

Reverse osmosis and smarter water management cuts Cryovac's water usage by more than 20%

SUSTAINABILITY COVENANT CASE STUDY

Since 2006, Ai Group has provided funding assistance for 34 sustainability and environmental projects involving 62 participating organisations. More than \$1 million was invested in grants in the past three years.

A new Sustainability Covenant with EPA Victoria was launched in March 2009, with funding of \$3 million over the next three years.

Key outcomes

GRANT: \$27,400

WATER CONSUMPTION:
2006/07: NEARLY 60 ML
2007/08: 55.9 ML
ESTIMATE FOR 2008/09: 42.6 ML

CAPITAL COSTS: RO DELIVERY SYSTEM, BARRIER PROCESS TRADE WASTE RECOVERY AND RAINWATER HARVESTING: \$270,000.

PAYBACK PERIODS:
RO DELIVERY SYSTEM: 8.6 YEARS
BARRIER PROCESS: 9.04 YEARS
RAINWATER HARVESTING: 40.45 YEARS
TOTAL SCHEME: 13.08 YEARS

IF ALL OPTIONS WERE IMPLEMENTED, 10.75 ML COULD BE AVAILABLE FOR COOLING TOWERS IN A YEAR OF AVERAGE RAINFALL.

Installation of a reverse osmosis (RO) plant and better water management at the Cryovac Food Packaging Division in Victoria have cut water usage from nearly 60 ML in 2006/07 to 43 ML in 2008/09.

Some of the company's manufacturing processes are water-intensive, with water used both to cool and heat plastic multi-layer co-extruded bags. Water quality is important for this food grade product and, while water was filtered, it then went to trade waste after total dissolved solids had built up.

In 2007 Cryovac decided to install the RO plant to improve water quality, but wanted to ascertain if it could reuse the waste water from this process in the cooling towers

which consume about 63 per cent of the site's water. It also wanted to examine the feasibility and cost of two other possible sources of water for the cooling towers: treating barrier process trade waste and installing a rainwater harvesting system.

A study funded by a \$27,400 grant from the Australian Industry Group (Ai Group), showed all three options were feasible.

However, total capital costs were nearly \$270,000 with payback periods of 8.6 years for a system to deliver water from the RO to cooling towers, just over nine years for a treatment system for barrier process trade waste and 40 years for rainwater harvesting.

Despite the capital costs and lengthy payback periods, the company decided to proceed with the delivery system from the RO plant to the cooling towers. They are also planning to proceed with the treatment system for the barrier process trade waste in 2010 according to Mark Poplawski, Environmental Projects Leader.



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Further information

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"We installed the RO plant because the project was justified on product quality, but it has also helped cut our site water use by about 20 to 25 per cent," Mr Poplawski said.

The study estimated that rainwater harvesting would save up to 1.26 ML in a low rainfall year, up to 1.65 ML in a typical year and 1.97 ML in a high rainfall year. While this is a small contribution to Cryovac's total water needs, the company is conscious of its environmental responsibilities.

With a total building area of 44,610 square metres, the company still plans to initially install a rainwater recovery system with tanks at one main building. Once this infrastructure is in place, smaller collection systems can be added and water pumped to central tanks.

Cryovac is already involved in the Victorian Government's waterMAP program, and its increased focus on water use has resulted in additional savings.

Now, water baths are better balanced, and there is stronger water management in the barrier extrusion and services areas. Water meters are now on all services equipment, including boilers, cooling towers and cooling tower outlets. Information is fed to a building management system, and alarms alert staff about overflows or malfunctions.

Some toilets have been retrofitted to become waterless urinals, some water pressure has been reduced to sinks, and water from weekly fire pump tests now goes back into storage tanks.

"Overall, the company has done a lot better in the past year," Mr Poplawski said.

