

## Climate Change Research Strategy - Energy Efficiency Solutions Feasibility Case Study – Rosnay Organic Wines, Canowindra

**Rosnay Organic Wines is a vineyard and orchard situated in Canowindra, NSW where a study was conducted to assess the feasibility of generating energy on-farm using solar panels, flow batteries and peer to peer energy trading.**

The NSW DPI Energy Efficiency Solutions project conducted feasibility studies to assess the technical and commercial feasibility of proposals that would address the cost, reliability and sustainability of energy use on farms. Proposals were sought through public advertisements and more direct engagement with associations and networks. An independent advisory group identified ten priority proposals through a merit selection process, then an independent expert assessor was matched to each priority proposal to undertake a detailed feasibility study. This case study summarises the context, proposal and results of the Rosnay Organic Wines feasibility study.

### Rosnay Organic Wines



### Context

Rosnay Organic Wines is a family owned certified organic winery and fruit growing business located in Canowindra, NSW, approximately 300 km west of Sydney. Certified organic wines, olives and figs have been produced at Rosnay by the Statham family since 1997 and sustainability is a key component of the business's ethos.

## Proposal

To address issues related to the farm’s location at the end of power infrastructure and to improve sustainability, the farmer plans to install a 28 kW solar photovoltaic and 40 kWh flow battery storage system that uses a peer-to-peer (P2P) energy trading platform. The P2P platform will allow the sale of excess renewable energy to other users, including a nearby irrigation pump owned by a neighbourhood community group. The farm will transition to three phase power generation so the farm’s operations will no longer be restricted by the capacity of their diesel generator and allow the electrification of key wine-producing equipment such as the presser and crusher.

The proposed project aims to reduce energy costs for the business, move it towards carbon neutrality and provide energy security, minimising power outages and the financial impact of outages.

### Estimated costs and benefits

<b>Project cost</b>	\$188,227
<b>Operating cost savings</b>	\$16,164 p.a.
<b>Energy use reduction</b>	290 GJ p.a. (90%)
<b>Emissions reduction</b>	35 tCO <sub>2</sub> e p.a. (80%)
<b>Simple payback period</b>	12.4 years

Additional benefits from the project include:

- Increased product quality as offsite processing is moved onsite due to increased power capacity.
- Improved energy security due to battery backup powering crucial operations equipment during instances of blackouts.
- Reduction in food waste due to battery backup power maintaining cool room temperatures in instances of blackouts.
- Water savings resulting from the underground irrigation system being used during the day and can potentially use P2P traded solar power from the main solar system connected to the farm.
- Reduced maintenance of diesel tractor which will only be used sporadically as it is no longer used to power the power take-off (PTO) generator.
- Increased ability to market of the farm’s sustainability credentials.

## Acknowledgments

The Climate Change Research Strategy (CCRS) is an initiative of the NSW Department of Primary Industries (DPI), supported by an investment from the NSW Climate Change Fund. The Energy Efficiency Solutions project is one of seven CCRS projects. More information is available online here: <https://www.dpi.nsw.gov.au/climate-and-emergencies/climate-change-research-strategy>

The objective of the Energy Efficiency Solutions project is to help energy-intensive farms identify options to improve their energy efficiency and reduce costs. The project is led by NSW DPI, advised by a steering committee. NSW DPI contracted the Australian Alliance for Energy Productivity (A2EP) to provide management services for the conduct of ten feasibility studies. This case study summarises the findings of a detailed study that was undertaken by independent expert consultants, Northmore Gordon.



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