

waste

MANAGEMENT REVIEW

OCTOBER/NOVEMBER 2015

A green heart

David McLachlan talks about the work behind Brisbane City Council's Australian Sustainable City 2014 award and the preparations for renewing its contracts.



FEATURES

- The background to Hiab's new skiploader
- Qantas flies high with recycling program
- A recipe for success in skip collections
- A tyre transportation solution that stacks up

REPORTS

- Transpacific Cleanaway's commercial MRF
- Singapore's offshore solution for waste disposal
- A closed loop for recycling equipment and service
- Expert insights into the latest regulatory developments



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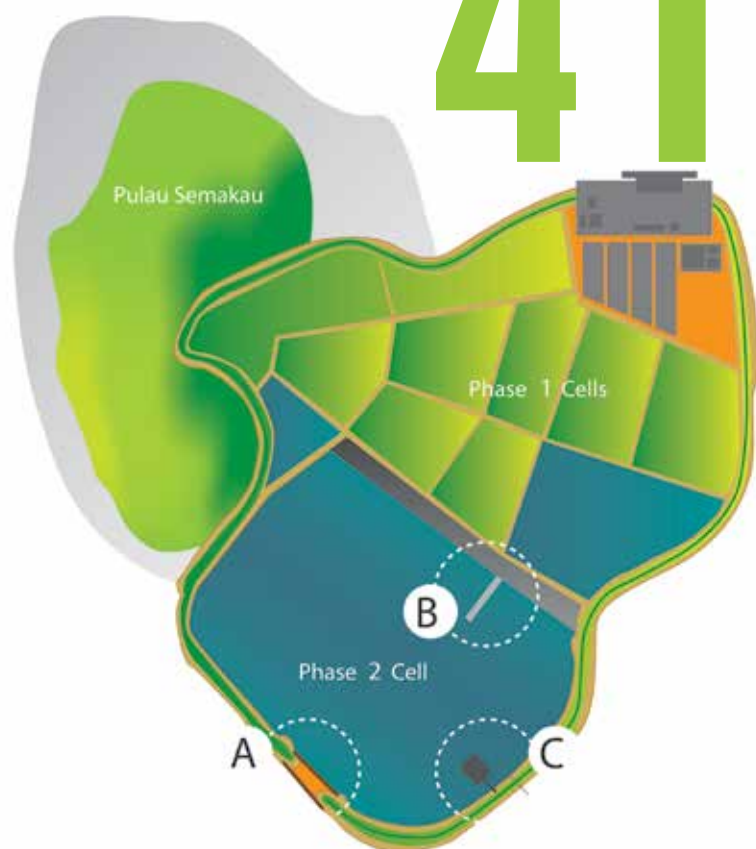
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COVER STORY 15

A GREEN HEART

Brisbane City Council's David McLachlan tells Waste Management Review that winning Keep Australia Beautiful's Sustainable City 2014 award was the result of documenting its everyday work. He also talks about the work involved in the tender process, as its contracts are due for renewal in 2018.

"WHEN WE START NEGOTIATIONS FOR A NEW CONTRACT, THAT WILL BE AN OPPORTUNITY AVAILABLE TO THE INDUSTRY TO PUT FORWARD ANY INNOVATIONS, IDEAS OR CONCEPTS THAT THEY THINK WE SHOULD CONSIDER."

David McLachlan
Chair - Field Services Group, Brisbane City Council

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From the Publisher Gathering momentum

I WAS DELIGHTED TO READ and hear some of the positive comments on our debut edition of *Waste Management Review* magazine for August/September.

Stimulating debate and providing a forum for those working within the waste and resource recovery sectors to share their views have been key elements in shaping the direction for *Waste Management Review*. It's this involvement that encourages us to seek out and investigate the latest developments concerning the industry within Australia and overseas today.

In this issue, we have worked hard to deliver quality and interesting editorial content for which we want *Waste Management Review* to be known and respected.

The industry has seen several legislative changes and grant announcements in recent months. The Clean Energy Regulator's decision to run a second Emissions Reduction Fund auction in November caused a hive of activity. While ongoing roll-outs of new guidelines and processes at both the New South Wales and Victoria EPAs has meant the industry in those states has to meet new requirements. In this edition, we asked three industry experts for their views on these developments and what they mean for those impacted by the changes (see pages 50 to 55).

The new *Waste Management Review* website has also gathered momentum since launching in early August. We have concentrated on breaking news stories, policy updates and international advances in our online platform. Informing industry of major events as they happen and interviewing key figures for in-depth articles in our magazine go hand-in-hand. Both will continue to help us deliver on our aim to become a valuable resource for Australia's growing and evolving waste management and secondary resource sectors.

As a reader of *Waste Management Review*, your feedback is invaluable. Our passion for the industry is what drives us, and insightful responses will further our understanding of the industry and help us share that knowledge out across the magazine channels.

If you haven't had a look at our website yet, check out the latest news at www.wastemanagementreview.com.au, and sign up for our free e-Update newsletter.

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MULTILIFT

News in brief

The Western Australia Government is investing \$10 million in a scheme to encourage councils to use recycled construction and demolition (RCD) materials in civil works projects.

Focusing mainly on increasing the use of recycled road base, the Construction and Demolition Product Procurement Incentive Program will invest \$10 million of Waste Avoidance and Resource Recovery Account funds in two streams over three years.

The first stream will provide a pre-allocated, non-competitive financial incentive payment for each council that uses RCD products in its operations. The second will involve open, competitive funding for buying and using RCD products by the private sector, metropolitan local governments and state government organisations.

Environment Minister Albert Jacob said it was important that better use was made of RCD materials to reduce the amount going to landfill.

WA's use of RCD materials is significantly lower than in other Australian states. Three million tonnes of this waste is generated and two million tonnes go to landfill each year.



WA Environment Minister Albert Jacob.

The Australian Battery Recycling Initiative (ABRI) is running a pilot project to collect and recycle used power tool batteries in Brisbane.

Around 3 million used power tool batteries reach the end of their life every year, but less than 3 per cent are recycled. These batteries may contain toxic materials, such as lead, mercury and cadmium, and pose a risk to human health and the environment if disposed of incorrectly.

ABRI is using the pilot to test the feasibility of collecting power tool batteries through hardware stores. It expects the trial to provide valuable information on consumer enthusiasm for such a program, costs of collection and recycling, the types of batteries available for collection by weight, chemistry and brand, and other operational issues.

ABRI developed the project with funding from the Queensland Department of Environment and Heritage Environment Minister, Dr Steven Miles, formally launched the program on 6 September.

Five Northern Sydney councils signed a 10-year regional waste collection and recycling contract with Veolia Environmental Services on 2 September.

The new contract will be managed under an agreement between City of Ryde, Hunters Hill, Ku-ring-gai, Lane Cove and Willoughby Councils.

It is expected to deliver annual savings of up to \$2 million and see 280,000 tonnes of waste diverted from landfill and converted into compost and fuel, using new mechanical biological treatment (MBT) technology.

"The joint agreement demonstrated the power of councils working

together for the benefit of the region," said Ryde's Mayor, Councillor Bill Pickering. "It sets a benchmark for other councils to follow in terms of cooperation and innovative outcomes."



AORA Executive Officer Peter McLean.

Peter McLean took up his new role as Executive Officer of the Australian Organics Recycling Association (AORA) on 1 September.

Peter worked at Keep Australia Beautiful for 10 years, and was appointed its Chief Executive Officer in 2012.

Sydney-based Peter said he was looking forward to working with AORA's members and the wider waste industry to grow the organisation.

"The chairman, Paul Coffey, understood that to move the AORA forward, it needed full-time leadership," said Mr McLean. "With the organic waste processing sector growing, I see my role to raise awareness of AORA and to shore up what is offers to members." ■

Agreenheart

THE MAN RESPONSIBLE FOR WASTE AND RECYCLING SERVICES IN BRISBANE, **DAVID MCLACHLAN**, EXPLAINS THE FACTORS BEHIND ITS SUSTAINABLE CITY 2014 AWARD WIN AND PROVIDES INSIGHTS INTO THE UPCOMING CONTRACTS TENDER PROCESS.

