

# Energy Efficiency

## #9 RENEWABLES CASE STUDY 1

**The rapidly escalating price of grid electricity is encouraging growers to explore options in renewable sources, particularly solar PV.**

It's not necessary for the solar system to power your whole farm by itself – a smaller system can “take the edge off” the bills. This may be especially valuable if your farm is near the 100MWh threshold that will see you defined as a large customer with different demand-based tariffs. A relatively small system may drop you below that threshold, resulting in enormous cost savings.

Some renewable energy companies now offer attractive lease options that can reduce or remove the up-front cost of installing solar on-farm. For example, one company specialises in the installation and maintenance of commercially-sized solar power systems under a lease payment plan. In many cases, the money saved on power bills is significantly greater than the cost of the lease, making solar energy a solid investment decision. The company can analyse your consumption and tailor a system to your needs.

### Example 1

This example is a small fruit producer with a annual electricity bill of about \$5900. For this grower, the provider recommends a 10kW solar system that is not connected to the grid. Based on the grower's current energy use profile and solar characteristics of the region, this system should produce approximately 13 240kWh each year. This amount of generation would reduce the farm electricity bill to \$2895, saving about \$3000 in the first year. The annual savings are projected to increase as the tariffs for grid-supplied electricity continue to rise.

Based on a 10 year lease period, the payments would be \$232 per month or \$2780 in the first year. These estimates suggest that the savings on the electricity bill are greater than the lease payments, making the solar system a very attractive investment with net negative costs from day one.

### Example 2

This example is based on an irrigator with an annual electricity bill of about \$23 300. In this case, the provider's analysis of the grower's energy use and local conditions suggests that the optimal solution would be a 30kW system that would produce an estimated 39 000kWh each year (on average). This level of production would reduce the grower's annual electricity bill to about \$14 430, a saving of about \$8870 in the first year.

With a 14 year lease period, the monthly lease payments would be \$623, or \$7480 for the first year. In this example, the energy saving would be about \$1400 per year less than the lease payments. As with the first example, a solar system would appear to be a cost-effective way to reduce the energy bill for this grower.

### Example 3

A packing facility with cold rooms and processing operations provides the data for this example. The provider recommends a 30kW three phase system for this case, but the nature of the power profile and other characteristics of the business mean that a lease option is not suitable. With no grid connection, the system can help to meet the facility's peak demand between about 8am and 3pm.

The current annual electricity bill is about \$82 250. The 30kW solar system would reduce this to about \$78 620, a saving of about \$3620 in the first year. The system would cost \$40 800 to install after transferring the Small-scale Technology Certificates (STC) to the provider. The provider's analysis suggest that the grower's capital expenditure will be returned in about nine years, although there will be considerable variation resulting from changing interest rates, supply tariffs etc.

*Disclaimer: The information provided in this fact sheet provides examples of what may be possible in specific circumstances and does not constitute financial advice. We encourage growers to seek specialist financial advice before making significant investments.*

*This project was supported by funding from the Queensland Government Department of Agriculture, Fisheries and Forestry.*

For this example, the economic case for installing solar is less clear, but there may be other benefits to the business. For example, the system is projected to save about 41 tonnes of greenhouse gas emissions each year, which can help to establish environmental or carbon-friendly credentials.

### **More information**

The analysis presented in this fact sheet is provided by one of several businesses that deliver renewable energy solutions to horticulture producers. Different providers may offer better solutions to suit your particular requirements. For more information and contact details, please contact Growcom.

*Disclaimer: The information provided in this fact sheet provides examples of what may be possible in specific circumstances and does not constitute financial advice. We encourage growers to seek specialist financial advice before making significant investments.*

*This project was supported by funding from the Queensland Government Department of Agriculture, Fisheries and Forestry.*