

A lot more than hot air

What's 98 per cent pure air but a real handful in the waste stream? Sydney Markets has found the answer to a bulky problem, reports Garth Lamb.

Expanded plastic foams such as polystyrene and styrofoam (collectively known as EPS) are widely used for packaging and protecting sensitive goods. However, only two per cent of the material is actually plastic, with the other 98 per cent being air – meaning the material takes up a whole lot of space in a bin, even though it weighs next to nothing.

Sydney Markets Limited, the company behind iconic institutions including Paddy's Markets and the Sydney Growers Market, has now implemented a system to reduce the costs and impacts of its waste EPS. After trialling different systems it bought a \$40,000 unit that heats and compresses material, reducing volumes by 90 times and producing an ingot of material suitable for recycling.

Environment manager Con Kapellos says in the past six months the site generated about 25 tonnes of EPS waste. While that is not a large portion of the waste stream by weight, the untreated material would take up 7,000m³ – the equivalent of about 1,170 average 6m³ skip bins.

"Basically we're averaging about one tonne a week, and we've put on extra staff to actually go around collecting [EPS] out of the waste stream," explains Kapellos.

EPS is now transported to the company's purpose-built Green Point recycling facility where the compression unit is run 3-4 times a week. Material is fed into a small hopper where it is cut into manageable pieces. It is then heated as pressure is applied, with the final product coming out "like a sausage of plasticine" and at a temperature that can be comfortably handled by staff.

The ingots of compressed EPS are packed into 400-500kg bags (similar to wool packs) and taken off-site, eventually to be reused in products such as picture frames and building products.

The efforts to tackle EPS come after



Foam boxes are volume reduced by 90 times to recyclable ingots.

successful programs to better manage bigger waste streams, including organics, have boosted the company's overall resource recovery rate from 15 per cent in 2005 to 55 per cent in 2008. It is now introducing programs to improve management of smaller waste streams, including plastic film wrap off pallets – it is baling some 500-750kg of this a month.

Last year, Sydney Markets won the inaugural sustainability and environment award category at the World Union of Wholesale Markets in Denmark. It has also been recognised under the NSW Department of Environment and Climate Change's Sustainability Advantage program.

No-brainer decision

Sydney Markets trialled two systems for managing EPS waste but found the unit that relied only on compression (without heating material) was much less effective,

reducing volume by only 40 times. That system also had more problems with contaminants in the material, such as left over food waste, and produced more dust. Kapellos says the two systems cost the same, making it a no-brainer.

It purchased the melt down machine in June through IS Recycling and has entered a two-year agreement with the company to sell back the end product. Kapellos calculates the payback will be 2-2.5 years, an easy sell to the board.

IS Recycling manager MK Park told WME his company generally buys back processed material for \$300-500/tonne, depending on quality, and exports it for reprocessing, with about 90 per cent currently destined for China and the rest South Korea.

Park started his company two years back and in the last year processed 60,000m³ of EPS. Next year, he says it is on track to process 100,000m³, and he aims to

install at least 10 new recycling machines at high-volume generators, twice the current number.

The SH-150S EPS recycling system installed at Sydney Markets has a footprint of 1.8 x 1.5m and can process 100-130kg of EPS per hour, but IS Recycling also has a range of smaller South Korean machines.

Clean EPS can also be disposed of free at the company's headquarters in Smithfield, Sydney. The company charges a negotiable fee to process material that is wet and dirty (such as with glue or food contamination) and will also pick up material for a fee.

But as the Sydney Market's experience shows, sites generating a significant volume of EPS should consider purchasing their own unit; transforming a costly waste into a revenue stream is one of the sweetest environmental tricks of them all.

More at www.is-recycling.com