On the back of my wall is a picture I took when I was 21 of an overflowing rubbish bin in a London street. It must have been my destiny to work in waste." It has been a destiny fulfilled in a roundabout way for Brisbane City Council's Chair of the Field Services Group (FSG), David McLachlan.

A former ABC and Seven journalist, David became councillor for Hamilton in 2006. He was appointed to Civic Cabinet in 2008, with a portfolio of "City Business and Water Supply", which was amended to Field Services. The FSG has six areas of responsibility: asphalt manufacture and laying; civil construction; park maintenance; quarry products; city cleansing activities; and waste management, which includes recycling and resource recovery.

Although his background was journalism and corporate communications, David committed to immersing himself in waste and recycling services, and making a difference for the city.

"The key to any job is to sometimes bite off more than you can chew, then chew like hell," says David. "That's generally been my attitude at work."

Brisbane City Council (BCC) is a unique local government set-up. Brisbane is the largest city council of Australia's capital cities by geographical area, occupying some 1338.1 square kilometres. It caters to a population of about 1.1 million residents.

Councillor David McLachlan oversees waste and recovery services in his role as Chair of Brisbane City Council's Field Services Group.

Brisbane's thriving economy is driving continued population growth in the city, and by 2031, the city's population is projected to reach 1.44 million.

In November 2014, David and Head Of Waste and Resource Recovery Services, Arron Lee, collected the Sustainable City 2014 award from Keep Australia Beautiful. The city performed strongly across all areas, but also won the Dame Phyllis Frost Litter Prevention and the Energy Innovation categories, the latter for using innovative fuel technologies with its bus fleet.

David attributes some of that awards success to the city's size. It can leverage its size to achieve efficiencies and has a bigger budget to run and innovate in sustainability.

"Just because we're big, it doesn't mean we can't be green or sustainable," David emphasises. "Big doesn't mean indifference. Although we have a big reach, we have a green heart."

He underplays Brisbane's success in one of Australia's most prestigious awards for councils. He says that the

council was pleased to have won, but with the caveat that "we're not in this business to win awards".

"All we did was compile our normal business as usual activity," he states.

However, Brisbane's everyday activity in the waste, recycling and sustainability spaces is extensive.

"We focus on getting materials out of the waste stream and into recyclables," says David. "This mainly comes down to fleet – what are we putting out there to enable people to recycle."

In the last two years, BCC has introduced a 340-litre bin for recycling, as opposed to 240-litre ones. It brought in recycling in multi-unit dwellings, by working with building managers about how best to provide recycling services to them and introducing bulk bins where appropriate instead of a fleet of smaller bins.

It also introduced the award-winning Bin & Recycling App, which helps people plan and find out more about their waste disposal options.

The city has numerous public place recycling bins and offers a green bin

collection service on a user-pays basis.

BCC also has two tip shops, which it runs in partnership with the Endeavour Foundation. It aims to keep reusable furniture and household items out of landfill, and sell them to the public at a modest price.



Handling incoming waste at Rochedale Landfill.



David McLachlan speaks with employees at the Remondis-operated Rochedale Landfill.

BCC's bin collection contractors take waste to four transfer stations across the city. People can also self-haul to those transfer stations. This is where facility employees can intervene to check if the items are suitable for diversion to the tip shops.

"There's a shipping container at each transfer station to collect items for tip shops," David explains. "They help to divert a lot of materials that would otherwise end up in landfill being collected and taken to the Endeavour Foundation."

Another successful program for BCC has been its Recycling Art Competition. The competition began in 2012 and was developed to encourage visitors to the Brisbane tip shops. This explores the creative potential of recycling household items and furniture, from the tip shops or garage sales, and inspiring others to see the possibility in materials that may have otherwise been thrown away.

"It's been successful for helping us deliver our message about recyclables and getting people to re-think what they consider rubbish," says David.

He adds that BCC continues to be

proud of some of its older infrastructure and their outcomes, such as the Rochedale Landfill, which has won awards for its efficiency.

Results and feedback

BCC actively seeks community feedback on its waste and recycling services. One way is through the council's regular general surveys on attitude to a range of its services, it asks direct questions about consumers' perception of rubbish collections, recycling and litter issues.

"The 12-month average this year was a 95 per cent positive rating on service delivery around rubbish," says David.

David doesn't expect to get things right all the time. Nevertheless, BCC undertakes about 30 million bin lifts a year, but received less than 0.07 per cent missed collection complaints last year.

He states that he has been fortunate to have been supported in his role by knowledgeable colleagues. "I've been lucky enough to have Arron Lee throughout, who is a very experienced manager with a very good team," says David. "We learn from each other."

David says FSG keeps a record of

how they're tracking, so they can meet residents' expectations. It is also important when reviewing the council's contractual arrangements.

"It's helpful to know how people perceive we are performing," David adds. "If there are any issues, we can take those up with the contractors."

Upcoming tender process

BCC's in-house waste services team is lean, as all its waste services are managed by contractors who operate the landfills, transfer stations, and collection and street cleaning services.

BCC has three main contractors for waste and recycling services: Suez for bin collections, Remondis operates its transfer stations and the Rochedale Landfill, and Visy is the recycling partner.

David and the FSG will shortly begin the tender process for its next contracts, which are due to be renewed on 1 July 2018. This past May, Redland City Council lodged a submission to the ACCC, seeking a competition 'green light' for a possible joint tender with BCC to run to run waste and recyclables collection services for a

contract term of up to 16 years. By working together and securing long-term contracts, the councils are looking to achieve cost savings and improved purchasing power, economies of scale, and increased investment in the south east Queensland region.

On 13 August, the ACCC published its draft decision stating that it proposes to grant authorisation to the two councils for 19 years (including the three-year tendering process) to enable them to jointly procure, negotiate and contract for waste, green waste and recyclables collection services.

The submission was open for further consultation from interested parties until 4 September, and the ACCC is expected to make its final determination in late October or early November.

These contracts are key to Brisbane's waste and recycling service delivery, but also could have a potentially significant impact on the industry in Queensland, as the councils cover 27 per cent of the state's population.

After receiving the application, the ACCC sought submissions from 21 interested parties on the councils' "proposed conduct".

Industry peak body WRIQ (Waste and Recycling Industry Queensland) and another anonymous party asserted that allowing this agreement would "preclude unsuccessful bidders from a large portion of the waste stream across Queensland for 16 years, which would damage competition amongst service providers and reduce incentives to invest in innovation and productivity improvements in Queensland".

SUEZ and Curbside Services Pty Ltd, which are both waste and recycling collection service providers, had no objections.

David is cautious about disclosing too much ahead of the tender process, although he shares that the two eight-year term scenario is just one of several that could happen.



Inside the Brisbane City Council tip shop at Geebung.

"My main focus is to ensure value for money for ratepayers in the services they receive," emphasises David.

Many industry service providers say they need high volumes of material and guarantees of longer contract periods to make investing in new plants and technology financially viable. Whereas councils across the country need innovation and investment from their contractors to deliver the best service into the future.

David says although they have heard industry views about long-term contracts being required, that in "no way indicates that's the path we are proposing to take" and it may not meet the councils' needs. Despite the current application being for two eight-year terms, David states that there is a long way to go before the details and time periods of the contracts are finalised.

"Our officers have been talking to industry participants about what might be possible when the contracts are renewed," says David. "When we start the tender process for a new contract, that will be an opportunity available to the industry to put forward any innovations, ideas or concepts that they think we should consider."

"We have a good relationship with our current partners," David adds. "I'm sure they'll be interested at

contract renewal time to put forward their best bids."

As Chair of the FSG and integral to BCC's decision about awarding contracts, David says getting to that point is a "reasonably involved process". The council has a procurement team, as well as officers within waste services, and a legal team, who are all participants in making decisions.

If the ACCC draft determination is confirmed, the councils will then ask industry service providers to forward their suggestions and ideas, and respond to the request for the tender. Those applications are then assessed, and then the council will make its decisions about the contracts. The process will take about 18 months.

