

waste

MANAGEMENT REVIEW

JUNE/JULY 2016



No gambling on better recycling

**Jonathan Wood
shares Crown Resorts'
sustainability story**

FEATURES

- Developing software for future waste services
- Apple puts product stewardship into practice
- Paintback scheme plans
- Turning PET bottles into food trays
- Conference reports

REPORTS

- Waste Management In Action expo round-up
- TIC Group's Melbourne mattress recycling plant
- MBA Polymers latest solution to plastics recycling
- Keeping a fleet on the road
- A review of EPA Victoria's draft guidelines

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COVER STORY 14

NO GAMBLING ON BETTER RECYCLING

Crown is Melbourne's largest single site employer, with more than 9,000 staff and attracting around 20 million guests a year. Its recently-revamped employee and contractor recycling education program has seen a marked improvement in recycling rates across the site, while additional initiatives have further reduced waste to landfill.

"THE BOARD'S OBJECTIVE IS TO PLAY A LEADERSHIP ROLE IN ENVIRONMENTAL SUSTAINABILITY ACROSS THE ENTERTAINMENT AND HOSPITALITY INDUSTRY, AND FROM A WASTE MANAGEMENT POINT OF VIEW, WE'RE PUSHING THAT EXTREMELY HARD."

Jonathan Wood
Group Manager - Sustainability, Crown Resorts

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From the Editor New methods need new markets

THE LAST FEW WEEKS SINCE OUR LAST EDITION have been extremely busy for those working in our industry, with a number of high profile conferences, shows and seminars having taken place.

During these events, I have spent time with leaders from sectors including tyre recycling, energy from waste and organics recycling, and two themes have emerged.

Firstly, all sectors of the industry are ready for the next phase of resource recovery or added value waste disposal to happen. Suppliers have invested in technology and proven its capabilities for repurposing a variety of waste streams.

The frustration for them is persuading organisations to use these viable new methods instead of the traditional routes of landfilling or straightforward waste stream separation at materials recovery facilities, where products are baled and commonly shipped out of the country.

The second theme is the importance of market development – finding a customer to buy the recycled or processed recovered products for which there is a commercial use.

Representatives from several manufacturers and industry organisations have spoken about having equipment or companies ready to process recovered waste streams. However, their potential customers or members are having to overcome the lack of retail channels or negative preconceptions for selling on the processed products in their new forms (for example, composts or rubber matting.)

It was heartening, then, to hear the story of Dale Smith. He and his wife, Helen, recently commissioned a brand new plastics recycling plant, aided by purpose-built, cutting-edge machinery, strong supply of recycled PET bottles and a customer for the processed PET flake. (See page 28.)

Our 'International' feature this time shows the potential for success when recyclers forge strong partnerships with recovered materials providers and have an end market for the new product. (Read about MBA Polymers on page 43.)

Given the inspirational stories shared in this magazine and on recent conference platforms, let's hope we hear about more of these projects in Australia during the year ahead.

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Waste Management Review

waste

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News in brief

FEATURES

Crown Resorts is Melbourne's largest single site employer, with 9,500 employees there and a further 4,000 in Perth. The company has a sustained track record in implementing initiatives to reduce its environmental impact.

Group Manager – Sustainability Jonathan Wood says Crown's Board is committed to playing a leadership role in environmental sustainability across the entertainment and hospitality industry by focusing on three key areas: energy efficiency, water conservation and life-cycle management.

Crown has improved its life cycle management performance over the last five years through communications and education activities for employees and

contractors, as well as introducing new technology and processes to cut waste generation and increase diversion from landfill.

One particular program has led to a leap in recycling rates over two years. After seeing recycling rates drop to 26.2 per cent for FY2013, Jonathan enlisted the help of an educational games provider to design an online game-based training module to teach staff and contractors about recycling at Crown.

Supported by additional communications activities and clearly signposted recycling infrastructure across the business, for FY2015 more than 62 per cent of waste generated by Crown was recycled, with 6,605 tonnes diverted from landfill.

See page 14.

Terry Daley is continually developing his online "software as a service" business to underpin Australia's evolving waste management landscape.

Through its Wastedge.com product, ASP software offers integrated Google mapping, route optimisation and mobile software apps that support the operations of a wide variety of waste businesses.

Most recently, Wastedge recently expanded its range of mobile field service apps, with a host of benefits for business operators and their drivers. Using apps through mobile devices in trucks allows firms to operate more efficiently, giving them the flexibility to add or change jobs while drivers are out in the field.

Mobile apps also facilitate the reporting of site problems, allowing drivers to attach pictures of blocked access entries, damaged bins or hazards, as well as highlight to drivers site-specific risks flagged in the system.

Terry says his company sees itself as playing an adviser role in the industry, using conference and exhibition platforms as way to share with councils and suppliers the details of emerging technologies and how they can benefit their operations.

See page 20.



Jonathan Wood, the Group Manager – Sustainability at Crown Resorts.



One of the Wastedge self-service booking apps on a mobile phone.



One of the Apple Liam recycling machine robots.

Apple is known for its innovation and new launches, but its recent ones were good news for the environment.

At the end of March, Apple bucked its technology trend when it launched 'Liam'.

Instead of being a new mobile phone, computer or wearable gadget, Liam is a line of robots with 29 independent robotic arms at various process stations, using screwdrivers, drills and suction cups, that can deconstruct an iPhone 6S every 11 seconds to recover its high-quality components for reuse or recycling.

Liam is the latest addition to Apple's existing extensive suite of sustainability initiatives. These include its 'Renew' program, where consumers can recycle their unwanted device at any Apple store or through an online service.

To share its extensive sustainability story, Apple also launched a new Environment online portal – www.apple.com/au/environment – in April.

See page 24.

On Friday 29 April, Federal Environment Minister Greg Hunt officially inaugurated Paintback – the country's first unified, national product stewardship scheme aimed at diverting paint and its packaging from landfill.

This world first program offers professional and home decorators

an easy, environmentally-friendly way to dispose of unwanted paint and packaging. The organisation's goal is to divert more than 45,000 tonnes of paint and its packaging from landfill over the next five years.

A few weeks on from the launch, Chief Executive of Paintback Ltd Karen Gomez says the next steps involve a number of communication activities to publicise the scheme, including rolling out the "Now you can!" awareness campaign.

The company has also enlisted a consultancy to look into technologies for repurposing the waste paint and its packaging.

Paintback aims to have 70 paint collection points operating within two years.

See page 26.



Helen and Dale Smith, directors of Australian Recycled Plastics.

Dale Smith recently opened the Australian Recycled Plastics in Narrabri, New South Wales. This is Australia's first facility to recycle PET bottles into a new washed, flaked product to use in food grade applications.

As Dale came from a farming and logistics background, he turned to Telford Smith Engineering to find and manufacture equipment suitable to produce the end product his client required.

After an extensive international search for the right machinery and several months to install, test and



Environment Minister Greg Hunt (centre) with two trade painters celebrating the launch of Paintback.

News in brief

adjust the equipment to meet Dale's requirements, the plant has been operating 20 a hours a day since September 2015, and 40 employees now work at the site. The new line has a total throughput of 2,500 kilograms per hour.

Dale is planning to streamline operation over the next two years have the plant running 24/7.

See page 28.

REPORTS

Equipment and fleet manufacturers leveraged a multi-sector opportunity to share their latest releases across industries at the first Waste Management In Action in Melbourne between 5 and 7 May.

A number of leading manufacturers and suppliers showed their new vehicles and machinery designed for the waste and recycling industry at the expo.

Volvo unveiled its new FE Euro 6

Dual Control 6x4 rear-air suspension waste truck in Australia for the first time on the first day of the show.

Iveco took the opportunity to display several of the latest ACCOs, the 4x2 being fitted with another recently-released technology, the Hiab Multilift Futura new generation skiploader.

Superior Pak brought a brand-new truck fitted out with its pedestrian detection system, which its engineers originally invented for Veolia.

Volvo Trucks also used the expo to launch its new 'Stop, Look, Wave' safety campaign to educate school children on the importance of communicating with road users.

Around 6500 visitors a day came through the gates to see displays from more than 400 exhibitors. The organisers are now starting work on the 2018 event.

See page 32.

TIC Group has recently opened its state-of-the-art mattress recycling plant in Tottenham, just outside Melbourne.

The company entered into a joint venture with a Dutch company for the technology, and then made substantial changes to make it suitable for processing Australian mattresses.

For a process that has traditionally been undertaken manually, TIC's new process offers improved workplace health and safety outcomes. The plant is currently processing 60 mattresses a hour and has the capacity to handle 450,000 a year.

Next on the agenda for TIC Group is to open a second plant by the end of 2016 in New South Wales, after receiving a grant under that state government's *Waste Less, Recycle More* program.

See page 40.



The entrance to the Waste Management In Action outdoor display area.



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News in brief

The MBA Polymers state-of-the-art plastics recycling facility in Austria.



MBA Polymers is a global leader in recycling plastics from complex, widely-available post-consumer waste streams, such as e-waste, end of life vehicles and, more recently, household mixed plastics waste. The company has the capacity to process over 150 million tonnes a year at its facilities in China, Austria and the UK.

This April, MBA Polymers announced it had opened the world's first commercial production line recovering polycarbonate (PC) with acrylonitrile-butadiene-styrene copolymer (ABS) plastic from shredded e-waste.

The new processing line at MBA's facility at Kematen, Austria, separates, purifies and compounds PC/ABS. This is used in an array of electronic products, including computers, laptops and mobile phones.

The company says that recovered PC/ABS is set to become integral to supply the burgeoning demand for sustainable materials in some of the world's largest manufacturing segments – automotive, electrical and consumer electronics.

See page 43.

Haulaway is a family-owned commercial waste management business that has been running for more than 30 years, supplying firms in the greater Melbourne area.

Over the years, Haulaway has adapted and grown to provide the services its customers want, meaning additional vehicles and equipment. More recently,

Managing Director Richard Hilbert has turned to Bucher Municipal to supply and service his fleet.

The relationship has supported Haulaway through the start of a new organics collection contract, and is helping it meet compliance and certification requirements.

See page 46.

The TIC Group's mattress recycling plant in Tottenham, Victoria.



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INDUSTRY-FIRST EVENT SHARES NATURAL DISASTERS KNOWLEDGE

Tackling waste management and resource recovery following natural disasters was the theme of the newest Waste Management Association of Australia (WMAA) industry event.

The inaugural WasteNSW 2016 Natural Disasters, Risk Management Conference was held in late April at Crowne Plaza, Hunter Valley.

The program helped informed waste industry managers who are often called upon to lead a clean-up response following a natural disaster event common to Australia, such as a bush fire, cyclone or flood.

Delegates were brought up to date on the latest thinking and processes for managing the rising environmental risks, protecting assets, minimising disruptions to operations, and best practice for handling the increased volumes of waste created by these natural events.

Among the prominent international and Australian experts WMAA assembled to present their knowledge were Anna Bligh, former Premier of Queensland; Dr Charlotte Brown, Senior Research Fellow from Resilience Organisations New Zealand; and Gavin Tunstall, Disaster Recovery, Suez.

A workshop on "Natural Disasters

and Environmental Impairment Liability" was held on the event's second day, featuring experts from Liberty International Underwriters, NSW EPA, and Baker and McKenzie.

Highlights of the event included:
– insights from former Queensland Premier Anna Bligh on what transpired behind the scenes during the Queensland floods;
– how the Commonwealth Government can help in co-ordinating local relief efforts and how the waste sector can tap into available funding from Tony Pearce;
– an overview of the pre-emptive work that local councils can undertake in advance of an event occurring to minimise the impact and improve the time to recovery by Gavin Tunstall.

This was also the first WMAA Conference to have its own event app to provide delegate with the conference program and session details.

"The conference provided delegates with firsthand knowledge on what needs to be done in managing natural disasters that are occurring with increasing frequency and ferocity," said WMAA Chief Executive Martin Tolar. "While each event is unique, there are lessons that can be learned that can be applied to a multitude of situations."

Former Queensland Premier Anna Bligh speaking at WMAA's Hunter Valley event.



News in brief

RECORD TURN-OUT FOR COFFS CONFERENCE MILESTONE

Waste 2016 attracted a record 575 attendees to celebrate 20 years of the Coffs Harbour Conference.

Delegates travelled to the Opal Cove Resort from all across Australia and overseas for the three-day event dedicated to informing those working in the waste industry and helping them build contacts.

This year's renewal started with an outdoor networking hour and welcome reception, sponsored by Hitachi Zosen Inova.

On the Wednesday morning, the conference proper opened, with former children's TV presenter and current City of Gold Coast councillor, Bob La Castra, acting as master of ceremonies, and Mayor of Coffs Harbour Councillor, Denise Knight, providing an entertaining welcome address about diverting her husband from tip shops.

Waste avoidance and resource recovery was the theme of Waste 2016, with an extensive number of expert speakers, panel sessions and workshops covering these topics.

Keynote speeches

On the opening day, Paul Frith, Director of UK-based Frith Resource Management, gave the first keynote address. His presentation focused on how the UK has been trying to incorporate circular economy principles during a time of funding cuts across municipal waste services.

Ahead of the announcement confirming details of the new container deposit scheme for New South Wales, Steve Beaman, Executive Director Waste and Resource Recovery for the NSW EPA gave the next keynote address. His session provided insights into how policy, regulatory reform, funding and technology work together to form a waste eco system, into

which day-to-day waste management operations interact.

The last keynote was from Managing Director of MRA Consulting Group, Mike Ritchie. His presentation review how waste management has evolved over the last 20 years, taking examples and data use from his company's "State of Waste" reports the most recent of which was published in April.

On day two, the first keynote was delivered by Amar Rathore of the Clean Energy Regulator. As the recent Emissions Reduction Fund auction results were imminent, his presentation on "Seeing the opportunities in abatement" was particularly timely.

The need for education and continuing professional development for the industry is often discussed, therefore, the second keynote was particularly popular. Southern Cross University's Amanda Reichelt-Brushett gave details on its new degree course on waste management and resource recovery.



