villiera Wildlife Sanctuary is home to approximately 400 mammals and 127 different bird species. Two hour conducted game drives are available Monday to Saturday.

Viticulturist Simon Grier has always been a keen supporter of maintaining environmentally friendly vineyard practices. The farm has not sprayed insecticides for over fifteen years and a flock of up to 1000 Peking ducks are responsible for some natural pest control.

*Pebbles Project:* The Pebbles Project is located on Villiera who made available the offices. The main emphasis of the Pebbles Project is on education and enriching the lives of disadvantaged

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children and families in the Winelands farming communities in the Western Cape. Villiera's Wildlife Sanctuary enables the Pebbles Project to teach environmental awareness incorporating interactive experiences.

The Villiera Early Childhood Development (ECD) Centre and After-school club are operated under the supervision of the Pebbles Project. Early childhood development is provided to +30 children of Villiera farm workers and the fully equipped after-school club provides a safe environment where children can complete homework assignments under supervision while their parents are still at work.

Villiera have been rewarded with membership to the Biodiversity of Wine Initiative and are also dedicated to on-going education and upliftment of their staff. In addition, Villiera received the 2017 International Drinks Award for the Green Company of the year. This was in recognition of their initiatives.

As part of their sustainability strategy Villiera also chose to adopt electric farm utility vehicles.

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## Challenges

Before Villiera started working with Melex, they were utilizing petrol and diesel powered vehicles (ICE) for transport and utility functions such as bakkies and tractors. These vehicles emitted carbon emissions from burning fossil fuel, whilst operating at a higher cost along with higher capital costs. Practical alternatives were needed to align with the Villiera green strategy.

## Solution

Villiera found great benefit in using the Melex ElectroFarm Utility vehicles - producing far less carbon emissions, running at a lower cost, with lower maintenance and the ability to generate their own "fuel" for these vehicles from their Solar system. The vehicles are being used in all aspects of the farm's daily activities.

**"They are nippy in and out of the vineyards and up and down work rows. All vineyard inspections are performed at a much faster rate than the traditional, much more cumbersome vehicle. They are also much easier to operate for beginner drivers. The need for garages is much less and one only needs a plug rather than a diesel tank."** remarks Simon Grier, CEO of Villiera Wines.

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Additional benefits include lighter footprint on the roads and fields (600 kgs versus 1500kgs or more) producing less dust and reducing road maintenance significantly, along with the reduction in diesel and petrol storage

**“A future free of fossil fuel-based farming is just around the corner. Solar power and electric vehicles are showing the way. Development of new lighter, energy efficient batteries will result in this becoming a reality. Get involved !”** advises Simon Greer.

Melex Electrovehicles Director Grant Healy further commented:

**“ Electric Utilities on farms (and game farms) solve a number of issues traditionally associated with Internal Combustion Engine vehicles, Melex ElectroFarm Utilities offer a safer and easier-to-manage vehicle for farm workers. They are a third of the cost to operate and maintain compared to farm ICE vehicles such as bakkies, quads and tractors. Easily operated between planted rows and in tunnels without risk or fear of pollution or crop damage, removing the risk of fuel storage, reducing road and environmental impact as well. Due to the vehicles light weight and 100% torque availability of their electric motors, these vehicles are able to go where traditionally 4 wheel drive would have been needed.”**