Waste minimisation strategies

Ahead of the tender process, David's focus with the FSG is to continue to meet its targets for reducing materials that go to landfill. It has a litter prevention strategy and runs targeted education campaigns to improve recycling of certain items.

The council undertakes waste characterisation surveys every year. Its education programs are built on having the knowledge of how people dispose of their rubbish.

"Bins are chosen at random and taken to a facility to examine

what people are throwing away. That's how you inform the decision about what to run with next as an education program."

For example, it recently saw more paper into the general rubbish bin, so the next campaign will be aimed at telling residents to put their waste paper and magazines into the recycling bin.

"We believe that reminding and educating people is the way to go. People by and large heed that information," says David. "If you become too prescriptive, you risk turning people off recycling."

Brisbane is not currently doing anything in the food organics recycling area. David says that this isn't something the council sees as viable for the area for the foreseeable future. It is, however, closely monitoring what other councils are doing in the organics collection space and "remains to be convinced" that it is something that it should consider. It has concerns about contaminants affecting its green waste stream, which is arriving uncontaminated at the mulching facility and working well.

"Our focus is always on providing cost effectiveness services for our residents," says David. "The infrastructure required to support an organics collection service for a city

the size of Brisbane would be very expensive."

David says the council has looked to other councils' experiences of rolling out food organics collections. His concern is about increasing contamination rates and lower customer satisfaction with the service.

"In a tropical city, you can't afford to have food waste sitting in a bin for weeks at a time," adds David. "That would lead to a lot of problems including odour and vermin. So we wouldn't go down that path without close consideration of all the options."

The city currently has food waste compacting technology operating at City Hall and the Brisbane Convention Centre, similar to the award-winning facility in Melbourne's Degraves Street. David believes that in Brisbane, such organics collection and processing facilities work well in restaurant precincts and large buildings, but implementing that citywide would be "prohibitively expensive".

The future

"One of the issues we suffer from in waste industry is a lack of awareness of how important it is to get the waste management planning right, especially to cater for population growth," states David.

Waste management and resource recovery at a commercial and domestic home level is now entrenched in the Brisbane City Plan. This has had immediate positive effects. For example, when new buildings are planned and being constructed, waste management from that new premises is considered as part of the process.

"My biggest goal is that waste and resource recovery services are properly planned for, at a city and state level," David adds.

After seven years leading waste and recycling services for BCC, David says his most rewarding experience has been seeing a reduction in waste per capita. "That was my first focus early on, from the start of my tenure in this role, and we are delivering on that objective."

David says he is keen to see ongoing innovation for Brisbane's waste services, but states that his focus "is to provide services people expect of the council in a seamless way and without imposing an additional rates burden".

David says the question he always has when considering services is what financial burden might be placed on residents if the council takes these up.

"We looked very closely, for example, at waste to energy facilities," explains David. "There's lots of newer technology coming through as well. We're interested in them and we're happy to talk to providers of those services, but ultimately it comes down to what will it cost Brisbane's ratepayers to embark on a new direction."

David says the plan is to maintain BCC's current Towards Zero Waste strategy and review and refresh that within the next 12 months, to make sure it continues to meet residents' expectations.

"People seem to think that we're doing a good job, but we can always do better, says David. "We are on the path of constant improvement to ensure a good service. ■"



A Brisbane City Council green waste collection service in action.

SAFETY FIRST

WITH FINNISH FLAIR

HIAB'S LATEST DEVELOPMENT FOR THE WASTE INDUSTRY, THE **MULTILIFT FUTURA**, ARRIVES IN AUSTRALIA THIS MONTH. THE MAN BEHIND THE FUTURA SHARES THE STORY OF BRINGING THE NEW GENERATION SKIPLOADER TO LIFE, FROM BUSINESS CASE TO LAUNCH.

Recognising the need is the primary condition for design. This was the assertion of Charles Eames, one of the most influential designers of the 20th century. Eames was greatly inspired by a Finnish architect, Eliel Saarinen, who was renowned for combining his artistic talent with tradition and innovation in his work.

These characteristics are inherent in the Finland-based team behind the Multilift Futura, Hiab's new generation skiploader. Moreover, the project manager embraced the philosophy of starting its design from a point of need – the necessity for better safety in skip handling.

Jussi Katajainen was the project owner for the development of the Multilift Futura skiploader. This quietly-spoken, knowledgeable and experienced mechanical engineer has worked with Cargotech – Hiab's parent company – in Finland since 2003. As Hiab's Product Manager – Demountables, he is responsible for researching and facilitating the development of hooklift and skiploader product lines.

Hiab's Multilift Futura skiploader in action dockside in Finland.

So in early 2014, when senior management at Hiab were considering whether to continue manufacturing skiploaders, Jussi sprung into action.

As a leading provider of on-road load handling equipment, Hiab has a particularly strong reputation for its hooklifts and after sustained investment and development has enjoyed success in this product line.

“Hooklifts have provided so much of Hiab’s business for so long that the company had been justified in focusing its efforts in this area,” says Jussi.

“I saw the opportunity for us to bring a piece of equipment that hadn’t been developed for years right up to date. I thought that if we put in at least the same effort into the design of a skiploader that we’ve been doing with our hooklifts, then we’d have an exciting product that customers would be interested in.”

Jussi championed the business case to not only retain skiploader, but to create a market-leading piece of equipment to meet the needs of the modern, dynamic waste industry customer around the world.

Through meticulous research, he deduced that a new skiploader could contribute as much as 15 per cent to

Hiab’s Multilift turnover. This would be achieved in part by meeting a major need in the waste management industry – improved safety.

“I needed to address two things in the business case,” Jussi explains. “First was to design a product that we could manufacture efficiently, and therefore offer at a competitive price for our customers. Secondly, and importantly, offer improved safety features. When comparing our old skiploader against others in the European and Middle Eastern markets, I saw that we were not offering safety features that were standard in their models.”

An important focus for Hiab’s leadership lately has been to reposition the company as a global equipment manufacturer. So making the new skiploader appropriate for customers around the world was also essential.

“The Hiab brand has traditionally been popular in Australia and Sweden, but now we’re no longer designing products for individual country markets,” says Jussi. “We are a global player and our skiploaders need to meet the needs of all markets.”

Jussi and his team got the go-ahead to scope the skiploader project in early 2014, then the designers started work

this past April. The project team had expertise from all areas.

“Initially there was me and a couple of guys from sourcing,” says Jussi. “Then we had colleagues from quality and production. In the research and development team, we had six mechanical designers and two from hydraulics and electrics.”

As the project gathered pace, the team took over one of the industrial design offices. At one point, 70 per cent of the team in the Finland manufacturing hub were involved.

A future-fit design

Addressing safety needs and making the new skiploader fit for the future shaped the new design.

The innovations of the Futura concept came about to address two challenges that Jussi had picked up from the project research: safety of the operator and safety on the road.

Jussi had discovered that the Germans were the frontrunners in skiploader safety features. His team also considered feedback from sales consultants, importers and some customers when designing the Futura.

During the process, Jussi visited Australia to better understand the

challenges experienced by skip drivers and to obtain useful information from those working in skiploader sales.

“In Australia, we met some large fleet operators, who were keen to meet occupational health and safety guidelines for their drivers and others in the environments around them,” Jussi says. “Many were worried that some skiploaders were unsafe because the bins were not secured properly.”

The Futura has been designed to be safe to operate and prevent any accidents caused by user error. It has five key new trademarked features: SafetyPlus, SkipTop, FlexControl, SwanNeck and EvoLight.

Its SafetyPlus features include hydraulic side stops, container locks and lashing points, which work together to keep the skip securely in place. External alert buzzers warn people around the skiploader that it is in operation.

The dynamic on-board weighing system also contributes to operational safety. It weighs the container during the loading movement, helping prevent overloading and its risks to road-users.

The in-built SkipTop system, an optional extra, covers loads automatically and quickly to prevent anything flying out of the container.

FlexControl, which also contributes to user safety, allows the customer to choose what control they have for operating the skiploader. Options include outside, in-cab, radio remote controls, or a combination.