Cutting the anniversary cake (left to right) are Impact Enviro's Amanda Fletcher, Connie Button, Greg Freeman, Dawn Hallinan and Shannon Larkin.

Outside of the keynotes, the conference program was split into separate panel discussion sessions and six topic streams to meet the information needs of the varied backgrounds of industry delegates. The streams incorporated talks covering areas such as tenders and contracts, container deposit schemes and planning and infrastructure.

When it came to the conference's social events, the highlight was the ever-popular themed conference dinner. Scores of delegates embraced the theme to wear costumes inspired by the 1920s and *The Great Gatsby*.

The dinner also saw a team of organisers from Impact Environmental mark the 20th anniversary of the first conference by cutting a special cake.

"The Waste 2016 conference was a highlight for me after 20 years of organising the event," said Greg Freeman, Conference Convenor. "It has changed significantly over the years in content, delegate and exhibitor profile, however it has managed to maintain its 'feel' as a professional and friendly event.

"If conferences have personalities then Coffs has matured to be an event that loves to learn, connect with others and have a good time."

The team is now working on plans for the 2017 event.

Paul Frith, Director of UK-based Frith Resource Management delivering his keynote address.



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NO GAMBLING ON RECYCLING SUCCESS

CROWN RESORTS GROUP MANAGER – SUSTAINABILITY JONATHAN WOOD SAYS INCREASING RECYCLING RATES IS TIED INTO ITS ONGOING ENGAGEMENT AND EDUCATION STRATEGIES WITH EMPLOYEES AND CONTRACTORS.

After more than five years with Crown Resorts, Group Manager – Sustainability Jonathan Wood can reflect with great satisfaction on what he and his colleagues have achieved to embed responsible waste management initiatives across the business.

It also marks a successful stage in a career for Jonathan overseeing improvement in sustainability across

a business with multiple facets that welcomes 20 million visitors a year to its Melbourne site alone.

Jonathan began his career in 2003 as a Mechanical Engineer and Ecologically Sustainable Development (ESD) Consultant in Melbourne. He relocated to London in 2007 to join a leading sustainability engineering consultancy.

After gaining valuable experience

in both buildings and operations sustainability, in 2010 Jonathan returned to Australia to join Crown Melbourne as Sustainability and Environment Manager. His areas of responsibility have evolved from energy and water issues on premises to include waste, procurement and staff education programs. He now shares the knowledge gained during his career with his peers.

“I’m part of a corporate environmental management group, made up of sustainability managers from large organisations, that meets bimonthly to discuss projects and leverage off each other’s successes and lessons learned,” says Jonathan. He also attends Metropolitan Waste & Resource Recovery Group (MWRRG) and Sustainability Victoria seminars, to both gain insights from experts and speaking at them to impart his knowledge.

Crown Resorts has long been investing in, innovating and implementing initiatives aimed at reducing its environmental impact without compromising the comfort or enjoyment of its guests.

“The Board’s objective is to play a leadership role in environmental sustainability across the entertainment and hospitality industry, and certainly from a waste management point of view, we’re pushing that extremely hard,” Jonathan states.

The sustainability commitment focuses on three key pillars: energy efficiency, water conservation and life-cycle management. In terms of the latter, Crown aims to deliver programs to reduce its environmental footprint by raising awareness among employees, customers, contractors and the community, as well as introducing new technology and processes to reduce waste generation and increase recycling.

Education and engagement with employees and contractors about recycling has been a strong focus for Crown for the past two years. The attention to and investment in this area has yielded impressive outcomes.

Recycling education for employees and contractors

In February 2014, Crown was recording recycling rates at 23 per cent for the month. This could be attributed



A Crown employee takes away product for recycling back of house in Melbourne.

to several factors, but the main issue was the lack of understanding among staff and contractors.

“Employees used to be trained about waste management through a five-minute presentation on their second day of induction, and there was no formal training for contractors,” explains Jonathan.

Crown employs 9,500 people in Melbourne, 4,000 in Perth, and many more contractors, so bringing them all on board with consistent recycling activity is challenging. Jonathan judged that to boost recycling and handle waste streams properly employees needed thorough and engaging training to absorb the message.

“The biggest challenge in the hospitality business is staff turnover, so we needed a tool to fit in with regular inductions and to reinforce the message of what’s normal at Crown,” says Jonathan.

His team approached Inspire to create an online game-based training module designed to be relevant to four different departments: food and beverage, hotels, cleaning and all other staff and contractors.

The game sees different types of rubbish falling from the sky for the employee to place in the correct bin.

“The induction software incorporates the latest in interactivity and behavioural change concepts to ensure participants understand the messages and get the most benefit,” says Jonathan. “I couldn’t believe a learning game about waste management like this didn’t exist before two years ago.”

The program won the Gold Award for Best eLearning Design at the annual LearnX Awards in June 2015.

Jonathan says rolling out the online game tutorials has been one of Crown’s biggest sustainability success stories.

“The online training program, as well as the complementary schemes around that, has been one of the biggest contributors to the increase in recycling around the business,” he says.

“There’s only so much you can absorb in a short period of time, so it needs to have impact. The program isn’t very wordy. You don’t need a good grasp of English to get it, which is hugely helpful to some staff. It’s image based and fun. I think it works because it’s different.”

Crown introduced the new environmental sustainability online training module for all employees and contractors working at the Melbourne site in late 2014 and it was rolled

out to the Perth site during 2015 and early 2016.

Maintaining consistency and thoroughness of message has made the online program important to Crown.

“Before this online program was available, typically it was up to individual department managers and induction personnel to tell people what to do around waste management,” explains Jonathan. “This tool allows everyone to receive the same message.”

More importantly, when the system requires an update, it is immediately added to the online program, so the next time an employee logs on to do the training (they must complete the training every two years) the updated information is there.

The training is supported by a

about Crown’s environmental programs through a range of channels, including dedicated noticeboards, information screens around the premises, weekly employee bulletins, and its Environmental Sustainability intranet site, which highlights Crown’s recent activities, as well as educating employees about how to improve their environmental performance at work and at home.

Crown Melbourne’s Eco-Shoots team, made up of employee volunteers, was formed in 2011 and continues to conduct monthly environmental awareness campaigns that encourage employees to reduce, re-use and recycle.

In addition, Crown runs a biannual survey to obtain feedback directly from

waste management, whereas they wouldn’t all work with energy, water and procurement,” says Jonathan. “So it’s the most tangible initiative we have when it comes to environmental sustainability.”

Environmental planning and delivery

Crown’s overall environmental strategy is underpinned by recycling infrastructure and the commitment of engaged employees and contractors across the business.

Alongside the General Manager – Property Services and the Chief Operating Officers, Jonathan assists with Crown’s waste management programs, which are managed by the Cleaning Environmental Services (CES) department. Jonathan says the work of CES Manager Paul Humphries and CES Assistant Manager Jeff Niemski is critical to the success of the recycling systems and improved waste management outcomes for Crown.

When it comes to planning and implementing its recycling and waste programs, Jonathan and the CES department work with operational representatives from each department and Crown’s waste contractors to maximise its existing recycling streams.

Since joining Crown in 2010, Jonathan has overseen strategies that have achieved marked success in improving diversion of materials from landfill and improving environmental outcomes.

The 2009 Crown Sustainability Report states at that point more than 30 per cent of Crown Melbourne’s waste was being recycled via composting, cardboard and plastics recycling. More than 600 tonnes of food waste was being sent for composting or alternative treatment thanks to a new waste separation system in the kitchens and restaurants. In addition, during the upgrade of the Crown Towers hotel, 80 per cent of



Jonathan Wood speaks to one of the recycling machine operators who works back of house at Crown Melbourne.

prevalence of highly visual messaging and reminders to employees to do the right thing across the premises.

Clearly signposted bins for separate waste streams are everywhere across the business, from general waste bins and recycling boxes in the offices to clearly marked bins for food scraps and recyclables in the staff canteens, and then numerous bins and recycling equipment back of house.

Employees and contractors learn

employees about waste management strategies and suggestions for improvements.

The Sustainability team also links in with Crown’s Internal Communications team, which has sophisticated channels in place to share important new updates about sustainability matters instantly to everyone, including a weekly newsletter and online channels.

“Everyone at Crown takes part in

construction and demolition waste was recycled.

By June 2011, Crown's recycling rates stood at 31.4 per cent, but then dropped to 26.2 per cent for FY2013 before the introduction of the online training module and other infrastructure changes.

Fast forward to FY2015, and over 62 per cent of waste generated by Crown was recycled, that's 6,605 tonnes diverted from landfill. Of that amount, 31.7 per cent was commingled recyclables and 27.9 per cent was organics, some 1,843 tonnes. Crown has achieved a 200 per cent increase in recycling over four years.

"We have one full-time employee, Jeff Niemski, dedicated to recycling. He helps everyone in the business to meet our recycling objectives, such as talking to chefs, looking in the bins and giving them advice."



Getting to that point has involved working in key partnerships with associations, government agencies, suppliers and service providers.

"Since I came on board, we have worked with the likes of Sustainability Victoria, the MWRRG, Trevor

Thornton from Waste Audit, and the majority of our contractors have come in to help us with our plans," explains Jonathan.

At the beginning, he says the work with these parties was mainly systems focused. This involved gathering data, seeing where the efforts needed to be directed, putting systems in place to realise those efforts, such as installing the right bins and signage, and bringing in appropriate contractors. Every six months, they also engage an external consultant to conduct a comprehensive waste audit to track performance and identify further areas for improvement.

Jonathan hasn't shied from introducing unusual initiatives that fit in with responsible waste management and corporate social responsibility principles. In 2014, Crown joined an Australia-first initiative to recycle unused soap from hotel rooms through the SoapAID program.

"After collection, the soap is processed and redistributed to communities that lack adequate sanitation," explains Jonathan.

To date, Crown has provided 853 kilograms of soap to the charity, part of the 6 tonnes collected from Australia so far.

When it comes to traditional recycling, Crown's contractors include Veolia (commingled, cardboard, polystyrene, hard and soft plastics),



A CROWN SUSTAINABILITY PROJECT - COOKING OIL MANAGEMENT

In late 2013, Crown assessed the whole-of-life cycle management of its use of cooking oil.

Crown identified that if it set up a bulk oil delivery and recovery centre on the Melbourne property in partnership with a supplier, it would be able to:

- Eliminate waste by removing heavy drums and bags of oil.
- Improve OH&S across the business by removing unnecessary lifting and slippery surfaces.
- Reduce the impact on the environment by removing tins and cubes that otherwise may have ended up in landfill, as well as recycling the used oil, which could be converted into biodiesel or stockfeed.

Crown awarded the management of oil (delivery to site, delivery to outlets, filtration and removal) to Cookers, as they were well equipped to meet all of the company's objectives.

Since Cookers started working in the business, Crown has seen a 20 per cent reduction in the amount of oil consumed due to improved visibility and management of the oil life. Furthermore, all oil is taken offsite, treated and then refined for use as biodiesel.

Southern Cross Recycling (wood, metal, uniforms and linen), CMA Recycling for batteries, fluorescent tubes and lamps and Close the Loop for mobile phones. Its food waste is collected daily and sent to Veolia's Natural Recovery Systems Centre in Dandenong to be converted to fertiliser, which is then used by Gippsland Water.

In 2011, under Jonathan's direction, Crown became a member of the Australian Packaging Covenant (APC). He says this was down to the company's focus on lifecycle management, not just waste. The membership provided a framework for engaging suppliers on waste management matters beyond recycling.



Loading used printer consumables for recycling.

“While Crown has made significant advancements in our onsite recycling systems and education programs surrounding these, there is significant opportunity to work with our suppliers in reducing packaging waste,” says Jonathan. “The APC is a good place to start.”

Among several clear objectives under that agreement, Crown is aiming to find ways to work with external parties to improve the design and recycling of the packaging it uses. It is also considering the feasibility of including take-back and recycling in supplier contracts.

How organisations and suppliers could help

With his experience in corporate sustainability top of mind, Jonathan refers to several ways government agencies and companies could help companies to achieve their responsible waste management goals. He says Crown took the onus in “filling gaps” to improve environmental outcomes, but not every business has the resources to do so.

“Sustainability Victoria and other agencies in this space need to not just focus on technology to improve recycling, but also how to engage staff,” Jonathan asserts. “Once you have the systems and equipment there for better waste management, unless people understand the importance of why to use it, nothing changes.”

Jonathan also calls out suppliers for lacking a proactive approach to help clients with their sustainability goals. He says he has rarely encountered suppliers who actively pursue engagement and collaboration on recycling projects with Crown.

“Just come in and get involved,” Jonathan urges. “The majority of our projects have been Crown instigated. We would like to see more suppliers and service providers take the

initiative when it comes to reducing our environmental impact from consumption of materials.”

When it comes to resources for sustainability initiatives, Jonathan says that Crown has funded all the programs and technology it has introduced. He would like to see more financial support for environmental programs across businesses, no matter the size.

“The majority of funding projects available for waste management initiatives are targeted towards SMEs,” he says. “Expansion of these programs to large organisations would see a significant improvement in overall recycling rates across the country.”

Upcoming initiatives

Crown is working hard to differentiate itself as an environmentally-friendly business, and continually considers additional initiatives to improve its performance in this area.

“We have been monitoring the progress in waste to energy technology, but we would need a suitably mature technology that converts general waste streams – not just food waste – to biogas before we would consider the next stage of investigation,” Jonathan says. “I’m always thinking about the next step, and my imagination doesn’t stop at crazy ideas.”

Nevertheless, Jonathan emphasises that Crown’s biggest challenge to date has been employee and contractor engagement, saying this remains the greatest area of opportunity for performance improvement.

“Our next step is to launch a refreshed employee waste education campaign aimed at increasing our recycling rates significantly,” adds Jonathan. “The details are to be finalised, but we hope to incorporate highly engaging, advanced behavioural change approaches to make recycling exciting and realise our goals.” ■

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Re-inventing waste business online processes

WITH ITS CONTINUALLY ADVANCING WASTEDGE.COM OFFERING, ASPSOFTWARE LEADS THE WAY IN INNOVATING SOFTWARE AND MOBILE APPS TO IMPROVE EFFICIENCY IN WASTE MANAGEMENT OPERATIONS.



