

Case study – Swire Cold Storage



Cool energy savings for cold storage warehouse

Installing computer-controlled variable speed drives on refrigeration plant compressors has enabled Swire Cold Storage's warehouse in Lurnea, Sydney, to reduce its energy consumption by more than 15 per cent during the cooler months.

Swire Cold Storage is Australia's leading refrigerated warehouse provider, with a fleet of 220-plus vehicles and 17 facilities occupying 73 million cubic feet with 326,000 pallet spaces.

Part of the privately owned global Swire Group, the company has been at the cutting edge of energy efficient warehousing in Australia for many years now. General Manager, Engineering Services Sam Czyczelis has worked for Swire Cold Storage since the late 1980s and knows just about everything there is to know about industrial refrigeration systems. Czyczelis recently found out about new variable speed drive technology that had the potential to improve the energy efficiency of the large rotary screw compressors at the company's Lurnea warehouse. The warehouse provides blast-freezing services and refrigerated warehousing to some of the largest vegetable processors and poultry producers in Australia.

While Czyczelis was confident the solution would work, he needed to create a compelling business case to justify the capital expenditure. An Energy Saver Industrial Refrigeration Audit in September 2010 enabled him to do just that.

'Through the audit, I was able to both test my work and justify the substantial amount of capital expenditure required to complete the project,' says Czyczelis, who is responsible for the repair and maintenance of all buildings, plant and equipment around Australia. ►

In brief

Energy Saver Industrial Refrigeration audits promote the widespread adoption of cost effective and commercially proven energy efficient technologies. These technologies are applicable to medium and large NSW industrial refrigeration facilities, such as cold storage facilities, dairy processors, food and beverage manufacturers, abattoirs and meat processors.

Swire Cold Storage, Australia's leading refrigerated warehouse provider, used its Energy Saver Industrial Refrigeration Audit to help justify capital expenditure for new variable speed drive technology to be added to its rotary screw compressors. This reduced the company's energy consumption between April and September by more than 15 per cent.

Results

- Annual reduction in carbon pollution of about 840 tonnes.
- Estimated total savings of around 786 megawatt hours per annum.
- Simple payback of 4.5 years.



► 'Our Lurnea warehouse is relatively new, built in stages between 2005 and 2009. And while it was equipped with energy efficient compressors when it was being built, new technologies had become available in the previous two years that could further improve their performance.'

'Our large capacity rotary screw compressors work very efficiently during the warmer months but don't perform at their best between April and September, when they are required to move lower volumes of gas at low load periods. The variable speed drives have resolved this problem and will pay for themselves in just over four-and-a-half years.'

Czyczelis says the cost of the audit, conducted by an Energy Saver refrigeration specialist, was subsidised by the Office of Environment and Heritage (OEH) through its Energy Saver program. OEH contributed 70 per cent of the audit's total cost.

'The audit highlighted the opportunity for sensible capital investment,' says Czyczelis, who has actively promoted Energy Saver to other operators via his role on the energy efficiency committee of the Refrigerated Warehouse & Transport Association of Australia. 'I'd highly recommend the audit to other cold storage companies. In our case, it helped to reduce our electricity consumption by an annual 786 mega watt hours.'

'Following on from the success of the Lurnea project, we will be looking to implement similar initiatives in some of our other warehouses in Australia.'

Apart from the cost savings, Czyczelis says the initiative has also provided substantial environmental benefits. 'John Swire & Sons, our global owners, are very committed to conservation,' says Czyczelis. 'To that end, we had already substantially reduced both our water and electricity consumption in recent years, cutting our carbon output in Australia by around 40 per cent between 2007 and 2010.'

'This initiative will enable us to reduce the Lurnea plant's carbon emissions by a further 840 tonnes per annum – a win-win situation for our company and the community.'

Your next step

To find out how your business can access support contact the Energy Saver team

Email energysaver@environment.nsw.gov.au
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