“With the radio remote control, the driver can operate the skiploader around the vehicle and see what’s happening,” says Jussi. “We had FlexControl and a dynamic weighing system in our hooklifts and we now have it in the Futura. It’s totally new to skiploaders. No other manufacturers are providing this.”

The SwanNeck 1.4-metre telescopic arm has been designed to give the driver more flexibility and increased reach



The new SafetyPlus system includes hydraulic side stops...



... and container locks.

over fences and obstacles.

“If the driver can’t align the bin and truck fully, he can drive the SwanNeck over the container a little but retain stability,” says Jussi.

The EvoLight construction means the skiploader is made of lightweight, but tough, steel. This provides 300-500 kilograms extra payload, meaning users can haul more while saving fuel.

“The unit is very light,” says Jussi. “We understand it’s the lightest now on the market, but it’s built with steel castings, meaning it’s still tough and durable.”

One of the remits of the project was to make the product technically solid with an attractive design. Jussi is happy that the team achieved this goal.

“I think it looks fantastic,” Jussi states. “We are offering a factory final paint job in any colour, so it can complement a company’s branding. It’s unique, with the swan neck shape, but the design offers superior safety. We’re really proud of it.”

To offer flexibility for its sales teams and their customers around the world, Jussi deliberately scoped the new skiploader to be a modular design. The

previous skiploader was constructed as one unit, which made shipping difficult.

“Building modular components at the factory in Finland makes it easier to transport the units overseas,” says Jussi. “They arrive partially dismantled to be reassembled at the dealer’s premises.”

Celebrations and distribution

With the combination of innovative ideas, mechanical design expertise and commitment, the new skiploader project took just under 12 months from start to finish. The Multilift Futura was ready for launch in April this year.

To celebrate, Hiab invited its employees, including those who worked directly on the project, to an internal launch event at the factory in Finland. Many of Hiab’s sales consultants and an importer from the Middle East also attended.

“It was a great feeling to celebrate the culmination of the project with all the team,” says Jussi. “We were proud to have produced this skiploader in one location – Raisio in Finland – to then ship it around the world.”

The Futura is now in full production at the factory in Finland. It takes seven weeks from order for the skiploader to be ready. At the moment, Hiab has four people on the dedicated production line, but it can add additional people to meet demand, with 50 employees working across the assembly line.

Jussi says that the Futura skiploader is “a very important product” for Hiab, for now and into the future. After initially launching with a 12-tonne model, the team is now working on producing smaller 8-tonne and larger 16-tonne versions.

The Multilift Futura is available to order now. Hiab is currently scheduling a series of test-drive days with a demonstration unit across Australia, which will be announced in the next few weeks. ■



Jussi Katajainen (far right) with fellow Hiab employees at the Futura launch event at the factory in Finland.



Did you know...

The Futura skiploader has five main new features:

- EvoLight construction to carry more payload
- SwanNeck design with telescopic arms increases reach
- FlexControl with modular options allows customisation of features
- SkipTop enables automatic, fast and safe coverage of loads
- SafetyPlus features boost safety for the operator and their surroundings.

An appetite for compaction

SOLAR BINS AUSTRALIA FOUNDER AND MANAGING DIRECTOR
LEON HAYES SAYS BIGBELLY COMPACTOR BINS ARE A GAME-CHANGER FOR COUNCILS AND THOSE OVERSEEING BIN COLLECTIONS.

When trying to complete an interview, it takes several calls and messages over a week to eventually speak to Leon Hayes. The founder of Solar Bins Australia is suddenly in high demand. His company is the exclusive national distributor for Bigbelly bins, which seem to have suddenly captured the imagination of those responsible for waste management in councils, shopping centres and public precincts.

In the last few days, Leon's team has demonstrated the Bigbelly and completed 14 waste collection studies in sites as far apart as Gladstone, Westfield, Southbank in Brisbane, and Lorne. In August alone, City of Melbourne and Hume City Councils announced that they are installing Bigbelly to tackle overflowing bins in their streets.

"It's just taken off," says Leon. "Our team is continually travelling interstate demonstrating that Bigbelly bins do what we say they do."

And what Bigbelly bins do is create efficiencies across two levels.

The first is compaction. Each one has 600 litres of capacity – it can hold up to eight times the volume of common street litter bins or five times the volume of your average 120-litre wheelie bin.



Leon Hayes with a Bigbelly solar compactor at AWRE 2015.

The second is smart collection, with each Bigbelly smart bin connected to the CLEAN software management system. This creates dynamic truck routes, so that only full bins get emptied.

Together, these factors can reduce truck movements by around 80 per cent. Fewer truck movements also contribute to lower pollution, less noise and improved safety.

The flagship hopper design, soon to be updated with a more hygienic touch-free disposal hatch, keeps litter inside and deters pests and

vermin. This supports environmental services in maintaining clean, litter-free public spaces.

Bigbelly solar compactor systems offer council and commercial managers of public spaces a unique way to avoid overflowing, unsightly bins and reduce street waste collections.

Despite being solar-powered, it has been a slow burn for the US-designed Bigbelly bins to take off in Australia. Leon started his Queensland-based Solar Bins business in 2011. Shortly afterwards, it became the exclusive distributor of the solar compactor systems here.

Solar Bins' first foray into Australia's waste management market with Bigbelly was at the Australasian Waste and Recycling Expo (AWRE) 2013. The compactor won the expo's Innovative Product award in November 2013. The technology was then awarded first prize in the Smart City Application category at the 2014/15 Internet of Things Awards.

"Much of our time between 2013 and early this year has been working with Bigbelly USA and our local customers to modify Bigbelly for the Australian market," explains Leon.

Customised for Australia

While Bigbelly solar compactors can be found in 47 countries around the world, they needed adapting to work within Australian waste management practices. It was Bigbelly 1 when it was first launched in the US in 2003. It's on its fifth iteration here.

Solar Bins, as the country's sole Bigbelly distributor, became heavily involved in the research, development and testing with customers.

"In the USA and Europe, it's still common for bins to be emptied manually," Leon explains. "Whereas due to occupational health and safety requirements here, waste collection is a much more automated process."

The team worked with the manufacturers to incorporate an internal bin into the compactor that worked like a wheelie bin, which enabled seamless integration with Australian side and rear load collection vehicles.

Another factor unique to Australia is its size and remoteness of locations within a municipal area. Waste collection services can cover areas

of hundreds of square-kilometres. Therefore, the latest model is now equipped with GPS so clients can locate them.

The experience of implementation has also shaped Bigbelly's development here.

"One of the things customers said to us was that they didn't like the huge post box style handle or the risk of getting your hand trapped in there when it's compacting," Leon adds. "Engineers in the US are developing a foot pedal-operated release for the bin opening, which is due here in late October."

In between design improvements, vigorous testing has been completed with local telecoms providers for the wireless mobile technology required.

Key to Bigbelly are its CLEAN remote management system and wireless sensor. Each Bigbelly has a SIM card that communicates to the CLEAN software through the mobile network. This alerts the client when a bin is 70% and 85% full, enabling timely deployment and captures data to better plan waste collections.

"Now we've got the product and service offering right, we're ready for large-scale roll-out," adds Leon.

According to Leon, a major challenge has been educating decision-makers that the bins actually do what the promotional material says.

Companies and councils installing Bigbelly compactors have seen an average reduction of 86% in bin collections, allowing them to stretch their waste management budgets.

"When Nambucca Shire Council first trialled them in 2014, they started with six units. They now have 29," says Leon. "Its collections team used to do six pick-ups a week from its street litter bins, covering 1,200 kilometres. They now do three rounds, covering just 300 kilometres."

Not only are Nambucca Shire saving on operational and labour costs, with a population of just 20,000, they are spending significantly less on fuel.

Bigbelly's four square metres of space around the unit can also be used for companies to advertise and generate revenue for the client. The advertiser pays for the adverts on them, the council pays for the collections.

"The revenue is split between paying for the bins and realising a profit," Leon adds. "The council receives a share of the advertising revenue and a reduction in their waste management operational costs. It's a win, win, win model that has been successful in the US."