Imagine receiving a text message to let you know the waste collection truck is approaching your business so you can put out the bins for the minimal time. Or what about a time when brokers, in Uber-esque fashion, send an e-tender on behalf of numerous small business for bids to collect 400 skip bins from within one city area enabled by an app?

For Terry Daley, Chief Executive of ASPSoftware, it's his business to plan the technology to make these imaginings a reality.

"Even 10 years ago, the idea of dynamic paperless run sheets, operated through an affordable mobile device, for drivers' skip drop-offs and collections seemed unlikely. Now it's standard for any modern waste management business running an efficient, customer-focused service," says Terry.

Terry has over 20 years' experience in waste systems design, implementation and consulting projects for councils and waste

"We see ourselves as having a role to play in the industry as a technology adviser, to let people know what apps and technology are emerging, and what we see as benefits to their business."

Terry Daley **Chief Executive of ASPSoftware**

companies of all sizes across Australia and New Zealand. Having forecast the emergence of hosted cloud and mobile apps early, the firm invested heavily to launch Wastedge.com four years ago.

This continually evolving cloud-based suite of "software as a service" offers integrated Google mapping, route optimisation and mobile software apps that support the operations of a wide variety of waste businesses. Wastedge has grown at 45 per cent a year over the past three years.

During this time, Terry says he and his team have noticed many technologies coming into waste services sector that have traditionally been used in courier and logistics operations. However, having an in-depth understanding of waste company requirements means Terry's developers created Wastedge.com to deal with this sector's specific challenges.

"We see ourselves as having a role to play in the industry as a technology adviser, to let people know what apps and technology are emerging, and what we see as benefits to their business," says Terry.

Over the past 12 months, Terry and his team have been tracking a number of trends in the areas of software appealing to the waste industry:

- driver adoption of mobile apps;
- automated excess-weight billing; and
- customer self-service web portals.

Mobile apps adoption

Wastedge recently expanded its range of mobile field service apps, with a host of benefits for business operators and their drivers.

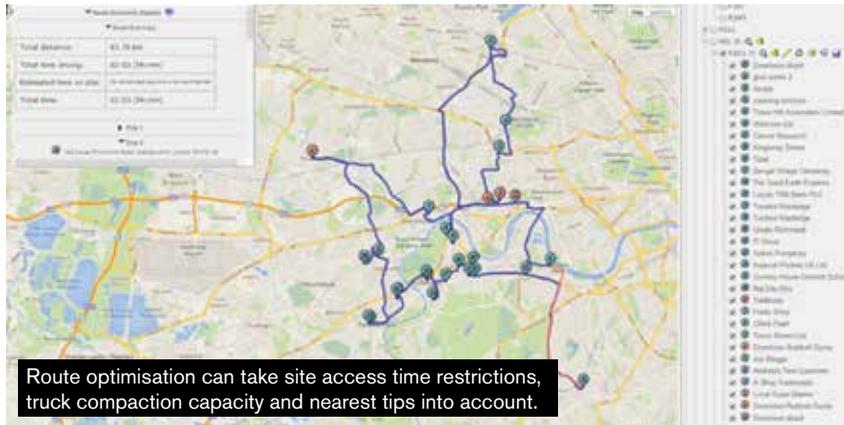
Providing mobile devices in trucks allows firms to operate more efficiently, giving them the flexibility to add or change jobs while drivers are out in the field. Pick-ups or delivery scheduling with rule-based dynamic optimising, such as across an area or on a collection route, can also semi-automate the allocation of jobs.

"Mobile order management and route optimising can save drivers up to an hour a day in travel time," says Terry. "For a waste business where margins are small, that's an extra hour of revenue each truck can earn without additional labour or fuel costs."

On the frontline of operations, even somewhat technophobic drivers find the touchscreen apps intuitive to learn and easy to use. Terry says clients are reporting less resistance from drivers in using these tools as they add value to their jobs, reduce paperwork,



Self-service booking apps on a mobile phone.



help them find new job locations and reduce travel time.

They give drivers a better communication channel to ensure their in-app vehicle safety defect checklists, vehicle repair or maintenance requests, and photos of any issues will be noted in the back-office.

Mobile apps can also make it easy to report site problems, as drivers have the ability to attach pictures of blocked access, damaged bins or hazards – as well allowing supervisors to alert them to site-specific risks flagged in the system. This improves safety while reducing the potential for disputes.

“This system has so many defensive benefits for a company, in protecting their workforce and their reputation,” adds Terry.

From a practical perspective, typical consumer-grade mobile devices cost a fraction of older, industrial-grade hardware, yet are tough enough to survive the front line rigours of a waste business, providing a value-for-money solution.

“This gives management better visibility of their operations, as GPS data shows where the trucks have been and where they are now,” says Terry.

GPS telemetry data also enables companies to identify stops taking longer than average (a possible driver

safety or performance issue) and provide better data to analyse and isolate unproductive or inefficient sites.

On-board weighing integration

Terry says integrating on-board weighing systems with tablet apps is in high demand, as trucks become an automated data capture and communications hub.

“As waste collectors discover that it’s now easy to set standard weights per waste type bin size or per specific customer site, the related disposal costs of the excess weight will be passed on the appropriate customer rather than being spread across all customers in the front-lift or rear-lift run,” he explains.

He also reports that side-lift weighing matched to radio frequency identification (RFID) tag reading technology has also evolved, with several systems available on the market.

“We have recently done hardware integrations with six on-board weighing providers as this technology matures,” Terry adds.

Web portals enabling self-service

Interactive web portals have become hugely widespread over the last few years, and the waste industry has not been immune to this trend.

Terry says they offer waste

collection organisations a win-win solution: a better, 24/7 service but without the additional manpower.

“They enable your customers to do the data entry for you when requesting service changes or new bookings,” he states. They also provide customers a new communications channel that is available over extended hours, with no staffing required, and they’re conveniently available from anywhere, on any device.

“If you’re a council, residents expect you to have such a self-service web service or an app available at their fingertips! They don’t want to wait in a phone queue, or be forced to call during council hours to book a hard-waste collection or report an issue,” adds Terry.

Web portals extend your business communications network and two-way data flow out to your customers – allowing them to view and drill down or extract their own transaction data or green recycling waste diversion KPI charts.

Early adopter experience

Melbourne-based Premier Waste, which has a fleet of more than 30 vehicles, was an early adopter of Wastedge’s mobile apps, on-board weighing and web portal access.

“Use of iPads as electronic run-sheets has delivered a range of tangible

day-to-day benefits, including reducing paperwork, and taking away manual entry of data saves time and avoids mistakes,” says General Manager Chad Holland. “Integrated on-board weighing also gives us a significant increase in run profitability.”

Other commercial contractors have been able to offer multiple councils a self-service web portal or last minute requests upload facility, such that kerbside hard-goods collection requests can be auto-allocated by route map area, route optimised and dispatched to drivers for when they login the next morning. Collection request statuses or photos of issues can be viewed by the respective council during the working day.

What's coming next?

Terry predicts emerging innovations will continue to provide the opportunity to rethink and re-invent traditional business process paths.

“It’s important to consider how new technology could improve the way we do things,” he says, “and also to look out for the technology that isn’t quite there yet.”

The Wastedge team believes there will be a proliferation of data from trucks, with vehicles becoming mobile WiFi hubs. Businesses will receive more digital data to manage and analyse from sources including on-board weighing systems, RFID bin tags, camera data feeds, and driver safety and alert systems.

Next, Terry anticipates what he calls the “Uber-isation of waste collections”.

“Will brokers or new contractor collaboratives use technology, such as web portals, to introduce collection scheduling favouring local small firms and collaboration of waste ecology partners?” he asks.

His third prediction is based around



wearable data input devices, such as smart watches, sleeve-mounted smartphones or smart glasses, which are set to become cheaper and more popular. These would further help drivers to input information or receive help while they’re outside the vehicle.

“Voice-activated driver commands to access audio messages, or voice to text (such as SIRI) through a smart watch microphone reduce driver input, or pre-recorded voice instructions triggered by GPS can increase efficiency by replaying special directions at sites or route turn points,” Terry explains.

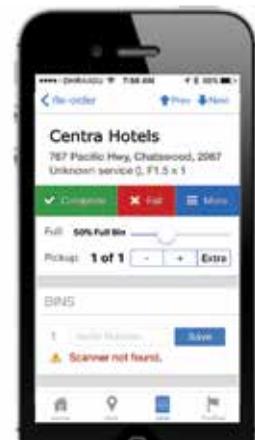
Despite the availability of these constantly-evolving mobile tools, which are becoming more affordable, Terry says that the main challenge is overcoming the resistance in some quarters of the industry to embracing new technology in their operations.

“We’re seeing an emerging new generation of younger business managers in family-run SMEs, who are eager to adopt high-tech gadgetry to help streamline processes. They are usually more passionate at managing, embracing and re-enforcing change in

their business,” reflects Terry.

He concludes that smaller firms are usually more active than their large competitors in chasing efficiency and productivity through introduction of affordable technology rather than relying on economy of scale.

“Many larger corporates and municipal organisations still persist with cumbersome applications that have long passed their use-by date,” says Terry, “But that will have to change if they are to meet customers and the community’s expectations.” ■



The Job Confirm app, which allows drivers to confirm or fail completion of a job, and to take photos and add notes in relation to a job.

A second bite at the Apple products

A SPOKESPERSON FROM APPLE TELLS *WASTE MANAGEMENT REVIEW* HOW IT IS DEMONSTRATING EXTENDED PRODUCER RESPONSIBILITY BY INNOVATING HOW IT RECOVERS RESOURCES FROM ITS OLD TECHNOLOGY.

This past March, Apple unveiled a new technology that took the public by surprise.

The public is used to the anticipation and fanfare associated with Apple new product launches, but this was completely different. Instead of launching a new gadget for consumers to buy, it shared news of its new technology designed to take it apart and recover the valuable resources inside.

Liam is a line of robots with 29 independent robotic arms at various process stations, using screwdrivers, drills and suction cups, that can deconstruct an iPhone 6S every 11 seconds to recover its high-quality components for reuse or recycling.

The text accompanying the YouTube video demonstrating the Liam recycling machine in action states its purpose:

“True innovation means considering what happens to a product at every stage of its life cycle. Liam disassembles your iPhone when it’s no longer functioning, so the materials inside can live on.”

The robot scans the phone to detect the parts and sets about removing them, piece by piece, in a safer, more efficient fashion than manual dismantling. It avoids personnel being affected by battery leakage and robots work in pairs, so if one is slowed down by a damaged or corroded part, the other can continue its task. Parts are vacuumed up tubes and dropped into buckets for repurposing.

The recovered elements include cobalt and lithium from the battery, gold and copper from the camera, and silver and platinum from the main

control board. This lessens Apple’s dependency on mining more of those valuable resources from the earth.

Liam was under development for almost three years, and was initially designed to recycle the iPhone 6S. However, Apple plans to modify and expand the system to handle different devices and recover more resources.

“It’s an experiment in recycling technology, and we hope this kind of thinking will inspire others,” says Apple in its latest environmental responsibility report.

Liam prototypes are currently operating in California, but Apple says it plans to open a deconstruction facility in Europe in the near future.

Commitment to the environment

Liam is the latest addition to Apple’s existing extensive suite of sustainability initiatives.

Information provided in the *Apple 2016 Environment Responsibility Report* emphasises its commitment to making sure all its waste streams created by its final assembly facilities and across its operations are reused, recycled, composted, or, when necessary, converted into energy.

The company acknowledges that is an aspirational objective that requires collaboration among multiple Apple teams, local governments, and speciality recyclers.

The Apple Renew program means



A snapshot of one of the Apple 'Liam' recycling machine robots.

that consumers can recycle their unwanted device at any Apple Store or online. They work with 160 verified, trusted external recyclers around the world to make sure the products are recycled responsibly, that no products are disposed of unsafely in developing countries, or otherwise made available for reuse.

Although it is not part of the Mobile Muster, Australia's mobile phone industry's product stewardship program, for recycling in this country its partners include sustainable reverse logistics specialist Infoactiv for computers and displays and Brightstar Australia for its newer iPhones.

Apple incentivises people to return their old devices by offering giftcards or discounts towards their next purchase.

“It's an experiment in recycling technology, and we hope this kind of thinking will inspire others.”

The consumer technology manufacturer is also working to meet the standards of UL – a global independent safety science company – which offers a validation program to support organisations' landfill diversion and zero waste to landfill claims.

Its facility in Cork, Ireland, was the first outside North America to receive UL's Zero Waste to Landfill validation in 2015, while this year its final assembly sites, Foxconn Guanlan and Foxconn Taiyuan, were the first to receive this validation in China.

“All our remaining iPhone and Apple Watch final assembly sites are on track to do the same before 2017,” the Apple spokesperson says. Most recently, all its stores across the globe have initiated zero waste programs.

Aside from waste and recycling programs, Apple is also involved in renewable energy, carbon footprint and emissions reduction, and sustainable sourcing initiatives. Bringing together all its main channels of work around environmental and product stewardship initiatives, Apple also made live its new Environment online portal – www.apple.com/au/environment – in April.

“Innovation is at the heart of everything we do at Apple, and that extends to our commitment to protecting the natural environment for the future,” states the 2016 *Environmental Responsibility Report*. “So we're constantly striving to find or invent solutions to important environmental challenges.” ■



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Painting in the product stewardship gap

A FEW WEEKS AFTER THE LAUNCH OF PAINTBACK – AUSTRALIA'S NEW SCHEME TO RECOVER WASTE PAINT AND ITS PACKAGING – WE LEARN MORE ABOUT THE COMPANY'S ACTIVITIES TO ROLL OUT THE PROGRAM.

An incredible race to the start line is how Karen Gomez describes the feeling when standing on stage to launch Paintback on 29 April.

“It was exhilarating. A lot of hard work from the Paintback team and the paint manufacturing companies got us to that point,” says Karen, Chief Executive of Paintback Limited, the company that will manage the scheme. “It was a relief for us to see the plan become reality.”

