

Cleaner Production Case Study

Cleaner production involves reducing the consumption of raw materials (including water and energy) and reducing the volume and toxicity of waste and other emissions.

Industry:

Shipping

Illawarra S & N Enterprise

Illawarra S & N Enterprise collects, reprocesses and resells timber used in shipping bulk cargo—cargo that does not get transported in shipping containers. Called 'dunnage', the timber is used to chock, support and distribute the weight of the cargo. Before Illawarra S & N Enterprise developed a business for doing this, the timber had previously not been recycled, and was dumped as waste.

Company characteristics

Illawarra S & N Enterprise was established in 2002 for the specific purpose of recycling dunnage. The company is located in Port Kembla, NSW, and is owned by Habibul Haque—the sole operator.

Environmental successes

This is one of a series of case studies featuring companies that participated in the Department of Environment and Conservation (NSW) \$5 million 'Profiting from Cleaner Production' – Industry Partnership Program.

NSW companies are discovering that cleaner production not only protects the environment but also reduces operating costs, streamlines processes, boosts profits and improves staff engagement and morale.

Recycled timber dunnage a win for the shipping industry

Illawarra S & N Enterprise has demonstrated that collecting dunnage from vessels and processing it so it is suitable for reuse on brake bulk cargo vessels is a viable business, offering both environmental and economic benefits to shipping agents.

Seeing enormous potential in dunnage recycling, and well aware of the environmental benefits it offered, Illawarra S & N Enterprise approached Austral Asia Line (AAL) Shipping Agencies and was granted approval to collect and use the dunnage generated from its general cargo liner services docked at Port Kembla.

Shipping and stevedoring agencies incorporate the cost of supplying new dunnage into every shipping load. The quantity of dunnage used per voyage varies. However, it would not be unusual for between 50–70 cubic metres of dunnage (approximately 5–6 trees) to be used for every brake bulk cargo vessel departing Australia. Metal strapping and cables are also used to secure cargo and are included in general waste dunnage material calculated for this project.

What did they do?

AAL Shipping Agencies provided their support for the idea, and the next step for Illawarra S & N Enterprise was promoting the reuse concept to the existing market, while at the same time exploring and developing new markets for a recycled dunnage product.

Once collected from AAL Shipping vessels at the Port Kembla multi-purpose wharf, the dunnage was processed. The timber had to be de-nailed, recut into suitable lengths, bundled and fumigated. Certified fumigation is an essential step in the recycling process because the timber has to meet strict international quarantine requirements.

Illawarra S & N Enterprise then resold the recycled dunnage back to AAL Shipping, at a significantly reduced price compared to the cost of buying new dunnage.

Why did they do it?

With many years experience in the merchant navy, the principal of Illawarra S & N Enterprise, Habibul Haque, saw first hand the amount of unnecessary waste generated during transportation of brake bulk cargo. Further, he became disillusioned and frustrated when he learned that disposing of this waste overboard in international waters was common practice. Jettisoned dunnage at sea is a hazard to marine life, particularly large mammals such as whales and dolphins, but also coral reefs and shoals. It can also severely damage vessels or spoil coastlines and beaches.

Illawarra S & N Enterprise saw an opportunity for reusing a viable resource rather than considering it as a waste product. The company estimated it could process the waste dunnage and resell it back to clients for approximately half the cost of supplying new dunnage.

What are the environmental gains

From August 2002 to October 2003 AAL Shipping purchased 486 cubic metres of recycled dunnage back from Illawarra S & N Enterprise. This equates to approximately 50 trees not having to be cut down to supply virgin dunnage.

Approximately 12 cubic metres of metal strapping, cables and wire has been recovered from vessels and recycled as scrap metal. This would normally be dumped at sea along with the dunnage.



What are the costs and savings?

Current market costs for virgin dunnage range from \$248 to \$285 (+ GST) per cubic metre. This compares to one standard price of \$190 per cubic metre for recycled dunnage supplied by Illawarra S & N Enterprise.

Using the example from AAL Shipping of 486 cubic metres for 14 months:

virgin softwood @ \$248/m ³	\$120,528 + GST
virgin hardwood @ \$285/m ³	\$138,510 + GST
recycled dunnage @ \$190/m ³	\$92,340 + GST

This demonstrates potential savings for AAL of between \$28,000 and \$46,000 for the 14-month trial period (not including GST).

Where to now?

There is now acknowledgement throughout the industry that dunnage recycling is a viable service that warrants ongoing industry support and recognition.

Indeed, during the trial it emerged that the demand for reused dunnage outweighed the available dunnage supplied by AAL vessels. Alternative dunnage sources need to be identified and secured from across the broad shipping, freight forwarding and stevedoring industry.

Industry acceptance

“As a result of the Illawarra S & N Enterprise dunnage recycling program, AAL Shipping has noted an obvious environmental advantage. We will continue to use Illawarra S & N Enterprise recycled dunnage and have taken additional steps to implement similar recycling methods in Hobart.”

*Tanya Britton
Regional Operations Manager
Australia/PNG
AAL Shipping Agencies*

‘Dunnage’ is used to chock, support and distribute the weight of bulk cargo on merchant ships. Between 50–70 cubic metres of dunnage (approximately 5–6 trees) is used for every bulk cargo vessel departing Australia. Illawarra S & N Enterprise estimated it could process the waste dunnage and resell it back to clients for approximately half the cost of supplying new dunnage.

More information

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