Australian customers are already signing up for the system, as Bigbelly bins can be found in 22 Australian sites, including the high-profile location of the City of Melbourne.

For more details or to enquire about a demonstration visit www.solarbins.com.au or contact 1300 893 610. ■



Bigbelly in Macksville, NSW.

Returnable bins

A solution to transporting old tyres that stacks up

A SMALL BUSINESS HAS COME UP WITH A SIMPLE BUT SMART SOLUTION TO STORE AND TRANSPORT OLD TYRES THAT MIGHT GO NATIONAL.

Don Bradman and tyre recycling – what’s the connection? You would get bonus points at a trivia quiz if you got this one right.

The Australian cricket legend was born in Cootamundra. This small New South Wales town is also home to a small family-owned business that has developed a smart way of storing and transporting end-of-life tyres (ELTs).

Waste tyre collection business JLW Services operates throughout NSW, Canberra, and up to the Queensland and down to the Victorian borders. Its owner, Jamie Walmsley, set up the company with his wife, Leah, in June 2014, after previously running a transport business in Western Australia.

The company’s drivers collect ELTs from transport depots and retail tyre outlets, and take them to processing sites in Cootamundra and Forbes. The tyres are shredded and stored for future use, or taken to local recycling company, Green Distillation Technologies (GDT), for processing.

Jamie expanded JLW Services by buying out another tyre collection business last October. As the firm grew, and the volume of tyres it collected increased, Jamie became aware of the difficulties of storing and transporting ELTs.



Jamie Walmsley, the owner of JLW Services at Cootamundra.

“Usually a tyre fitter takes the ELT off the vehicle and stores it until collection,” says Jamie. “ELTs have to be lifted on to the truck and, when it arrives at the recycling plant, taken off one at a time.”

Jamie wanted to make it easier to handle the tyres at the points of collection and unloading. In April this year, he came up with a simple yet smart idea to solve what has long been a logistical challenge for council tips, tyre retailers, transport companies and tyre collectors: a returnable bin.

The bins take the form of heavy-duty welded cages, which are simply dropped off at the customer’s premises. The customer stacks the ELTs in a bin, which

acts as a storage unit. When it is full, JLW Services collects it and drops off a new one. The bins are easy to lift and to load on and off a truck.

Jamie says that the bin system reduces multiple handling of ELTs and results in a major improvement in productivity and time efficiency for both his drivers and the customers.

“Using the bin, the multiple handling is reduced as the old tyres go straight into the bin when the tyre fitter takes them off the vehicle,” Jamie says.

The bins are manufactured on site in Cootamundra. They come in five sizes, ranging from holding 600 mixed car and four-wheel drive tyres in the 50-cubic metre size and 320 in the 25-cubic metre ones. The smallest bin, with a 10.5-cubic metre capacity, is designed for waste transfer stations and motorcycle shops.

“Our waste tyre bin system has met with very positive reaction from everyone who has used it,” says Jamie. “We can’t keep up with demand.”

As JLW Services has collected more tyres, Jamie has developed a mutually beneficial relationship with Edison Award-winning company GDT to process them, which avoids unnecessary long-time storage of the products on his sites.

“I knew GDT was setting up at Warren



Jamie with one of his fleet carrying the returnable bins.

so I arranged with Trevor Bailey, the Chief Operating Officer, to have a look at the plant,” explains Jamie. “We realised that what I do complements GDT’s business. We can help each other out.”

JLW Services now collect the bins and take them straight to GDT’s plant for processing into oil, carbon and steel.

GDT has welcomed JLW Services success in the local area, as it will need an ongoing supply of ELTs when it starts production in October after operating a test facility at the Warren site since 2009. It has appointed JLW Services as a preferred supplier.

“An efficient and effective collection service is a key element in our end-of-life tyre recycling activities,” says GDT’s CEO, Craig Dunn. “Not only has JLW Services stepped up to the plate, it has developed this important initiative to improve productivity and lower costs.

“We will have a supply of the different sized bins at Warren. All JLW will have to do is drop off the bin full of tyres, collect the bins they need and continue on their collection round, while we can use the stock of old tyres as our stored recycling raw material.”

GDT was also impressed that Jamie committed to signing up JLW Services as a member of Tyre Stewardship Australia. This means that its collection and disposal process is audited, so the tyres can be traced – a process aimed at stopping illegal exporting and dumping. The bin system also meets New South Wales Fire Brigade and insurance regulations.

With the bins growing in popularity, and the GDT supply contract secured, Jamie is now planning to expand his operations across Australia.

“We are currently collecting approximately 4,000 tonnes of tyres a year, but GDT wants 19,000 tonnes, so we are planning to increase our capacity beyond the five trucks we currently have on the road,” Jamie explains.

Jamie has also been approached by mining sites about hiring out his bins to them to collect earthmoving ELTs.

“Everyone hates tyres, they’re expensive to buy and get rid of,” concludes Jamie. “But our returnable bin system at least takes some of the hassle out of disposing of them.” ■



JLW Services employees unload end-of-life tyres from a returnable bin.

SKY-HIGH AMBITIONS

FOR AIRLINE RECYCLING

HOW QANTAS WORKED WITH CLOSED LOOP TO CHARTER A ROUTE TO BETTER RECYCLING IN THE AIR AND ON THE GROUND.

On World Environment Day this past June, Qantas launched a revamped onboard recycling program on its domestic services. Coinciding with several initiatives to improve the airline's sustainability, the program means that all recyclable waste on its Boeing 737 and Airbus A330 aircraft will be separated onboard and then disposed of as green waste and then diverted from landfill.

The Qantas program is not, however, a recent development. It is another step in a long-term, challenging project to send less waste from its flights and airport lounges to landfill. It is part of a journey that has seen various trials, negotiations with federal government and fellow airlines, as well as consultation with its employees, customers and stakeholders.

Justin Merrell, Qantas Group Manager Corporate Supply Chain and Utilities, has witnessed much of this journey. In his role, Justin manages the airline's waste reduction initiatives, innovation in landfill diversion, and

relationships with waste treatment providers. He has got his hands dirty in bringing this revamped program to fruition, and is integral to the work to do more across the airline.

Justin says that flight crew and ground employees had noticed how many bags of rubbish were coming off aeroplanes and headed for landfill.

"Our cabin crew have always been keen advocates for recycling as much as possible from the waste collected on board our flights," he says.

Qantas Group carries around 45 million passengers every year, who generate a lot of rubbish. As one of Australia's leading brands, it had an opportunity to make a significant difference and encourage other large corporates to do the same.

In 2002, as part of Qantas's commitment to improved sustainability, it engaged Closed Loop. The company started supplying Qantas with recyclable food and drink packaging, as the airline wanted to minimise how much was sent to landfill.

In 2010, Qantas brought Closed Loop into its Innovation Team to look at the sustainability of products on its international flights. Closed Loop identified the cabin and galley waste streams coming off international aircraft arriving into Sydney Airport as a potential area for recovering more recyclables.

A particular challenge for Qantas is that international aircraft rubbish arriving into Australia is classified as quarantine waste. This means that many recyclable products have been included in this waste stream and consequently ended up in landfill.

Qantas and Closed Loop wanted to find opportunities in areas with low quarantine risk to divert recyclables from the international waste stream.

In a first for the global airline industry, Qantas and Closed Loop undertook a waste audit of international flights landing at Sydney Airport in August 2012.

Closed Loop's Courtney McGregor was brought in to facilitate and report on the audit. She was excited to help Qantas learn more about the flow of products through its aircraft in order to roll out a suitable recycling program.

"Airlines have full knowledge and control of what they load, but most do not measure what comes off," explains Courtney. "The beauty of a waste audit is that you finally get to see the outcome of what you put into the system."

Waste audit

Donning protective gloves, plastic aprons and hairnets, Justin and Courtney worked with 90 volunteers to audit 27 flights for galley and cabin waste over seven days.

As a consultant who has helped many companies review their waste management and operating practices to improve recycling, Courtney says she admired Qantas for undertaking the audit to address the obstacles to improve recycling.