In front of a room full of industry and government stakeholders in Melbourne, Federal Environment Minister Greg Hunt officially inaugurated the first unified, national scheme aimed at diverting paint products from landfill.

Despite already being involved with the project for a year, and preparations having started back in 2013, when Karen delivered her opening speech, she described the launch of Paintback as the start – not the end – of the journey. For the CEO, the occasion

provided special professional and poignant moments.

“The professional was Minister Hunt’s impromptu invitation to two trade painters, Damien McRyan and Stephen Papdan, to the stage and he delivered a ripper of a speech from the heart,” Karen recalls. “The personal highlight was the surprise arrival of my partner, Phil Allan, who flew in from Canberra to be with me for that important day.”

How the scheme works

Paintback’s design is a world-first product stewardship program developed and implemented by the paint manufacturing sector.

Australians buy more than 100 million litres of paint each year but around 5 per cent is thrown away, making paint and its packaging a major contributor to landfill waste. Paintback aims to tackle the issue by offering professional and home decorators an easy, environmentally-friendly way to dispose of these items. The program

aims to divert more than 45,000 tonnes of these products from landfill over the next five years.

“We aim to offer a collection service to 85 per cent of the population within five years,” says Karen.

Paintback will set up about 70 paint-specific collection points over the next two years – starting with 12 in the state capitals through a partnership with Cleanaway. The environmental solutions company provides the expertise and significant national footprint to collect and treat the waste products. A further 15 locations are being targeted for mid-to-late 2016.

To fund the program, DuluxGroup, PPG Industries, Valspar, Haymes Paint and Resene – which together produce more than 90 per cent of all architectural and decorative paint sold in Australia – will add 15 cents a litre to the wholesale price of their products. Other manufacturers will also be invited to participate.

Progress and plans

Now the easy part of launching Paintback has been achieved, Karen and her team are working on the next stage of the journey.

Stage one of the roll-out started on 2 May and will see sites established in every state and territory before end of 2016. Stage two will move to major regional centres in 2017.

Karen says the goal is to open three sites a month on average, building its collection point network through Cleanaway’s national locations and municipal support.

“We are engaging with councils through a variety of ways and forums, including educational videos on social media,” explains Karen. “Word of mouth is also having a great impact, with all kinds of people – retailers, households and commercial painters – giving us suggestions from the grass-roots.”

The company is also undertaking a number of communication activities to publicise Paintback, as well as promoting its online educational media for consumers and professional painters to encourage them to use the scheme.

“Our ‘Now you can!’ awareness campaign will focus on advertising collection sites as we roll them out, and social media will play a central role,” Karen says. “We will also produce point of sale material for paint retail and trade outlets.”

The industry will also fund research to find better uses for unwanted paint. Uses for waste paints diverted from landfill include replacing fossil fuels in energy consumption, while the steel and plastic packaging can be recycled into new products.

“We have already engaged consultancy Humphries Scientific to undertake a global search of current technologies that may be in use or being developed,” adds Karen.

Just a few weeks into the program, and Karen says the signs of Paintback’s early impact are positive, with many queries from the trade sector.

“As there has not been a cost-effective and convenient service



Environment Minister Greg Hunt presents Pat Jones of Dulux Paints with a certificate, inducting the company as one of the industry founding members.

in place for them, there is a lot of interest. It is mostly about where sites are and where we will go to next,” Karen says. “It’s our biggest challenge to roll-out economically and give people a convenient service.”

More information about the scheme, details of current collection sites, and how councils can get involved is available from the Paintback website – www.paintback.com.au. ■



Paintback Limited Chief Executive Karen Gomez launching the scheme with two trade painters, Damien McRyan and Stephen Papdan.

Cottoning on to a recycling business

WHEN THE OWNER OF A LOGISTICS COMPANY, WITH NO EXPERIENCE OF RECYCLING, WANTED TO SET UP A PLASTICS RECYCLING PLANT, HE NEEDED EXPERT HELP AND A TOUR GUIDE. HE FOUND IT WITH TELFORD SMITH.



Helen and Dale Smith at their Australian Recycled Plastics plant in Narrabri, NSW.

It was a reverse logistics conundrum and curiosity that first led the owner of a family-run Australian haulage business to investigating the potential for plastics processing plant.

In 2013, Dale Smith, founder of Australian Recycled Plastics (ARP), contacted local machinery manufacturer Telford Smith Engineering about supplying a recycling line for mixed plastic bottles for his premises in north-west New South Wales.

Dale had bought the site in Narrabri three years ago when he and his wife, Helen, started thinking about a recycling plant. They also own a haulage firm, which transports about 30 per cent of Australia's cotton.

"We looked into the recycling business partly because 90 per cent of our trucks were delivering cotton to the capital cities and ports, and were

coming back empty as there was no product to bring back," explains Dale.

As the firm also transported waste material for other companies, Dale started to question what happened to that product and developed an interest in the recycling process.

"I learnt most waste plastics sent to materials recovery facilities are exported out of Australia, with a general mix of 40 per cent PET, 40 per cent HDPE and the other 20 per cent other plastics."

With refreshing frankness, Dale says at the start he and Helen didn't know exactly what they wanted to achieve, but they saw the potential "to do something" with processing recovered plastics.

Even before investing in the plant or deciding what it would process, Dale started to buy the 4/4/2 material. "I wanted to make sure there were

avenues there to get enough supply to run a plant," he says.

A chance encounter for equipment

At this stage, with neither previous recycling experience nor contacts, Dale started the search for a knowledgeable supplier. A chance encounter led to him working with Telford Smith Engineering (TSE).

"A friend, who was helping me find equipment, noticed a factory processing PVC pipe while working in Melbourne," Dale says. "He asked them about their equipment, which they said they had bought from Telford Smith."

It was a stroke of luck for Dale and Helen, as what they lacked in knowledge and technical ability, TSE made up for it. The firm has been running since 1927, has extensive experience in this field, and owns a manufacturing plant in China.

Dale contacted TSE's Managing Director, Steve Picone, about his plans.

"The requirement was for the supply, installation and commissioning of a complete plant for sorting size, size reduction and washing of mixed plastic bottles," Steve recalls.

The feedstock was going to be 350-kilogram bales of bottles made up of a 4/4/2 mix of PET/HDPE and mixed plastics.

Steve says that despite being a complex process, it is common for

pre-sorted PET bottles to be collected and processed through size reduction and wash plants to achieve bottle-to-industrial grade washing. That fitted Dale's initial aim to wash PET and HDPE bottles to a standard that allowed sale for industrial applications.

"That objective changed, however, when he saw an opportunity to sell washed flaked PET into more lucrative food applications, requiring the next level of technology," adds Steve.

The broker Dale used to buy the waste plastics had introduced him to a potential client for recycled PET— a UK-based company planning to open a factory in Melbourne to make plastic trays for packaging meat that keep the product fresher for longer.

"Once we secured a customer to buy the recycled product, a food grade PET, that determined the type of equipment

we needed," he says.

The pair then carried out extensive research for machinery that would deliver on the client's requirements.

"Steve said if we were serious about the project then we should visit some plants China," says Dale. A firm partnership was formed as Steve organised for Dale, Helen and their six-week-old son to fly to China, and then drove them around investigating what technology was on the market.

The equipment hunt tour began, as Dale and Steve undertook several research trips to recycling plants in China, German and Thailand, and even one in Melbourne. This first-hand experience formed the basis for the decision making process.

"Steve and his team are very knowledgeable," Dale states. "If they didn't know the answer to an equipment

query, they'd find out for us and then take us to see it in action."

It took around nine months to finalise what Dale needed, and he eventually placed the order in September 2013.

"As the investment was considerable, I advised Dale to buy the best equipment or have us build it for vital parts of the operation, and then we could source cheaper machines for the lower-risk elements," Steve adds. "When you need to deliver a certain specification, there are parts of a plant where you shouldn't take any risks."

Equipping the plant

The ARP plant comprises an extensive range of equipment TSE designed in Australia and manufactured at its factory in Ningbo, China, including the entire control system.

It features specialised equipment

The Australian Recycled Plastics plant runs over three distinct sections, using a wide range of equipment, as detailed below.

The input material is pressed 350-400kg bales of 4/4/2 PET/HDPE/other material.

The final outputs are:

- 1,000kg per hour PET flake
- 1,000kg per hour HDPE flake
- 500kg per hour other materials

Telford Smith also helped with the supply of a steam generator and water filtration system for the process. ARP uses rainwater collected from the premises for the process.

DE-BALING AND SORTING LINE

- De-baling – opening bales
- Sorting via trammel – separation of non plastic contaminants
- Label peeling – removal of labels from bottles
- Ballistic Separator – further separation of labels, paper, cardboard, caps, neck rings, stones, etc.
- Eddy Current separator – separation of aluminium cans
- Two-stage automatic sorting machines – automatic sorting of HDPE, PET and mixed plastics
- Manual sorting station
- Automatic metal detection
- Conveyors
- Control panel

PET SIZE REDUCTION & WASHING LINE

- Wash granulator
- Sink float separation tanks
- Air separators for dust and fines removal
- Dual hot wash system
- Mechanical dryers
- Automatic flake sorting
- Dual bagging station
- Control panel
- Master control panel with programmable logic controller and touchscreen

HDPE SIZE REDUCTION & WASHING LINE

- Parallel HDPE wash plant comprising: wash granulator, friction washer, sink float tank & mechanical dryer
- Dual bagging station
- Control panel

The bale opener with auger discharge.



The parallel HDPE wash plant.



The dual hot wash tanks.



designed or sourced from Europe, such as a Zerma wash granulators and Sesotech automatical bottle and flake sorting equipment to separate by colour or material type.

TSE also assisted in the supply of a steam generator and water filtration system for the process.

The plant incorporates three sections: de-baling and sorting, PET size reduction and washing, and HDPE washing. The line has a total throughput of 2,500 kilograms per hour. (See information box.)

TSE technical staff carried out the commissioning in China, then shipped the full plant to the Narrabri site in February 2014. Dale then used his own engineers for the installation.

“When it arrived it went together like a Swiss clock,” says Steve. “The highlight for Dale was that the entire plant comprising over 50 pieces of equipment could be controlled from a single PLC control system using touchscreen technology.”

Dale did the first trial run that November. His team then worked on modifications for almost 12 months to refine the system so that the product matched the client’s PET quality requirements.

“The basic machinery was all good, so most of modifications we made were to streamline process,” Dale says. “Steve’s team supplied all of the electrical control cabinets, and we did the wiring, plumbing and pumps.”

The plant has been operating 20 hours a day from September 2015, and 40 employees now work in the plant over three shifts.

Input and output of material

Dale sources the plastics from all over east coast of Australia – from Rockhampton to Victoria border, mainly from council material recovery facilities. In a time of low commodity prices, ARP has built a loyal supplier base.

“What we’ve been able to offer those MRFs is 12-month contracts to buy at a consistent price, whereas before they relied on the export market,” says Dale.

ARP has been supplying the Melbourne factory for about six months and this is likely to be the only client for PET at this stage, as its demands will exceed what the facility can currently produce.

Dale’s client for recovered HDPE is a manufacturer in Melbourne, which uses it to make eco-friendly decking and garden architecture. ARP re-bales any product not usable for its purposes and sends it to another company that makes plastic bars for reinforcing concrete.

“To our knowledge, there are no other suppliers offering plants that are simultaneously sorting and washing three different types of plastics while achieving a high level of washing for HDPE and food grade standards for PET,” Steve says. “The key benefit in being able to process mixed plastic bottles is the lower cost of raw material.”

For Dale, the entire process of researching, building and commissioning the plant has been rewarding.

“To actually achieve the goal of getting product to a level where it’s saleable to a good customer, and it’s actually being used to pack food sold in our local supermarket trays,” Dale says. “Having gone through this experience, I’d say Telford Smith are very good at what they do. Steve and his team are determined in finding solutions to problems and at sourcing the right equipment.

“I’m sure at points when we were working with Steve that he was living in hope that we’d give him an order, but he couldn’t have been more helpful. Nothing was any trouble, and for every bit of equipment we bought we visited where it was built and where it was operating, so we saw what it did.”

For Steve, he is delighted that after such a long process, TSE maintained such a “fantastic” relationship between customer and supplier, and that they were able to deliver Australia’s second only PET washing plant, the other being Visy’s.

“I’m really proud that Dale is getting a successful result,” Steve says, “and I’m pleased that we were able to provide a good outcome within a realistic budget.”

Dale’s plan is to streamline processes at the plant over the next two years and have it running 24/7, and have maintenance under control with as little downtime as possible. ■

waste

MANAGEMENT REVIEW

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AUSTRALIA'S SPECIALIST WASTE MANAGEMENT MAGAZINE

Waste Management In Action

a show of industry firsts



The entry to the waste Management In Action outdoor displays.

Equipment and fleet manufacturers leveraged the opportunity to share their latest releases across several industries at the first Waste Management In Action expo in Melbourne on 5 to 7 May.

The new expo followed the organisers' decision to redesign the International Truck, Trailer & Equipment Show after the 2014 instalment to also incorporate a live Test Track and a dedicated Roads and Civil Works component.

"Having the opportunity to experience equipment live and in action on the Test Track was a highlight for many visitors," says Show Director Simon Coburn, pointing out the two new events were also well received.

Adding two additional shows to

the established line-up, Simon says, was a logical decision. "Both waste management and road and civil construction plays powerful roles in the Australian economy and are directly linked to road transport, so bringing them together was a great opportunity for everyone involved," he explained.

"Exhibitors such as Volvo and Iveco capitalised on this new multi-platform show to launch new models and, based on that experience, we are confident that we have laid a strong foundation to grow from."

New releases

The outdoor area attracted plenty of interest from exhibitors and visitors alike.

On the first day of the show, Volvo unveiled its new FE Euro 6 Dual Control 6×4 rear-air suspension waste truck in Australia for the first time. They displayed this fitted with a Bucher Gen V Series II body.

