

# PURE WINE

Battery storage system takes  
organic farming to a whole new level



## PROFILE

**Client:**  
Pierre Michaùd

**Business:**  
Agriculture

**Region, country:**  
Hérault, France

## THE BACKGROUND

Languedoc is France's largest wine-growing region and also one of its oldest. In the region's east, Pierre Michaùd grows delicious grapes, just as his father did for the past 40 years. However, times have changed, and Michaùd wants to run the farm in closer harmony with nature and also diversify his activities, including cattle farming on a mountainous area of his land. The problem is that there is no power supply on the mountain to pump the groundwater or to light the barn.



## THE CHALLENGE

Michaùd's barn and his handful of cattle are 300 metres from the public utility grid. He looked into extending the public network, but this would have been too expensive for him. The farmer would have had to pay out EUR 100,000 from his own pocket. It would also have required extensive clearance work on the steep terrain, which would not only have destroyed the historic soil, but also ruined the landscape. Operating a diesel generator was also out of the question, due to the cost and the requirements of his organic status. Diesel generators burn fossil fuels; they're noisy and dirty, plus their high maintenance costs and poor efficiency make them considerably less cost-effective to run.

The geographic location in the south of France is ideal for solar power, but farmers often need power when the sun isn't yet at full strength or has already set. Battery storage systems are the ideal addition to a photovoltaic installation, as they store the power during the day so it

can be used when it's needed. Modern lithium-ion battery storage systems last for decades, making them perfect for agricultural use.

### Requirements for a storage solution:

- High technical reliability and resilience against failure
- High storage capacity with many guaranteed cycles for sustainable power delivery
- Straightforward installation and compatibility with the photovoltaic system



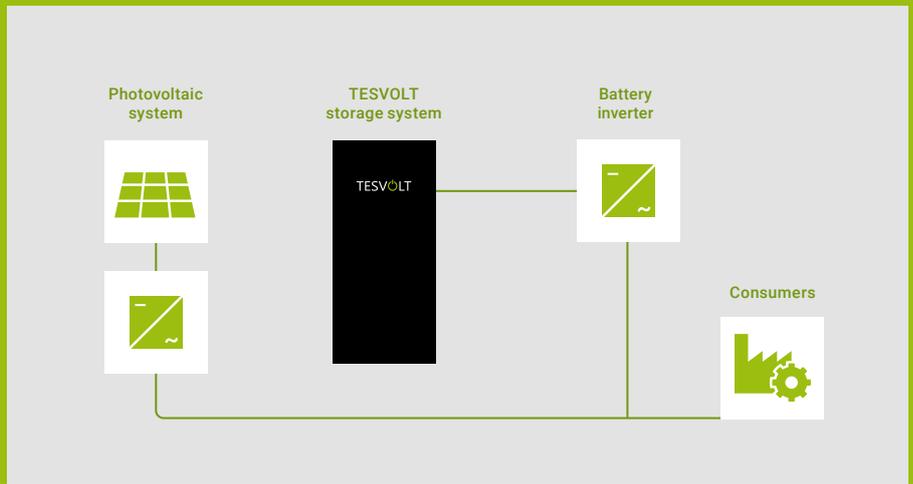
OFF-GRID



SELF-CONSUMPTION  
OPTIMISATION

## THE SOLUTION

SAS Perma-Batteries from Saint Chama-rand installed a TESVOLT TS 48 V battery storage system together with a 7 kWp photovoltaic installation. Pierre Michaüd and Perma-Batteries gained funding from the European Agricultural Fund for Rural Development (EAFRD), which minimised the purchase cost for the system. The TS 48 V used has an energy content of 14.4 kWh and charging and discharging power of 7 kW.



*"We have experience with many different storage systems. I can say quite unequivocally that Tesvolt is the best commercial storage system."*

Julien Allera, SAS Perma-Batteries

*"We are delighted that the storage system saves us money AND significantly reduces our emissions."*

Pierre Michaüd, farmer and winegrower

## THE BENEFITS

- **Avoiding a connection extension** costing EUR 100,000
- **Avoiding the operating and maintenance costs** of a diesel generator unit (approx. EUR 3,000–4,000/year), plus the carbon emissions, noise and smell.
- **Safe and long-lasting**  
The system boasts an above-average lifespan of up to 30 years thanks to extremely robust Samsung SDI battery cells and the one-of-a-kind battery management system. This optimises cells not only within a single module, but also between modules within a cabinet.
- **Future-proof**  
Thanks to the revolutionary ABO battery management system, battery modules of the same type can be upgraded or replaced without causing any problems or efficiency losses, even after years of service.
- **Powerful**  
Thanks to the battery management system, TESVOLT's storage systems make the energy they accumulate fully available. TESVOLT storage systems are 1C-capable, meaning they can be fully charged or discharged in one hour with the proper configuration. As a result, even high-performance consumers can be kept running when the sun isn't providing enough power.

## PROJECT FACTS AND FIGURES

Storage system	TS 48 V
Energy	14.4 kWh
Power	7 kW
Cell	Lithium NMC prismatic (Samsung SDI)
Efficiency (battery)	Up to 98%
Cycles	6,000–8,000 (0.5C to 1C cycles at 23 °C +/- 5 °C with 100% depth of discharge)
Operating temperature	-10 to 50 °C
Battery inverter	Studer XTH-8000
Installer	SAS Perma-Batteries

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