"I also found it a real thrill that staff from across Qantas – including cabin crew, marketing, customer service and property – volunteered to help with the waste audit," adds Courtney. "That says a lot about the culture at Qantas. They are willing to step aside from their daily tasks and roll up their sleeves, literally,

to volunteer their time towards an environmental project."

The audit looked at waste coming from the cabin, where passengers sit, and meal carts. Dozens of rubbish bags were taken off the aircraft to a separate hangar and the contents emptied out. The volunteers went through every bag methodically, sorting for recyclables, food waste and items that couldn't be recovered. Each piece of rubbish and recycling was weighed.

"We found from the cabin that mostly water bottles and plastic wrap were left in seatback pockets and almost half of the amenity kits were left unused," says Courtney. "By weight, we determined 59 per cent of this waste stream could be recycled."

Investigating the meal carts showed that most of the waste was food, unopened drinks and aluminium trays. Bread, salad and juice were the main components of the edible waste.

"By weight, 23 per cent of this waste stream was recyclable, but by volume it was 54 per cent," adds Courtney.

Qantas took immediate action after reviewing the audit results. It changed how cabin crew distributed amenity kits to passengers, which reduced the chances of any being thrown away. It revamped the Economy meal service, so aluminium trays were no longer used to hold the main meal.

Shortly after the audit, Qantas also launched "Select on Q", where passengers can select their meal before boarding. As well as providing greater choice for the passenger, it reduces unnecessary food waste on board.

"Closed Loop helped us to make better choices in the products we use



Did you know...

Qantas awards for environment and sustainability leadership:

- Eco-Pioneer of the Year in the Air Transport World Eco-Aviation Awards 2013
- Banksia Environmental Award 2012 for Leading in Sustainability

A cabin crew member serves water from a recyclable bottle.

in our business and to make changes to our processes, which enabled us to divert more waste from landfill,” says Justin.

Since 2009, Qantas has diverted 22,328 tonnes of recyclables and achieved a 28% reduction in waste to landfill.

The recently-revamped onboard recycling program is for all domestic Qantas flights. Justin is looking forward to seeing the results in a year’s time.

“We’ve made some small changes onboard which will make a big difference in the amount of recyclable waste we collect,” he says.

In a new onboard announcement, cabin crew ask customers to help them separate aluminium cans, plastic and paper cups, newspapers and plastic bottles for the cabin rubbish collection service. Each aircraft galley also has a dedicated recycling bin, fitted with an identifiable green bag, so the catering staff can quickly and easily divert the contents from landfill.

“We estimate around 400 tonnes of recyclable waste will be collected and diverted from landfill from Qantas domestic and QantasLink flights in the first year of the revamped program,” says Justin.

One of the keys to the success of this recycling program will be engaging passengers to support it. Qantas is trying to make these easy by offering another opportunity to dispose of recoverable items responsibly.

“As well as separating recyclables for collection on board, customers can take their newspapers and magazines off the aircraft and place them in the commingled recycling bins located at all the major airports,” adds Justin.

Courtney says she is delighted to see the rollout of Qantas’s recycling program throughout its entire domestic network.

“There are a lot of logistics and communications to plan with a recycling program,” Courtney says.

“Cabin crew staff have been wonderful in taking this new program on, as well as its catering centres, where the waste and recycling end up.

“Qantas had always been concerned about asking too much of their passengers in this space, so I do hope they feel the positive effect of having an environmental program that the flying public can be involved with too.”

Following the audit, Qantas and Closed Loop took the report findings to Canberra. They met with the Department of Agriculture to discuss appropriate ways to recycle waste from international flights. The department has recently approved a recycling program for Qantas flights coming into Sydney’s international terminal.

Qantas is continuing to work with federal quarantine waste regulators to determine which items may be collected and safely recycled from international flights without risking Australia’s biosecurity.

The audit and the subsequent actions to improve recycling from aircraft has also had international impact with other airlines.

“The International Air Transport

Association admired the model we used here in Australia and asked Closed Loop and Qantas to replicate it at Heathrow Airport,” says Courtney. “As a result, airlines such as British Airways and Delta and five others participated in the audit, and are now seeking approval to recycle from their local authorities.”

The onboard recycling program is just one of a series of initiatives Qantas operates in its commitment to be Australia’s “greenest airline”.

A Qantas Board sub-committee reviews the Group’s environment strategy every year, which includes a 2020 waste diversion target. Representatives from all major business units come together to discuss and develop initiatives to achieve this target.

“One of our recent success stories has been starting an organic waste collection service, provided by Suez,” Justin explains. “This enables food waste to be separated and collected from our lounges and corporate headquarters for composting.”

Qantas has also trialled organic composting units on site, provided by Closed Loop, and returned the compost to employees for their gardens.

Since 2013, Qantas employees have been collecting, sorting and transporting recyclable articles from inbound Qantas flights in South Australia to local recycling centres in Adelaide. The Qantas Q-Can-Crew has collected 10 cents from every aluminium can and glass bottle recycled at the SA depot, raising more than \$45,000 a year for children’s charities.

“The company has increased its use of container deposit schemes in South Australia and the Northern Territory this year, and is giving all revenue collected straight to charitable organisations,” Justin says. “The revamped domestic onboard recycling program will generate even more donations.”

A future-fit sustainable airline

Qantas and Jetstar were among the first airlines in the world to introduce a voluntary carbon offsetting program – Fly Carbon Neutral – in 2007. It is now the largest airline carbon offset program in the world. To mark World Environment Day, Qantas updated this program, giving customers the option of paying a small amount to offset the

emissions associated with their flight.

All proceeds go to community projects in Australia or overseas, which generate carbon credits of more than \$1.2 million a year. More than two million tonnes of carbon emissions – the equivalent of planting 12 million trees – have been offset since Qantas and Jetstar introduced the program.

Qantas is also replacing all lighting in operational areas with energy-efficient LED lights and introducing new, lightweight freight containers that will cut fuel consumption.

In 2013, Qantas constructed the largest commercial tri-generation (cooling, heating and electricity) project in Australia. The plant uses natural gas to produce more efficient, lower carbon energy, which powers the airline’s multiple multi-storey building headquarters, catering centre and jet base in Sydney. The plant has reduced CO2 emissions by 23,000 tonnes a year – equivalent to taking 7,000 cars off the road.

Qantas is part of the NSW Office of Environment and Heritage’s Sustainability Advantage program. It is exploring a number of circular economy

projects and will be sharing details of some new initiatives in the near future.

Justin adds that Qantas continues to work with Closed Loop to meet its waste reduction targets and to identify opportunities around the business.

There is no doubt about the airline’s ongoing commitment to its sustainability targets and its potential to have a positive impact on recycling behaviour and projects across Australia.

“Qantas is in a great position to reach millions of Australians and set the tone for recycling outside the home,” says Courtney. “I see Qantas as an environmental leader not just in the airline industry, but across the corporate world.”

More details on Qantas recycling and sustainability initiatives are available at – www.qantas.com.au/environment. ■

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Did you know...

Since 2009, Qantas has:

- diverted 22,328 tonnes of recyclable waste from landfill
- achieved a 28% reduction in waste to landfill.



Justin Merrell sorts plastic bottles during the Qantas waste audit.

Some of the volunteers getting their hands dirty in the waste audit, including Closed Loop’s Courtney McGregor (second left) and Justin Merrell (far right).

A RECIPE FOR Success



Vin Cheers, the Managing Director of Victoria-based VinsBins.

AS FAMILY-RUN WASTE COLLECTION AND RECYCLING COMPANY VINSBINS MARKS ITS 15TH BIRTHDAY, ITS OWNER, **VIN CHEERS**, REFLECTS ON THE PART PLAYED BY HIS TEAM AND THE EQUIPMENT THEY USE IN RUNNING A SUCCESSFUL BUSINESS.

VinsBins may be a small business, but its owner has always seen the big picture when it comes to driving it forward.

Managing Director Vin Cheers has a straightforward recipe for building the business: employees, equipment and efficiency.

“It’s the calibre and strength of the staff that help us deliver the best service to our customers,” says Vin. “Having said that, you can’t run our sort of business on worn-out gear. We’re big fans of using technology to help things run smoothly and efficiently.”