Iveco used its display to demonstrate several of the latest ACCOs: the 4×2 being fitted with another recently-released technology, the Hiab Multilift Futura new generation skiploader, the latest Stralis range and a new Daily van.

"Volvo Trucks also used the expo to launch its new 'Stop, Look, Wave' campaign to educate school children on the importance of communicating with road users, indicating just how important the show is as a tool to enhance important brand and community messages," adds Simon.

Also in the outdoor display area, Superior Pak brought a brand-new truck fitted out with its latest technology, the pedestrian detection system (PDS), which its engineers originally invented for Veolia. It also brought an Iveco/Superior Pak 24m³ side loader, and a Scania/Superior Pak combination 20m³ rear loader featuring auto bin collect. National Sales Manager Gary Whineray said: "The feedback on the PDS has been extremely positive and there's been lots of interest from the main waste industry businesses, especially from an OHS perspective."

A leading company in the manufacture, distributing and servicing of industrial machinery, Clark Equipment displayed a Bobcat S70

Spoutvac's truck on display in the outdoor area.



skid-steer loader. The ideal size for getting through narrow spaces and for working under low ceilings, the model is effective whenever the job is too big for a shovel or the space is too small for a larger machine.

Spoutvac and **Bosch Rexroth** collaborated on bringing their technology to the waste and civil works sectors. “We have a brought range of customers who use our equipment, such as councils and larger operators,” said Spoutvac General Manager Andrew Mollison. “There’s a lot of opportunity for us in the waste industry, so this was the ideal event to meet representatives from that sector.”

Vacuum Truck Supplies, Australia’s only specialist vacuum tanker manufacturer, had two displays to show off its latest applications for the waste industry. “We wanted to raise awareness of our business with the waste industry,” said Managing Director Rod Glue. We particularly are highlighting our tipping tri-axle tanker, which is ideal for transporting heavy liquid wastes and sludges.”

The **Wastech** team was busy demonstrating the capabilities of its FAUN street sweeper and rear loader, which it recently brought to market. Ken Russ, Sales Manager – Queensland, said “It’s been quite a good platform for re-connecting with people we haven’t seen for a while,

and updating them on our range, and getting feedback in an informal setting.”

When it came to raising awareness about issues across different sectors of the waste industry with visitors, three associations came together in one pavilion. Representing the **Australian Organics Recycling Association** was David Rako, Director of DJR Environmental; Andrew Tytherleigh, Executive Officer of the **Victorian Waste Management Association**, was delighted to see a number of members at show; while Rick Ralph, CEO of **Waste Recycling Industry Queensland (WRIQ)**, travelled down to support several of his association’s members participating in the event.

Talking about the potential of the new expo, Rick said: “This is a particularly relevant event for the industry to engage with suppliers and keep abreast of new technology.”

Indoor pavilion displays

Cleanaway brought along a newly-liveried waste collection truck and a large display to establish its new single branding across the business, and to

share details of how it will support the new Paintback paint product stewardship program (see page 54.)

A long-term supplier of Genox Equipment, **Applied Machinery** used its display to show off its single shaft shredding system. It also promoted its expertise in the recycling of tyres, as well as explain the potential market for the recovered product.

Managing Director David Macdonald said: “We’re seeing a clear trend for tyre recycling equipment; about half of the enquiries we receive are about this at the moment. We feel we’ve got a product that the market should be considering.”

With substantial experience in truck body building, **Ausco Truck Bodies** was targeting the waste management market with its rear compactor, which it brought to market two years ago. Although it uses proven technology provided by South Korean firm AMSV, and assembles the equipment in Melbourne, the company is aware some buyers may require assurance for this newer product. As a result, it offers a three-year warranty extendable to five years.

DKSH Australia’s Eric Paulsen and



Jacob Curmi and Eric Lee of Ausco Truck Bodies.



Jeff Goodwin handled a number of enquiries on their stand regarding their environmental technologies, and how they can help with integrating services around recycling equipment.

With such a proliferation of drivers and representatives from truck companies, the EPA Victoria stand proved popular. Those working in waste logistics were keen to get up-to-date on the latest legal requirements for managing and transporting waste, particularly prescribed industrial waste.

With a full-working prototype, **ET Braking System** demonstrated its innovative new technology that reduces the braking distance of vehicles using a single pedal operation for stop and start applications, ideal for refuse collection trucks.

The **Ezy2c GPS Tracking** stand had numerous enquiries about its latest technology to manage fleets, services and drivers effectively.

Scribal International was keen to show the various uses of its award-winning **Hazibag**. National Sales Manager Adam Cameron said the Hazibag's application go way beyond packing and helping the transportation of asbestos. "They are now widely used wherever hazardous waste needs to be removed," he said.

Jye Davis from **Industrial Brushware** said they were keen to build new relationships with the waste industry, mainly the municipal market, to discuss applications for their wide range of custom-made brushes. "We make our products here in Australia

using local suppliers, and with that comes good service," he said. OEMs, such as Schwarze, go to the specialist manufacturer for brushes for roadsweepers, as well as spares and replacement parts.

The **KS Environmental** stand and team had heaps of information about the company's wide range of environmental, waste and cleaning services for clients in the metropolitan Melbourne area. "We're also able to provide a fully integrated service around waste management and facility services," said Events Co-ordinator Jane Phelan.

Glenn Alford and Cam Waddell from **Odour Management** took part in the show to promote their innovative industrial strength odour neutralising product, Ecosorb, a scent-free, chemical free alternative for effective odour control for waste facilities.

Pacific Materials Handling was a late addition to the indoor area. They brought a huge Sennebogen 818E material handling machine with an adjustable cab. This is suitable for applications including scrap recycling, waste sorting, shredder feeding.

And in the IT services sector, **Wastedge** displayed the latest in Cloud software, route optimisation and mobile order management apps



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his tyre inflation systems, which can make tyres last longer and lead to cost savings for the client.

In the truck show's Main Arena was David Fredericks from NSW-based **Rear Vision Systems**, who had travelled down to Melbourne to promote the latest models of Mitsubishi on-board cameras and digital video recorder technology.

Also in this area was **Truck Rear Vision Systems**, which specialises in the supply, installation and servicing of the latest rear view camera systems and safety monitoring equipment for commercial and industrial vehicles.

In the Exhibition Pavilion of the Truck Show was **AccuOnboard**, specialist in vehicle weighing, which was promoting its upcoming technology in on-board truck scales and weighing systems.

After learning from the experience of running this first indoor/outdoor expo for the waste industry, the organisers are now starting to plan for the next one in two years' time.

"We have already started work on the 2018 show and are more determined than ever to provide the best and most expansive platform for the industry," said Simon. "As part of that process, we value feedback from industry as we endeavour to grow the event further and deliver real, tangible value to the industries we serve." ■

and mapping for waste management companies (more details on page 20).

Industry suppliers around the show

Outside of the Waste Management In Action expo, a number of equipment specialists targeting the waste and recycling sectors took the opportunity of crossing market segments in the truck show and roads areas.

Representing Canadian original equipment manufacturer Titan Trailers, **Thinwall** took a space in the main show to present a range of all-new, ADR-approved aluminium trailers in Melbourne that included a walking floor semi-trailer for the waste industry.

Combilift also took an outdoor space to target waste and recycling sectors for the official Australian launch of its new model, the Straddle Carrier Container Tilter.

Even though challenging market conditions forced a number of prominent truck OEMs to stay away from the fifth instalment of the event, the 2016 edition saw a solid turnout of around 6,500 attendees a day, and the most product premieres in the show's

10-year history.

Elphinstone was celebrating 40 years of producing specialist mobile weighbridge and weighing systems, which can be hugely useful to the waste sector. Director Grant Elphinstone said: "It's important to be here and talk to potential customers about new products. Our latest offering is a new app is a bluetooth connection from the weighing system to display weights visually on a mobile, and it's also adaptable to any Elphinstone system that we've provided since 1998."

Chet Cline from **Air CTI** had a huge display outside the waste outdoor area to promote his the usefulness of



Several leading fleet and equipment manufacturers and suppliers used the first Waste Management In Action expo to show off their latest vehicles or machines.

COMBILIFT COMBI-SC CONTAINER TILTER



Combilift used the International Truck Trailer & Equipment Show for the official Australian launch of its new model, the Straddle Carrier (Combi-SC) Container Tilter, leveraging its exposure to Waste Management In Action attendees at the same time.

The Combi-SC range offers companies handling containers and out of gauge loads an alternative and more cost-effective and efficient option compared with reach stackers and mobile cranes.

The latest addition to this range, the new container tilter has multiple benefits for bulk loading and offloading, which are particularly relevant to recyclers and scrap yards.

The Combi-SC Container Tilter is a one machine solution for two discrete applications: offloading and tipping of bulk materials where a container needs to be tipped 75 degrees, and loading bulk where a container needs to be upended to 90 degrees. It is the only machine of its kind in the world that can carry out both functions, depending on the individual requirements of scrap yards or recycling operations.

Better use of yard space, cost savings, faster operations and improved health and safety procedures are just some of the advantages of this unique model.

A video of the new Combi-SC Container Tilter can be viewed on Combilift's YouTube channel.

www.combilift.com

ET BRAKING SYSTEM



Erland Olofsson displayed his unique invention, the ET Braking System (ETBS), in the Waste Management In Action indoor hall.

The system aims to help drivers' performance by reducing fatigue and cutting stopping distances in emergency braking situations. Use of this innovation is expected to reduce the road accident rate, as well as the severity of injuries sustained in road traffic incidents.

The ETBS uses the convenience of a single pedal control for stop-and-start vehicles like waste management trucks and emergency vehicles. It links braking operation to the top end of the accelerator pedal motion, with the remainder of the motion of the accelerator pedal operating in its usual manner.

It can be fitted to vehicles by either retrofit or as part of their original equipment provided the vehicle has automatic transmission.

Erland stated that the device has many features that contribute to improved occupational health and safety, which could be particularly useful for the waste industry.

"The ETBS may be of benefit to waste collection or service vehicles, preventing many risks associated with this kind of driving," he said. "For example, as just one pedal is used, it helps lessen driver fatigue, and an ergonomic study showed it helps reduce the incidence of knee injuries."

An ETBS-equipped vehicle also complies with the requirements of the applicable Australian Design Rules (ADRs) for motor vehicles, including ADR 35/03 Commercial Vehicle Brake Systems.

www.etbrakingssystem.com

IVECO ACCO

Iveco Australia used the Waste Management In Action outdoor area and the Test Track to show the versatility of its recently-revamped ACCO model, a stalwart waste industry workhorse.

The latest ACCO model, upgraded in late 2014, was built on a proven formula that reinforces its suitability for demanding applications, such as compactor work, with an array of safety features that makes it ideal for refuse collection.

Its fully steel-constructed, ECE-R29-rated cabin is strong and provides outstanding protection for all applications. For improved visibility in side loader work, it also features three-quarter side windows. ABS brakes with active traction control is fitted as standard.

Iveco brought along a 4x2 and two 6x4 models to the expo. The 4x2 was equipped with a Hiab Multilift Futura new generation skiploader.

The first 6 x 4 was configured with a compactor unit, which will be operated by Solo Resource Recovery on a contract with Manningham Council in Melbourne's eastern suburbs.

While the second 6x4 was fitted with Bucher Municipal's latest side loader unit, the Gen V Series II, and demonstrated on the Test Track.

"The ACCO range is an industry standard in the waste collection sector given its bullet-proof driveline, low whole of life costing and fit-for-task construction," said Iveco Australia Marketing Manager, Darren Swenson.

As the ACCO is designed, built and tested in Australia, buyers get the flexibility of customisation down the production line, saving time and money at the body builders.

www.iveco.com.au



VOLVO FE EURO 6 DUAL CONTROL

Volvo Trucks unveiled its new waste industry-aimed model for the Australian market on the first day of Waste Management In Action.

The truck manufacturer used the Test Track for the official launch of its new FE Euro 6 Dual Control, which was shown on a 6x4 rear-air suspension model.

The new Volvo FE Dual Control has been designed to deliver world-class safety features and to deal with the challenges of urban areas. It features rear air suspension in a 6x4 axle configuration and improved driver ergonomics. It is also better for the environment, with fuel-saving technology and low Euro 6 emissions.



"This truck has been designed and adapted locally and in consultation with leading Australian waste management companies to meet and exceed requirements for this market," said Mitch Peden, Vice President of Volvo Trucks Australia.

"We know that safety is paramount for councils and operators who provide waste management services in busy residential streets and high-traffic urban environments."

With a wider windshield and extra side mirrors, the FE Dual Control provides excellent visibility from the cab, an essential aspect for a waste truck operating in dense urban environments where safety hazards such as running children, pets and cars reversing from driveways are commonplace.

It also features Volvo's world-class safety and technological innovations, including forward collision warning and emergency braking as standard on the 6x4 model.

www.volvotrucks.com.au

The Superior Pak display, featuring a Veolia truck fitted with the new pedestrian detection system technology.



The EPA Victoria representative meeting drivers.



Representatives from the associations, WRIO, VWMA and AORA, at their pavilion.



The Cleanaway team handling enquiries about its array of services.



An Iveco representative demonstrates the new ACCO cab chassis.



The new Volvo FE Dual Control being demonstrated on the Test Track with the new 'Stop, Look, Wave' messaging.



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Pacific Material Handling attracts plenty of interest with its full size Sennebogen 818E on display.



The Vacuum Truck Supplies outdoor display, featuring its new hydro-excavation machine.



DKSH's Eric Paulsen provides details to a visitor.



Wastech's Ken Russ demonstrates the new FAUN range to expo visitors.



The Applied Machinery display attracting enquiries about tyre recycling and general shredding.



The Ezy2c GPS Tracking stand.



TIC Group Mattress Recycling Plant

Tottenham, VIC

AFTER MONTHS OF RESEARCH AND TECHNOLOGY MODIFICATIONS, **TIC GROUP** HAS OPENED ITS FIRST STATE-OF-THE-ART MATTRESS RECYCLING PLANT, AND THE SECOND IS ALREADY BEING PLANNED.

