

Case story 5: automated cool room doors

Young, NSW

The 'Watts in Your Business' project has completed energy audits of 30 packhouses and orchards Australia-wide. This case story of E.F. Cunich & Co. Orchard shows where energy use and costs could be reduced.

The E.F. Cunich & Co. (Cunich) Orchard in Young, NSW, produces around 220 tonnes of cherries and stonefruit per annum. It is a small enterprise compared to other facilities audited. It is comprised of a packhouse and two cold store rooms that consumed just under 79,500 kWh of electricity between June 2012 and July 2013. Electricity usage by the packhouse and cold store rooms represent 85% of the orchard's total usage, costing around \$21,500 (excluding GST) during this period.

Use of cold store room

At Cunich's cold store, Room A is the main working room for approximately 18 weeks a year during the packing season (November to April). It has a storage capacity of 120m³ and entrance dimensions of 2m wide by 3m high. The room does not have a plastic strip curtain at the entrance, and the cold store door

Site savings opportunities:

- Save \$1,170 every year with a one-off capital investment of \$6,250.
- Achieved by installing automatic sliding doors onto main cold store.
- Payback period of 5.5 years.

is frequently left open by staff during intense packing periods. The open cold store door results in warmer air entering, which results in excessive refrigeration electricity usage and costs.

The room door is left open for approximately five hours per day during a working week in the packing period.



Automating the sliding door into the cold store at Cunich's would prevent energy losses.

Due to Cunich's peak packing period and use of the working room occurring in summer, there is a large temperature difference between the cold store and the ambient temperature (average difference of approximately 26°C). To minimise refrigeration electricity consumption and associated costs, cold air must be kept from escaping and warm air kept from entering.

Automated sliding door

Installing a new automated sliding door for cool store Room A using an electric, automated tracking system will enable the door to be opened and closed on demand using either:

- radio control (remote control clicker),
- motion detection,
- photo eyes; or
- induction loop activators.

The opportunity will ensure the working room door remains closed when access to the room by staff is not required and will reduce cold air losses and associated refrigeration electricity usage and costs. In addition, staff will be able to access the room without the need to disembark from forklifts, reducing the time and effort taken to move fruit in and out of the working room.

Another option of using a 'rapid roller door' at Cunich's facility was considered. While a rapid roller door opens and closes faster than an automated sliding door, it is significantly more expensive and incurs a significant payback period while achieving the same functionality.

Benefits of opportunity

- Increased staff productivity and access to room.
- Reduced cold air loss from cold store.
- Better quality door seals.
- Reduced maintenance costs due to lower overall operational hours as a result of reduced warm air inflow into, and cold air losses.
- Better produce quality due to a constant temperature that is maintained (extremes avoided).

Implementing automated sliding doors

Before installing an automated sliding door system:

- Obtain quotes and appoint a contractor
- Agree on a schedule to complete the works when access to Cool Room A is not required.
- Install equipment in accordance with the manufacturer's guidelines and requirements.
- Monitor the works to ensure appropriate operation.

All automated doors that are installed on rooms with controlled atmosphere capability should have a manual emergency release available both inside and outside of the room to allow opening of the door in the event of a power failure.

Acknowledgement: 'Watts in Your Business' is funded by the Department of Industry as part of the Energy Efficiency Information Grants program and managed by Apple and Pear Australia Ltd (APAL).

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For more information contact APAL:

03 9329 3511 | info@apal.org.au | www.apal.org.au