‘Efficiency’ is Vin’s guiding principle. He continually analyses and reviews the company’s operations to ensure maximum efficiency.

Alongside that, he is committed to running a waste business with the environmental aspirations more commonly found within the sustainability report of a large corporate.

Based in Dromana, Victoria, VinsBins started from humble beginnings. Vin had been working as an interstate truck driver for many years when he decided to open his own business in 2000. Supported by his wife, Jane, he set up from his home on the Mornington Peninsula with one hook truck and two homemade bins.

“I had the truck branded with my name plastered all over it – VinsBins – much to the embarrassment of my children, who I used to drop off to school at that time,” recalls Vin.

VinsBins was then at a small yard in Rosebud for 10 years before moving to the current 6,150-square metre Dromana site in 2011.

Central to the premises is a large transfer station, which copes with

deliveries of up to 850 cubic metres of waste each day.

All trucks return to the transfer station and each bin is unloaded directly onto the concrete floor. Drivers then hose out the empty bins, ready for the next delivery.

A team of 12 employees in the shed drive skid steer loaders, excavators and forklifts to sort the bin contents. A typical eight-cubic metre load can be dropped and sorted within 15 minutes.

The concrete, steel, clean wood, green waste and cardboard are separated and sent off in bulk containers to recyclers. The bricks and soils are fed into a two-stage trommel and picking line. As the bricks and masonry are fed off, any general waste for landfill is dropped onto a walking floor that feeds a further bulk container.

The soil waste is fed into a Bost soil screen and then sold on to landscaping suppliers.

Vin says constructing the recycling plant has two benefits for the business: it saves money by paying less in landfill charges, and it generates some income from selling the sorted recycled materials.

“We’re not trying to save the world, but to reduce how much waste goes directly to landfill, and reuse materials that can be recycled,” Vin says. “Ten years ago all of the waste we received was destined for landfill, but now we’re down to only 18 per cent, a number we verify and audit quarterly.”

Adding to VinsBins’ green credentials, the premises have 30 kilowatts of solar panels that provide 90 per cent of its power needs, and 66,000-litres of tanked grey water for vehicle and bin washing.

Today, the company has around 40 employees, 15 trucks and more than 500 smartly-branded bins. It sends out and collects between 100 and 150 bins a day.

Despite its growth, VinsBins is still a family affair. Vin runs and shapes the direction of the business. Jane is a director and the office manager. Jane’s sister, Virginia, has been on board for about 12 years overseeing administration and logistics despatch. Their son-in-law, Mark Yeats, is the business services manager.

Out of the 40 or so employees, there are many with long service, such as Tony Williams, the yard manager. Vin attributes much of his company’s success to them.

“Our business has been growing by about 15 per cent a year for the last few years, and a lot of that is due to our staff and reliable equipment,” says Vin. “Our people – their hard work, attitude and loyalty – is a real strength. But to that you need to add quality equipment and fleet.”

One area where Vin has prudently invested to maintain efficient operations is in trucks. He’s added to the fleet gradually as the business has grown.

Wedded to European trucks for his larger transport applications, Vin has switched to Scania recently as part of a calculated and careful fleet acquisition program.

“About two years ago, Scania’s sales manager for east Victoria, Ben Nye, came over to give us a test drive of an eight-wheel demonstrator,” says Vin. “I was impressed by how the vehicle drove and its features, and said when I was in the market for a truck I’d be in touch.”



Vin Cheers with some of his Scania fleet at the VinsBins premises in Dromana.

In 2014, Vin invested in two 6 x 2 P280s, both of which have had the wheelbase shortened and lifting tag axle specified, and a one-year-old 6 x 4 P320 for the fleet.

“The lifting tag axle reduces wear when negotiating tight collection locations and for manoeuvring at the waste transfer station,” Vin explains. “I like the fact Scania’s come with weigh scales on the axles with the readout in the dash display. It means we know how heavy we are and removes the potential for a ticket for overloading.”

Another reason Vin chose Scania was fuel economy. They use about 25 per cent less fuel than other trucks, about 30 litres per 100km. VinsBins also added air deflectors to the roofs to further increase the fuel saving and provide an extra promotional opportunity.

“Euro 5 Scania’s are more fuel-efficient and emit fewer pollutants. For a company aware of its carbon footprint, this is important,” he says. “The newer vehicles have a lower tare weight, so they can carry a heavier payload.”

“This is an industry built on low margins and high turnover of bins,” explains Vin. “Running reliable vehicles that offer efficient fuel consumption and can carry more

helps keep the business competitive.”

Vin’s drivers have also taken the Scania Driving Training program, where they learn how to drive the truck to achieve more efficient fuel consumption.

Scania’s trucks have an on-board system – the multi-function display – which shows the driver how changing their driving style can reduce fuel use by about 8 per cent.

“At first, the drivers weren’t sure about the training,” says Vin. “But they got on board when I explained that with the money saved on fuel, I could buy other equipment to make the business stronger.”



One of the VinsBins fleet loading a skip to take to a customer.

When it comes to choosing new vehicles, Vin says experience helps when finding the right one to meet the company’s needs – both his knowledge and that of the dealer account manager.

“I’ve been around trucks all my life, so I have a good understanding of what I’m looking for,” Vin says. “So I normally go straight to Ben at Scania, drink their coffee, and discuss what I need and he advises where they can help.”

Vin has also been impressed with the Scania aftersales experience. Its service centre at Dandenong maintains

the vehicles, which also helps in the smooth running of the business.

When a vehicle is due for service, it will drop a bin in Dandenong, proceed to the service centre, and the driver will be collected by another truck in the area, with the reverse occurring for collection.

The VinsBins vehicles are smartly presented, constantly moving, and well looked after by a loyal and respectful group of drivers, who are fiercely protective of their mobile offices.

“Initially they were apprehensive about the Scania’s because most drivers prefer a manual gearbox and these were automatic, but they are happy now”

Vin explains. “They enjoy the driving environment. Scania are not physically demanding to drive and the engine is quiet. The cab is comfortable and has features like seats with built-in hands-free for mobile phones.”

VinsBins has a number of supplier relationships that contribute to the smooth running of the business.

All Vin’s trucks are fitted with an Italev hook made by BoB Systems. Wastech Engineering, with whom Vin has also had a long relationship, fits the hooks and looks after his hydraulic needs. Hyva also modifies the trucks with hooklifts, trailer and ancillary equipment.

Rear Vision Systems supplied the fleet’s on-board cameras. They are fitted to two areas of the vehicles. The one at the back of the truck facilitates hooking up the skip, and there are two inside the cab, one facing the driver and one facing out of the window.

“It’s a quality tool that gives us the ability to check what happened in the event of an accident or complaint,” Vin explains. “If we get a call about an incident we can review the footage. It settles issues very quickly and protects our reputation.”

“We also record the drop and sort process for safety and efficiency purposes,” he adds.

GPS, supplied by Navman, is also vital to operations. With each truck making around 12 bin movements a day, GPS allows the office to monitor the fleet’s location. This helps the business be responsive to last-minute or urgent customer orders.

“Our booking system is integrated with full vehicle tracking,” explains Vin. “If someone phones for a bin drop and we can see a truck with an empty bin is on its way to a non-time-sensitive delivery nearby, we can redirect that vehicle.”

“Sometimes the customer has barely put down the phone before the bin

turns up and that really impresses them. If customers are impressed by us once, they will use us again.”

The business uses additional technology to streamline operations.

“We send jobs directly to the drivers’ iPhones or iPads, so they have all the job information electronically in real time,” Vin adds.

He may spend most days in the office, but Vin likes to keep in touch with the coalface of the business.

“I still drive once a fortnight,” Vin says. “I like to understand what my drivers experience, to get a feel for how the trucks perform, and to see where we can improve.”

Vin is looking forward to building on the company’s strong foundations to secure continued growth in the future. With its large premises, he is applying for planning permits to expand the operation. He expects to have a new workshop built by the end of the year. This will provide more space for the company’s two full-time mechanics/fabricators who maintain the fleet and bins.