Each year Australians send around in excess of one million mattresses to landfill. To put this in perspective, if these were stacked on top of each other, the pile would reach the International Space Station.

TIC Group, a well-established reverse logistics company based just outside Melbourne, has recently started operating its mattress recycling facility in Tottenham, a few kilometres from Melbourne CBD.

The company has invested in cutting-edge technology from the Netherlands to deconstruct mattresses for recycling. In keeping with TIC Group's long-held sustainable operating values, the new plant aims to recover more than 85 per cent of material from the mattresses it processes.

"It's a complete game changer for the challenge of diverting mattresses from landfill," says Michael Warren,

TIC Mattress Recycling Managing Director.

Councils will be familiar with the environmental problems caused by mattresses. They are a bulky waste for landfilling, taking up 0.75 cubic metres of space, they are difficult to compact and "float" in the cell. If landfilled, valuable commodities are also lost, with the average queen-sized mattress comprising 12.5–15 kilograms of steel, 3 kilograms of foam, and about 6-7 kilograms of outer textile.

"To date recycling has either been manual systems, involving Stanley knives, which are slow and expose people to workplace injuries, or shredding-type systems which don't recover much of the recyclable materials," Michael explains. "Whereas our plant is unique! It's an automated way to deconstruct mattresses safely, while minimising human handling and maximising

the amount of material that can be repurposed."

Turning a problem into a solution

The project to bring automated mattress recycling to Australia started about four years ago. A TIC Group board member was leasing a factory to a traditional mattress recycler, DreamSafe. When DreamSafe went into receivership, it left 40,000 end-of-life mattresses in the factory. The clean-up cost was originally quoted at \$1 million dollars.

The board member promptly started investigate other options.

With a lack of automated deconstruction processes for mattresses in Australia, a global search was conducted to find better alternatives to recycle mattresses and achieve higher resource recovery levels.

"Following a review of technology in France, Wales and the Netherlands,

it became clear that the Dutch technology was best suited to our criteria of high resource recovery and effective and safe recycling methods,” says Michael.

TIC has since entered into a joint venture partnership with the Netherlands company that owns the intellectual property to the process.

Over two years, substantial changes have been made to the original Dutch design so the technology can handle Australian mattresses. These modifications came after TIC sent Australian mattresses to the Dutch facility for testing, and found that the items had significant differences, which meant the plant machinery needed rethinking to work properly.

“In Europe, the mattresses are mainly made from foam. The original dissector cut at a 270-degree angle and peeled over the various layers,” Michael explains. “That doesn’t happen with Australian mattresses as they have hog rings, so the dismantling equipment had to deal with that challenge.”

TIC’s Australian plant uses conveyor belts, cutters, dissectors and peel rollers to commence the separation of the various materials within a mattress.

The foam and quilting is baled separately. Steel and the remaining flock is passed through a shredder and, with the use of air and vacuum, the metal is separated from the flock for recycling.

“When people visit the site, they can’t believe how clean the work environment is,” adds Michael. “The dust extraction system helps to minimise floating rubbish and fibre particles in the air, which is better for plant workers from an occupational health and safety point of view.”

TIC also has a contract to supply a company with the textile and foam, which it uses in carpet underlay.

“At the moment we don’t recover

the felt, which makes up about 5 kilograms of a mattress,” Michael says. “That’s currently being landfilled, but we are working with partners to find a use for that. In Holland they use it for home insulation, for example.”

The Tottenham plant is currently processing just over 60 mattresses per hour, but Michael expects that to increase with further streamlining. The plant is capable of processing 450,000 mattresses a year. The next step is to ensure it receives plenty of mattresses for the hungry deconstruction facility.

TIC’s primary source of mattresses comes from council hard waste collections, transfer stations and landfill operators.

“We are also supporting Sleepmaker, the largest mattresses manufacturer in the country, to underpin its mattress takeback service to customers – ensuring they are recycled with the highest resource recovery available,” Michael adds. When Sleepmaker sells a mattress, and delivers it to the client direct, they offer a service to take the old mattress back. They then store the mattresses for TIC to collect.

TIC is also hoping to leverage its haulage capacity as a reverse logistics company to maximise the use of trucks on return journeys, especially on routes to regional Victoria and remote locations across Australia.

Next stop: New South Wales

In February, TIC Mattress Recycling received \$794,000 under the NSW Government *Waste Less Recycle More* program to fast track development of Sydney’s first automated mattress deconstruction facility.

This announcement coincided with TIC’s acquisition of the largest commercial mattress recycler in the state, Landsavers, which will secure an initial supply of about 70,000 mattresses per year for processing.

“The plant must be operational by 31 December, so we have placed the order for the plant and all the relevant components, which will arrive in Australia in September this year,” says Michael. At the moment, the company is in the process of securing an appropriate site to call home in New South Wales.

“When both plants are running, we will have the capacity to process 900,000 mattresses annually combined across the NSW and Victorian facility,” states Michael. “This should make significant inroads to addressing what has long been an environmental issue in Australia.”

If you have a query about TIC Mattress Recycling, contact mattressrecycling@ticgroup.com.au. ■



The conveyor belt leading up to the deconstruction machine.

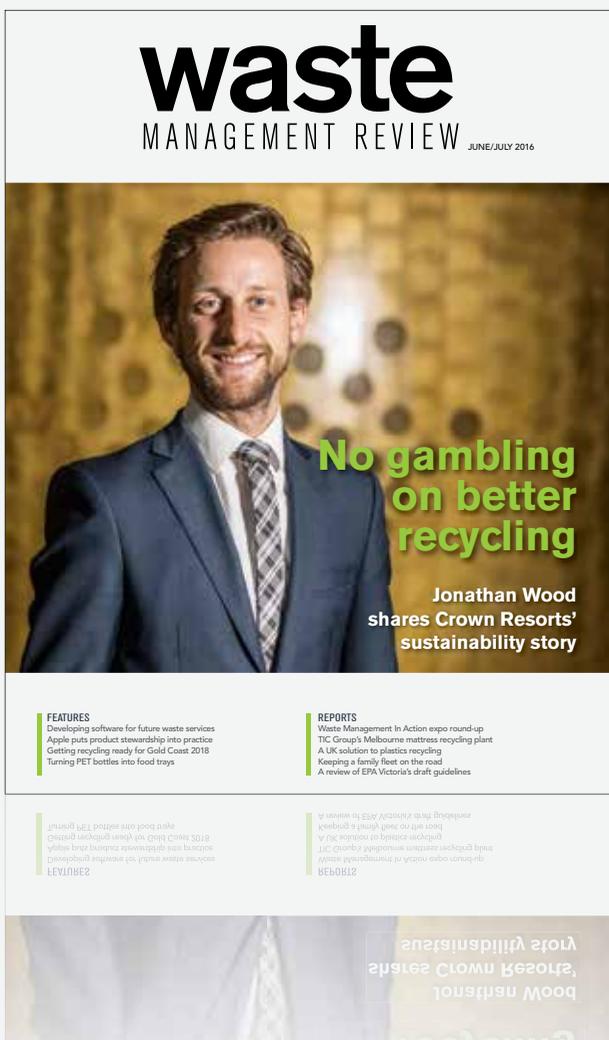
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An overground resource boom

MBA POLYMERS RECENTLY LAUNCHED ANOTHER PROCESSING INNOVATION THAT REINFORCES ITS STATUS AS A LEADING MULTINATIONAL PLASTICS RECYCLING AND TECHNOLOGY COMPANY, CONTRIBUTING TO ITS ONGOING SUCCESS RECOVERING VALUE FROM PLASTIC WASTE STREAMS.

MBA Polymers announced in April that it had opened the world's first commercial production line recovering a particular plastic from highly-mixed shredded e-waste.

This is the latest in a string of achievements and innovations by the multinational plastics recycling and technology company since founder Dr Mike Biddle started investigating how to separate plastic from complex waste streams from the garage of his California home in 1992.

“The main difference between our process and that of others is that we found a way to separate plastics at a particle level, by type and grade,” says Mike.

Mike says MBA's various processes were developed and refined over seven or eight years thanks to research projects by the automotive, electronics and polyplastics sectors, and grants from government agencies. The company then developed the technology to scale and automate those processes to achieve better purities and economies of scale.

“The technology has been the enabler to the game-changing things the company's achieved,” Mike states.

MBA reimaged and revolutionised the large-scale recycling of plastics

from complex, widely-available post-consumer waste streams, such as e-waste, end of life vehicles and, more recently, household mixed plastics waste.

With this unique approach and technology, the company has become an acknowledged, reputable global leader in recycling plastics from these sources, with the capacity to process more than 125 million tonnes a year at its facilities in China, Austria and the UK.

The re-processed products are sold back into the automotive, electrical, industrial and consumer markets for manufacturing. Its premium trademarked EvoSource ABS and HIPS

(high-impact polystyrene) grades are currently used in products including electronics, computer peripherals, cars, and small household appliances.

“The companies whose products we recycle often become our customers, in what is a true circular economy process in action,” says Mike. “The reason we're process e-waste in southern China, for example, is because it's the largest manufacturing base for electronics in the world – it's convenient for supplying our product back into the market.”

The point of difference

What MBA has achieved, few have done in the past for plastics. Recycling



The interior of the MBA Polymers processing facility in the UK.

plastics used to mean “down-cycling” the material for use in items like plastic benches or crates, which have low appearance and strength requirements.

“We have been able to take extremely complex mixtures and create grades of plastic that are replacement quality for virgin material,” Mike says. “Just like the transition with steel products over generations: the recovered product was first used only in applications such as reinforcing bars in concrete, but the quality improved to be used in high-spec applications, like cars.”

Most of MBA’s products are now based on 100 per cent grade post-consumer plastics (minus small amounts of additives used to achieve colour other properties some manufacturers require.) They can be used for products requiring a quality appearance.

However, Mike says the difference between MBA and other material recyclers was developing the technology to enable the processing of a wide range of mixed materials to in turn produce new material at scale. This provides the economics required to drive the business.

“If you’re using plastics from one source, this usually limits your

ability to scale,” Mike explains. “For example, for a PET bottle recycler, the bale has to be predominantly that material with low contamination to run cost-efficiently. As we can take mixed plastics, we can build larger facilities, and access much larger quantities of feedstock.

“The big companies wouldn’t use us if we couldn’t supply hundreds of tonnes of one given type and grade of material with consistent and high-quality properties,” he adds.

MBA’s international facilities

After starting the business and opening his first small-scale commercial facility in the San Francisco Bay area in the late 1990s, Mike then looked outside the US for opportunities to expand.

“Waste management policies were much stronger overseas than in the US, and our model was to handle waste responsibly, which depended on suppliers and customers to do the right thing as well,” says Mike.

In 2004, the company created a joint venture with Guangzhou Iron and Steel Enterprises for a recycling facility in China. It commissioned the plant in early 2006, which now employs around 75 people. The site is in the Nansha Economic Development

Zone District of Guangzhou, within easy reach of many major global manufacturers of consumer electronics and IT equipment.

At a similar time to setting up in China, MBA started work on a European operation. It entered a joint venture with the Austrian Müller-Guttenbrunn Group, with MBA as the majority and managing shareholder, and started commercial operations in the second quarter of 2006.

MBA says its Austrian plant is one of the most advanced plastics recycling facilities in the world, covering approximately 20,000 square metres, and has a capacity of about 50,000 tonnes a year. It is staffed by about 70 employees in a three-shift operation, operating and supervising the individual production stages, quality assurance, and preventive maintenance.

The UK facility, based in Worksop in the north of England, was commissioned in late 2010. Based near the country’s two main freeways – the M1 and A1 – the plant is ideally located to serve customers across the country.

The facility is another a joint venture, this time with EMR (European Metal Recycling), the



The MBA Polymers facility in Austria, which has recently opened the innovative PC/ABS processing plant.

largest metals recycler in the country and global industry leader. EMR recycles material from large products made of metal, such as cars and white goods, that are traditionally recycled for their high metal content.

MBA says Worksop is the largest cutting-edge plastics recycling plant in the world (at 13 acres and with an undercover area of 11,700 square metres) that specialises in recovering the plastics and rubber from so-called “shredder residue”, diverting this material from landfill.

At commissioning, its processing rate was 40,000 tonnes a year, but it was designed to grow with a view to handling 80,000 tonnes a year.

The new PC/ABS plant

The new processing line at MBA’s facility at Kematen, Austria, separates, purifies and compounds PC/ABS – a highly-engineered blend of polycarbonate (PC) with acrylonitrile-butadiene-styrene copolymer (ABS). This is used in an array of electronic products, including computers, laptops and mobile phones. The new product will be distributed under MBA’s premium EvoSource tradename.

The mechanical properties of EvoSource PC/ABS grades make them ideal for a broad range of applications. The company says that recovered PC/ABS is set to become integral to supply the burgeoning demand for sustainable materials in some of the world’s largest manufacturing segments – automotive, electrical and consumer electronics.

“EvoSource PC/ABS and MBA Polymers’ other high-quality recycled plastics further expand the opportunities for manufacturers to use more sustainable materials, which in turn increase the realities of a circular economy,” said Arthur Schwesig, Business Manager – Engineering Plastics, announcing the launch of the new line.

In electronics, for example, material

design engineers specify use of MBA’s EvoSource grades to achieve the higher ratings required by the Electronic Product Environmental Assessment Tool (EPEAT).

MBA Austria expects to increase production at the PC/ABS plant gradually during 2016.



Dr Mike Biddle, founder and consultant for MBA Polymers.

Trends and future plans

When it comes to the future direction of the company, Mike says there are a number of factors that will influence what it does next under the leadership of CEO Richard McCombs.

He says they are waiting for the UK plant to get up to speed before moving on to the next phase.

“We’re looking to grow now, but where the next plant/s will be is yet to be determined because there are numerous opportunities around the world,” says Mike. “The US is interesting, as policy is starting to change and they want to recycle more in the country.”

The US currently exports hard-to-recycle plastics to China or sends them to landfill. Mike expects that to change, however, as it becomes more strict and China generates more scrap itself.

MBA is in position to take advantage of significantly increased rates of plastics collection in North America, the US EPA allowance to recover plastics from shredder residue, the EU

progressive recycling targets for plastics packaging (45 per cent by 2020 and 60 per cent by 2025) and calls from some groups to ban the landfilling or incineration of waste plastics in the EU as part of its Circular Economy proposals.

On the other hand, like all recycling businesses, MBA must track commodity prices, which have been at record lows and can heavily impact profitability.

“Low commodity prices hurt all recyclers because recycled plastics have fixed costs, whereas virgin material prices drop when petrochemical prices are low,” Mike explains. “Recyclers therefore don’t get as much benefit from low raw material prices, and some UK recyclers went into receivership in the last 18 months.”

When it comes to challenges for the recycling industry, Mike highlights securing sufficient feedstock as an issue.

“With the amount of plastic in the world, you would think getting enough isn’t a problem. It’s about getting hold of enough at the right time,” says Mike.

This is compounded where there is a lack of infrastructure to collect and transport the recycled materials.

“The first mile problem – getting it from homes or businesses to the recycler – needs a solution,” Mike adds.

For him the biggest issue for some regions is there isn’t a large enough concentration of waste yet. The cost associated with collecting and disposing of recyclables means local governments need to commit to diverting these from landfill and to recovering the materials.

“It’s about making waste a commodity that has value and creates jobs,” urges Mike. “This feeds back into the economy and overall it pays for itself. Europe has proved that time and time again.” ■

Keeping the fleet on the road

COMMERCIAL WASTE MANAGEMENT FIRM HAULAWAY HAS EXPANDED ITS FLEET AND IS KEEPING IT ON THE ROAD THANKS TO A FLOURISHING WORKING RELATIONSHIP WITH BUCHER MUNICIPAL.

With its 36-strong eye-catching green and black painted fleet decorated with a logo of a smiling crocodile waving an Australian flag, it's hard to miss a Haulaway truck around metropolitan Melbourne. Expanding this fleet and keeping it on the road is a priority for Haulaway's Managing Director Richard Hilbert.

An Australian family owned and operated commercial waste management business that has been running for more than 30 years, Haulaway supplies firms in the greater Melbourne area with static compactors,

bulk, front lift and rear lift bins, and source-separated collection services.

"We are a family firm specialising in waste and recycling management, and logistics," explains Richard. "But we also provide full sustainability and reporting services, helping organisations demonstrate their performance on diversion from landfill and against environmental key performance indicators."

Richard's team reviews their clients' waste streams and advises on the best way of handling them. The aim is to address their waste management needs cost-effectively, balancing their desire

to achieve better environmental and economic outcomes.

"I think we offer a great personalised service, with full due diligence," says Richard. "When we go to see a client, we do a full review of their requirements."

A growing fleet

Over the years, Haulaway has adapted and grown to provide the services its customers want. The firm now has 47 employees and a fleet of 36 trucks with front lift, rear lift, hook lift, bulk haulage and walking floor applications, as well as semi-tippers and tautliners.



A Haulaway truck fitted with a Bucher Municipal front loader.

Richard says Haulaway has long prided itself on its customer-focused approach to business, and he expects the same from the suppliers. This expectation prompted a working relationship with Bucher Municipal for the supply and service of waste vehicles, which has developed over the past two years.

“We were buying bodies from other suppliers a few years ago, and we weren’t totally happy with how they were going at the time,” recalls Richard.

“Bucher met with us about the new generation models, and we thought they were a good option, so we went with them for our next order.”

Haulaway has so far invested in six vehicles from Bucher, most recently two FORCE 33.5 cubic metre front loaders and an Urbin 14 cubic metre rear loader, which is on a 4 x 2 cab chassis making it ideal for city use where operating space is limited.

Bucher says the newer models offer increased hopper volumes, faster bin lifts and higher compaction rates, which Richard’s team has noticed in the field.

“We believe Bucher’s bodies are currently the better ones on the market, as we’re getting higher payloads, better compactability and fewer breakdowns,” he says.

Richard is also fulsome in his praise of Bucher’s consultative approach to finding the right solution for his business, and in how the team go about managing his account.

“You find with Bucher that they don’t just come in to get a contract. They find out exactly what you’re looking for, and build it exactly to your specifications; we haven’t had one complaint in 18 months,” Richard explains. He recalls that for the rear loader, height restrictions needed to be taken into account due to access issues around some city centre buildings, so Bucher helped Haulaway with engineering to produce a suitable machine.

“They sell you a body and a service,” adds Richard. “The quality of their sales

and support team is very good, and you enjoy more of a personal relationship with them. Their induction when you take delivery of a unit is also excellent.”

Bucher Sales Manager Warrick Grime says his team has also been able to help Haulaway with meeting certain requirements for the fleet.

“We fitted load cells to the bodies to ensure drivers stay within the rules of the total weight they can carry. Richard can also provide weights back to customers for their personal data on waste volume,” Warrick explains. “We also added extra lighting on the rear loader as they were collecting mostly during the early hours of the morning. Extra lighting was needed as a safety precaution.”

A new level of post-sales support

After investing in new refuse machines from Bucher, Haulaway now relies on its Dandenong-based service centre for the ongoing maintenance and certified servicing of its fleet. Bucher also provides additional support to help drivers get the most out of the new equipment and to keep Haulaway’s valuable assets on the road.

“The Victorian branch has three departments – sales, service and spare parts – so we undertake the servicing and routine maintenance when required,” explain Warrick. “We also provide operator and technical training for Haulaway’s

drivers and technicians, as well as a 24/7 breakdown service, on the road or at the premises. We are a team that provides a one-stop shop for all their needs.”

“Due to compliance and certification obligations placed on waste logistics businesses, we need to know everything is safe and within the rules. Bucher handles all of that – we leave it to the experts,” adds Richard.

And even when an issue occurs, Richard has been impressed with how Bucher has come to his aid.

“We had ordered a rear loader for an organics collection contract, which needed to start on a set date. Unfortunately, the cab chassis hadn’t arrived in time, which put the delivery date for the unit behind,” explains Richard. “Bucher gave us their demonstration unit to help us out. I think that is the sign of a very professional and caring company.”

Warrick emphasises that part of Bucher’s sales process is ensuring it supplies according to customers’ contract start-up dates.

“Richard is a loyal customer and we will always endeavour to provide the extra support we can,” says Warrick, “it’s why our customers keep coming back.”

More information on Bucher Municipal’s range of equipment for waste application and their service centres is available at www.buchermunicipal.com.au. ■



One of Haulaway’s fleet equipped with a Bucher Municipal rear loader.

In each edition, we feature a selection of the latest products and equipment to hit the market. This time, we include a range of new vehicles and associated equipment designed to cater for the challenging durability, safety and efficiency needs of the waste services sector.

CAT 836K LANDFILL COMPACTOR

The new 562 Gross Horsepower (419 kW) Cat 836K Landfill Compactor with T4F engine embodies more than 20 years of Caterpillar expertise.

The compactor offers field-proven components with a history of reliability, ease of service, and an ergonomic environment to ensure the operator's health, productivity and safety.

The 836K features a new cab, an engine that meets US EPA Tier 4-Final (EU Stage IV) emissions regulations, new wheel and tip configurations, and enhanced safety and maintenance features.

The newly-designed operator's station features improved ingress/egress, and a standard rear view camera that significantly enhances overall visibility. A new instrument pod features membrane switch panels, while automatic temperature control adds to the overall comfort of the cabin. Interior and bystander sound levels are reduced, and optional sound-suppression packages are available.

For added productivity, the 836K's Auto-Blade feature automatically raises the blade when the machine reverses and lowers the blade to a pre-set height when it moves forward. The STIC steering controller uses a single lever for steering and transmission control, allowing the operator to sit comfortably back in the seat, significantly reducing fatigue. Available features include a heated seat and radio options, including Bluetooth, MPS or satellite.

www.cat.com



ERIEZ METALARM 6600



The Eriez Metalarm 6600 is low cost and easy to install. It features a small, lightweight control unit, and can be directly attached to lightweight conveyors. The equipment can detect both ferrous and nonferrous metals.

The model provides a solution to many metal detection problems and its use helps prevent damage to machinery resulting in lower repair costs and downtime. The detector's sensing height covers the full belt width.

The Metalarm 6600 features fail-safe electronics, with plug-in search coils, and a fully removable printed circuit board for easy maintenance. It complies with CE-EMC regulations, and is less prone to electrical noise. Its Surface Mount Technology (SMT) interface improves reliability.

Due to the increase in recycled product value, customers who invest in the product will see a quick pay-back.

Eriez offers other metal detector options, including the Metalarm 3000 for inspecting mouldings for metal contamination; Balanced Coil for checking plastic containers before food industry use; the Metalarm 7000 for checking plastic sheet materials; and the Metalarm HandyTec Handheld Unit for pinpointing the position of metal in sheet materials.

www.eriez.com

LIEBHERR LH 40 MATERIAL HANDLER

The new generation Liebherr Handler, the LH 40 Industry, is a high performing yet economical machine specifically designed for use in scrap recycling, timber yards and for handling bulk materials.

The diesel engine is powerful, robust and reliable. The LH 40's closed slewing circuit ensures high torque for maximum acceleration, even at low speeds, and fast rotary movements. Its integrated speed sensor helps control and monitor braking movements for greater safety. It boasts simpler and faster fault diagnostics for optimal availability.

The Liebherr Power Efficiency (LPE) optimises the interaction of the drive components in terms of efficiency. The working tools have a robust slewing drive and can be rotated 360 degrees. Liebherr grabs offer optimum filling and clamping performance for effective material handling. The Energy Recovery Cylinder (ERC) System offers fuel savings of up to 30 per cent; this means lower running costs, while the machine also features reduced pollutant and noise emissions.

The LH 40 Industry features Quality and Process Data Management, allowing production data to be logged, documented and evaluated. This allows the automation of documentation and test specifications, as well as the ability to handle large quantities while maintaining uniform high quality.

The operator's cab is ergonomically designed and features the best possible all-round view. In addition, ergonomic ladder systems, different cab elevations and automatic central lubrication systems for the machine and its attachments provide the necessary comfort. This allows the operator to focus on what is important – the handling capacity.

www.liebherr.com.au



LOADMAN ON-BOARD DIGITAL SCALE SOLUTIONS

Loadman Australia provides a huge range of scale solutions for the waste industry.

Loadman sources products from three manufacturers, while also developing technology locally, to meet almost all customer requirements.

For the operator who needs weigh-in-motion systems with individual bin weighing for front, side and rear load waste and recycling applications, Loadman offers load cell technology, which is adaptable to existing bin lifters.

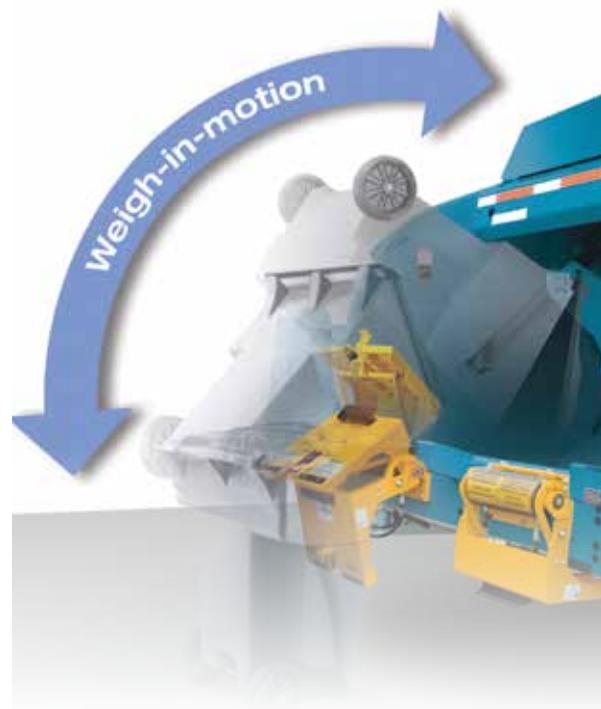
Touch screen technology and load management GPS software supports the systems, gathering all information on pick-ups by weight, location, customer and time, then sends it back to the office instantly.

Loadman also offers a range of under-body load cell solutions with patented strain gauge technology with a higher output for more accurate weighing.

For compliance considerations, Loadman offers solutions for air and spring suspension systems. For 4 x 2 vehicles with a GVM up to 16,000 kilograms, the Red Forge Axalert Plus system is a cost-effective solution with visual and audible warning for axle group weight and GVM.

The Loadman rigid truck suspension-based scale systems are suitable for spring and air suspension with systems for 4 x 2, 6 x 4 and 8 x 4 vehicles. For individual axle group weights for trucks and trailers with air suspension, the Airtec AXL-200 meets the requirements with a calibrated display in kilograms. Overload warning options are available with the Airtec product.

www.loadman.com.au



A review of EPA Victoria's new Draft Guidelines

VICTORIAN WASTE MANAGEMENT ASSOCIATION EXECUTIVE OFFICER
ANDREW TYTHERLEIGH REVIEWS EPA VICTORIA'S RECENT DRAFT
GUIDELINES ON LANDFILLS AND PRESCRIBED INDUSTRIAL WASTES.

When I was a kid, a visit to the tip with the old man was always a highlight. Standing at the edge of the old quarry on Mt Mugga Mugga, we could hurl the empties across the void and, if lucky, they'd smash against the opposite wall.

Thirty years later, you could still scavenge around the tip face in the old sand pits of the south east, fossicking among the car bodies and Harris trains dumped there.

It was nearly my undoing, as once, to avoid the advancing dozer, I jumped off the tip face and straight into quicksand up to my armpits. I managed to grab something and pull myself out of the black ooze still clutching the part that I had scavenged from the Kombi. When I got back to the car, a bloke nearby, throwing out bags of rags, took one look at me and said, "Here mate, looks like you could use some of these", as he held out a bag at arm's length.

Not that I am suggesting that the community needs to get that "up close and personal" with landfills, but maybe it's because people don't interact with "tips" like they used to do is why they are viewed with such suspicion these days.

In the intervening years, since the EPA has been licensing them and occupational health and safety has

become a prime consideration, a visit to the landfill is as anodyne as a trip to the fuel bowser. There's little to no understanding of how they operate any more.

And it's true that they don't operate like they used to. The latest EPA update on landfill licensing guidelines, which reflect the changed conditions as a result of the licence reform process, shows just how far the regulation of landfills has come.

EPA Victoria (EPA VIC) published draft updated guidelines on two areas of note for waste management operators and those in resource recovery recently.

On 4 April, it launched 'Publication 1619', a draft update to the existing '1323.2 Landfill Licensing' guideline. This document provides guidance on how to understand the conditions brought in by the 2015/2016 EPA VIC review of landfill licences, as well as explaining how to now seek its approval for construction of new landfill cells and leachate ponds at existing landfills.

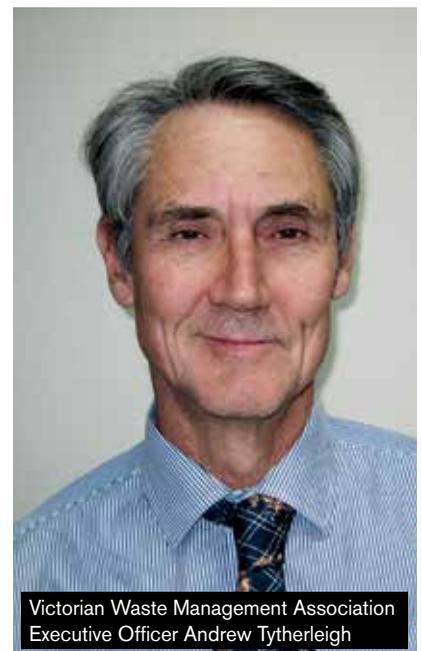
On 31 March, EPA VIC also published its 'Proposed amendments to beneficial reuse provisions in the Environment Protection (Industrial Waste Resource) Regulations 2009'. The regulations aim to ensure an efficient, robust and safe process for the management of prescribed industrial waste (PIW) streams while

simplifying regulatory controls when a PIW can be used as a resource.

Obligations for landfill operators

The EPA requires landfill owners to identify their risks and put in place suitable environmental management procedures. The Guideline (Publication 1619) comprises three sections. Section 1 outlines the steps that need to be taken by operators in the development of monitoring program and how that program is independently audited. It is a complex and detailed process.

Section 2 provides guidance for



Victorian Waste Management Association
Executive Officer Andrew Tytherleigh

obtaining EPA VIC approval for the design of new cells and the specifications, including cap design. Section 3 deals with the amendment process for changes to the cell, cap and leachate pond construction, as well as the audit.

The detail in the landfill licensing document is significant as are the redundancy provisions. An environmental monitoring program based on a risk assessment is verified by an auditor and, again, subsequently at each annual performance statement. In addition, the risk assessment process needs to be verified regularly by an auditor. This is demonstrated clearly by one of EPA VIC's typical flow diagrams, with arrows and boxes circling in a loop.

Of course, EPA VIC always reserves the right to intervene in the process, accepting or rejecting applications or seeking further information. It devotes considerable space about guarding against "minor variation creep" and when it might become "major variation creep".

Of course, regulation is an important part of the effort and expense involved in managing modern landfills, and what most of the community doesn't see. Unfortunately, they often only judge the EPA's success on amenity issues, such as wind-blown litter, odour and flocks of birds. While these are important aspects of any landfill management, they are fairly minimal in environmental impact terms – unless, of course, a housing estate is permitted to abut a boundary. Then no number of landfill guidelines is going to satisfy an outraged community.

Industrial waste requirements

If the detail in the landfill licensing guidelines is eye glazing to anyone not intimately involved with their operation, then the concept of beneficial re-use – first introduced in



the Environment Protection (Industrial Waste Resource) Guidelines (IWRG) in 2009 – has been an equally hard sell for the EPA, with only a reported one application a year.

The proposed amendments to the Beneficial Reuse Provisions are designed to lessen the pain in seeking an approval and to encourage greater use of them.

Briefly, Beneficial Reuse (and Secondary Beneficial Reuse) Provisions were originally designed to assist the diversion of prescribed industrial waste into value adding and resource recovery, rather than treatment and/or disposal. For example, a PIW with the same hazard properties that could be substituted as a raw material instead of virgin stock would be exempt from the regulations (works approvals and licensing) as it is no longer a PIW.

Secondary beneficial reuse, which required some treatment or reprocessing to the material prior to it being used as an input into another process, always needed EPA approval. This is still the case under the revised proposal with some changes to the information requirements.

To improve uptake but discourage non-intended uses (such as contaminated soil being used as fill material), the EPA proposes to

introduce a definition of beneficial re-use that better reflects the concept by incorporating the principles of the material being of a similar hazard to the one it is intended to replace, and that no additional risk controls are required to manage the risks.

Minor drafting changes will be required to the regulations when they go through. These are designed to clarify requirements and terminology, and match up the current practice with the authorisation process.

Both publications are on the EPA VIC website and open for comment from interested parties. They also reflect the EPA's desire to try and reduce their traditional risk-averse nature by building in controls and third party assessment, while not being too prescriptive and limiting the ability of operators to manage their own risk.

They tread a fine line, however, with the community that is quick to accuse them of dereliction of their responsibility when something goes wrong. ■

Andrew Tytherleigh is Executive Officer of the Victorian Waste Management Association. For membership enquiries, contact him by email at andrew@vta.com.au or by phone on 03 9646 8590. Alternatively, visit the website: www.vwma.com.au.



WMAA ENVIRO KEYNOTE SESSION 10 AUGUST

Sydney, NSW

NEW in 2016 and as a lead up to ENVIRO'17, WMAA and AWRE are collaborating to present an ENVIRO Keynote Session at AWRE this year.

This afternoon seminar will feature two renowned keynote speakers, international and Australian, and offer a premier networking opportunity.

www.wmaa.asn.au



AORA NATIONAL CONFERENCE 3-5 AUGUST

Sydney, NSW

The Australian Organics Recycling Association Annual Conference is the main event for those working in or connected with the organics recycling sector. This year's renewal will include: marketing and sales training sessions, tours, a full day conference, and its annual gala dinner and awards.

www.aora.org.au



AUSTRALASIAN WASTE & RECYCLING EXPO 2016 10-11 AUGUST

Sydney, NSW

AWRE brings together the industry's most influential waste and recycling professionals for two days of sharing innovation developments and industry insights, as well as opportunities for networking.

www.awre.com.au



NSW WOMEN IN THE ENVIRONMENT LEADERSHIP LUNCH 6 SEPTEMBER

Sydney, NSW

Following the success of the Melbourne event earlier year, this WMAA event is designed to emphasise the importance and value women provide in this industry sector. It will feature guest speakers, who will share details of their leadership journeys.

www.wmaa.asn.au



INTERNATIONAL SOLID WASTE ASSOCIATION 2016 WORLD CONGRESS

19-21 SEPTEMBER

Novi Sad, Serbia

The ISWA conference attracts waste professionals, industrialists, policymakers and industry innovators at all levels from around the world to advance discussion about the circular economy and making the most of our resources and waste.

www.iswa2016.org



WASTE SOUTH AUSTRALIA CONFERENCE 2016

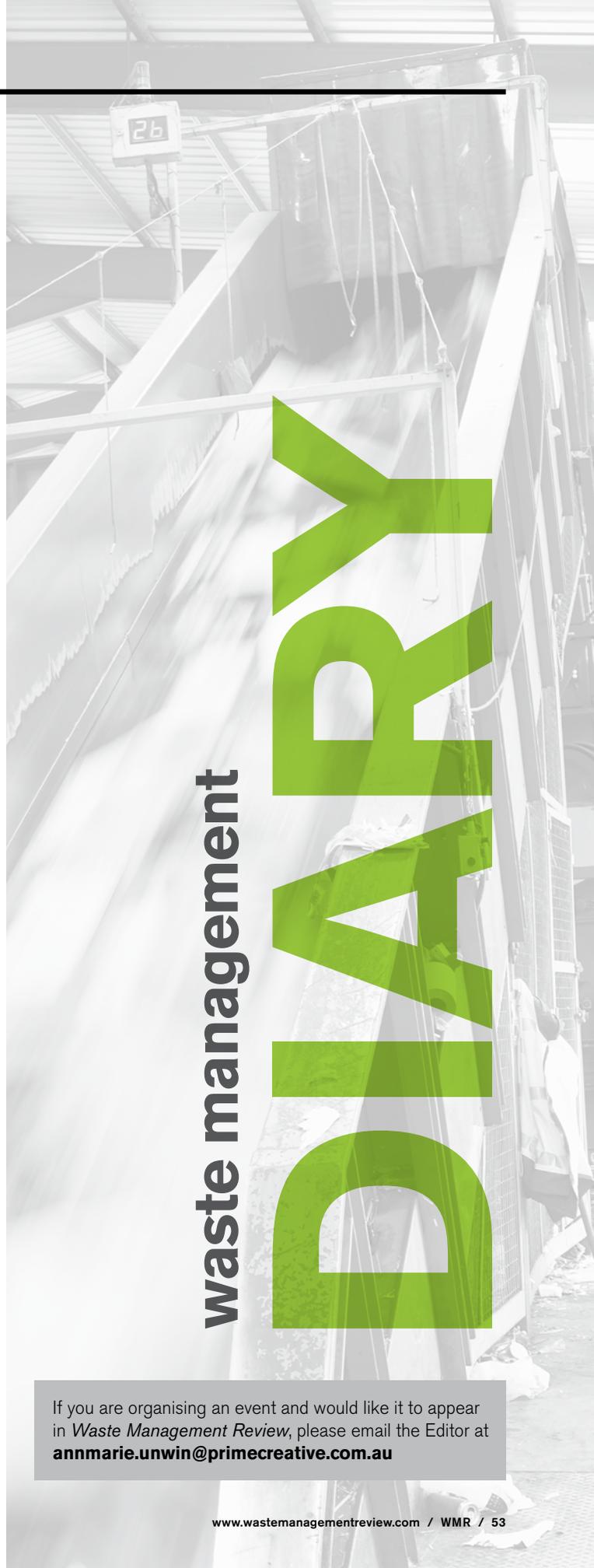
22-23 SEPTEMBER

Adelaide, SA

The one day conference program will cover off investment, infrastructure, and innovation across current learnings and experiences in waste management, recycling, resource recovery and remanufacturing.

On day two, delegates can opt into a technical tour or participate in targeted workshop(s).

www.wmaa.asn.au



waste management DIARY

If you are organising an event and would like it to appear in *Waste Management Review*, please email the Editor at anmarie.unwin@primecreative.com.au

Looking beyond waste for the future of our industry

CLEANAWAY'S GENERAL MANAGER - LIQUIDS, BLAKE SENIOR, TALKS ABOUT THE COMPANY'S NEW COLLABORATION WITH PAINTBACK TO TACKLE ONE OF THE COUNTRY'S PRIORITY WASTE CHALLENGES.

A 2011 report prepared for the government found Australians generated on average 2.2 tonnes of waste per person, 60 per cent of which was recycled or recovered.

The report indicated that increases in income and urbanisation affect the quantity of waste generated. So we can presume that as more people move into urban centres, and as our standard of living increases, so too will our waste.

Our industry faces the dual challenges of growing volumes of waste and more educated consumers, who expect an increasingly sustainable solution.

Cleanaway is ready to meet this challenge, with our national footprint and depth of expertise to support industry, business and communities. Bringing the entire operation together under a single reinvigorated brand earlier this year has reinforced our capacity to develop and deliver a streamlined range of sustainable waste management solutions.

When Paintback launched in May (see page 30), Cleanaway was the natural partner. The world-first program developed and implemented by the Australian paint manufacturing industry offers professional and DIY painters an easy option to dispose of waste paint and packaging responsibly.

Supported by its founding members, who together produce more than 90 per cent of all paint sold in Australia, the program is funded by a levy of 15 cents per litre to the wholesale price of their products. This essentially covers

disposal costs at the point of purchase.

In its collaboration with Cleanaway, Paintback aims to collect more than 45,000 tonnes of waste paint over the next five years, significantly reducing the amount going to landfill and maximising the inherent value of the recyclable materials.

Processing the paint products

A dozen Cleanaway sites are already collecting waste paint alongside a growing number of council sites. Once collected, the waste paint will be sent to Cleanaway's liquid treatment plants for processing, where specialist equipment will crush the tins and extract the paint for processing and treatment.

Waste elements from water-based paint will be processed before beneficial reuse through composting, while waste elements from solvent-based paints (an estimated 10 per cent of expected volumes) will be used as an alternative

fuel source for a local cement manufacturer. The plastic and metal paint packaging will also be recovered and recycled.

Aiming to reach 85 per cent of the population within five years, Paintback is an exciting step forward in the responsible management of waste. Not only is this an exercise in simplicity and accessibility, but also in affordability and, importantly, innovation, as the scheme will fund new research into better uses for unwanted paint.

It will only be through this combination of factors that we will be able to drive the continued evolution of our industry and enable more product stewardship programs.

Manufacturers and environmental solutions experts working together will not only deliver sustainable solutions but also engage Australian industry, business and communities to make a sustainable future possible. ■



Cleanaway is supporting the new Paintback product stewardship program by providing drop off and collection services.

waste

MANAGEMENT REVIEW

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wastemanagementreview.com.au



The Waste Management Review website features:

- Breaking news, updated daily
- Features loaded in fully-digital form
- Events section
- Search bar for easy access to relevant information
- Mobile-friendly for updates on the go



COMMITTED TO SUSTAINED PRODUCTIVITY

Your landfill operation is all about using every inch of space. And every inch of the Cat® 826K landfill compactor is focused on helping you and your machine operators do just that. Including new wheel and tip configurations that offer more traction and stability—and up to 40% longer life.

You get a machine that eliminates waste by reducing fuel burn—and stays out of the waste stream itself thanks to application-specific guarding to protect against debris, and structures designed for multiple service lives.

Productivity, fuel efficiency, durability. Let's get moving.

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