“We’re very competitive and we strive for growth,” Vin concludes. “We want to do all we can to remain efficient and offer a professional, value-for-money service to our customers.” ■



The VinsBins employees pride themselves on their prompt, friendly customer service.

Transpacific Cleanaway Commercial and Industrial Recycling Facility Altona, VIC

DESIGNED TO MAXIMISE STORAGE SPACE AND GUARD PEDESTRIAN SAFETY, **TRANSPACIFIC CLEANAWAY'S COMMERCIAL MATERIALS RECOVERY FACILITY** IN VICTORIA IS THE TEMPLATE FOR ITS FUTURE RECYCLING CENTRES.

Finished product storage of cardboard, box board and container cutting bales ready for export.



Did you know...

Transpacific Cleanaway in Australia:

- Operates 200+ sites
- Delivers to 100+ councils
- Services 65,000 commercial and industrial customers

The Transpacific Cleanaway commercial materials recovery facility (MRF) in Melbourne's western suburbs is a model that demonstrates the value of experience and partnership when planning a site.

The MRF on Harcourt Road, Altona, opened in October 2012 and has 15 employees. It provides Transpacific Cleanaway with a central facility for the company and its customers throughout Victoria to process and bale recovered waste. It handles cardboard, plastic, news print and Styrofoam, among other materials.

Rob De Angelis, Transpacific Cleanaway's Recycling Manager for the Victoria and Tasmania regions, has managed the site since its inception. He explains that it came about through a chain of events.

"Cleanaway previously had a smaller MRF located in Altona. Then five years ago, we acquired two recycling companies with facilities in Victoria. Running three sites was not cost or resource efficient. At a similar time, packaging company Orora was closing its Fairfield Mill in Victoria and was looking for another facility to use as a recycling centre to process and pack its waste cardboard."

The two companies negotiated to co-locate at one site, where Cleanaway could process Orora's waste cardboard along with product received through its own business.

Relocating to a new, unpopulated warehouse also presented a rare opportunity to design the layout from scratch and customise it for the business's needs.

Rob says that Peter Rowland, from Rowland Engineering who was to supply the MRF equipment, and he worked together for two days solid to plan the design of the warehouse to make it efficient and safe.

"We had strict criteria for the site," explains Rob. "The first was safety,

as we wanted to ensure that the interaction between mobile plant and pedestrians was minimal.

"The second was using space effectively. In many recycling centres, when they install a baler they lose a lot of workable area because of bad positioning. We wanted to maximise working areas.

"The final must-have was a large receivable area for unprocessed stock. So if we ever had a long period of downtime, we could store a large amount of loose product."

Rob also didn't want his employees to touch the product more than once, if that could be achieved.

This partnership between Rob, with his practical knowledge of how a recycling centre works, and Peter, with his experience of plant equipment, led to the meticulous planning of the perfect MRF.

"The entire site and the shed is set up for a smooth end-to-end process," says Rob. "At one end, you've got receivable product separated by type and the processing area. The middle of the shed houses the processed product, and at the other end is the baled product ready for sending out to market."

The site opened in Spring 2012, ahead of the other plants closing. The facility uses Godswill baling equipment. It also has features like a bespoke ramp, which means forklift operators can move bales directly from the storage area and drive them straight into the truck's trailer.

The main baler went live in October 2012 and the site started to receive high volumes of cardboard from December. This was followed by the commingled "harvest" sorting, plastic and news print, which came online in stages up until July 2013.

The recycling process on site using the specific equipment is efficient, requiring only a small operations team.

The main waste that comes into



Altona is clean cardboard, and only one person is needed to feed that baler. The facility has one person on plastic processing and the news print section requires one or two people. The commingled recycling section sees manual sorting of cardboard, paper, film and Styrofoam. A conveyor belt pushes this up the sort line for a small team to process by hand.

Measures to ensure safety and support smooth administration are clear to see. Trucks arrive into a one-way road to a dedicated reception and weighbridge station. The warehouse has clearly-marked bays for trucks bringing in materials and for those collecting processed product. Around the entire site are clearly-marked walkways, including areas behind the equipment which are protected by moveable wooden walls.

Drivers like the site due to its design, which facilitates fast and convenient drop-offs and collections. Employees and drivers also appreciate its on-site amenities. It has a fully-equipped staff kitchen and dining area, with complimentary drinks and newspapers, a covered outdoor smoking area, and well-maintained bathrooms. The facility also houses offices and meeting

rooms, which are well-used by visiting employees hosting training courses.

The overall result of Rob and Pete's meticulous planning is a site that is practical, efficient and safe.

So pleased is Transpacific with the facility that it is using it as a template for its future commercial MRFs. The first in Hemmant, Queensland, is due to come online in Summer 2015/16. That will be followed by one in New South Wales.

The Altona commercial MRF makes a huge contribution to Transpacific Cleanaway's overall resource recovery and recycling capability in Victoria.



It is now the main disposal point for recycling for its network infrastructure in the state, for both commercial and industrial customers. It also provides centralised distribution to commodity markets for the company's six regional baling sites across the state.

"The metropolitan trucks dispose of their recycling here and the regional sites have their own mini recycling facilities," explains Rob. "They sort and process the materials coming in. They bale it and send it here. We cross docket it, and then send it out to our markets."

Transpacific Cleanaway is a signatory to the Australian Packaging Covenant,

and the site receives some product from specific channels as a result. News print arrives from media companies, Fairfax and News Limited. The company also has agreements with Devondale Murray Goulburn to recover its dairy packaging.

Rob says that large corporates and manufacturers consider resource recovery of their waste as pivotal to their sustainability story, which contributes to their reputation with their customers and stakeholders.

"It's a growth area," he says. "The market now looks at the cost benefits of recycling – landfill prices have increased. Whether the client receives rebates, it's a cost neutral service or a minimal charge, it makes good commercial business sense to recycle your business's waste."

Another key to the success of the Altona site is the growing manufacturing and third-party logistics sectors in Victoria, mainly around food, beverages and furniture, which use a lot of packaging. In addition, many goods are imported.

"The more we import, the more packaging that creates," says Rob. "That material can be recovered."



Did you know...

The commercial MRF at Altona:

- Offers a central baling, packing and distribution to markets for 6 smaller recycling sites in Victoria
- Processed 85,000 tonnes of material in the final year to 30 June 2015
- Receives between 120 to 250 tonnes of product a day.

The next step is to find markets for the recovered materials, which are distributed directly from the Altona site.

Waste packaging is seen as an increasingly valuable commodity to trade. Transpacific Cleanaway forecasts how many tonnes of categories of material the Altona site will have available through its central trading desk in Brisbane. The team then approach markets, nationally and overseas, to find contracts based on those forecasts.

Rob says that business managers have become very aware of the value of waste cardboard and plastics, and the commodities present in other end-of-life products. On the other hand, they're not always aware of the costs involved in collecting it, transporting it, processing it and send it out to market.

"A lot of queries we get now are around how much would we pay for a company's waste," explains Rob. "It comes down to how it's presented, how much of it there is, and the market for it. It's then a commercial process to work out the cost involved for us, as to what we would pay for that product."

The products the Altona site distributes to market include OCC 90/10 – a high-quality corrugated

cardboard. It specialises in newspaper, graded ONP 9, which means the product was uncirculated and has not been in a municipal MRF. It also sells mixed plastic film, low-density polyethylene (LDPE).

Key to securing the ongoing success of Transpacific Cleanaway's commercial MRF in Altona is volume of material. The MRF currently operates between 4.00am and 5.00pm Monday to Friday, and on Saturday mornings. However, it has the capacity to handle double the amount of product it is currently processing, and could run 24 hours, seven days a week.

"Volume dictates what we do and we react to what the market wants, both for recovery and supply of materials," says Rob. "More volume means reduced processing costs. For a new waste product stream to be viable, it has to have high volume around it."

Rob says hard plastics could be the next stream it considers processing at Altona, but that building growth in its existing markets is the immediate focus.

Another important role for the Altona site into the foreseeable future is for community engagement. Transpacific has become more active in educating the public about recycling and resource recovery. It welcomes school visits and tours at its commercial and municipal MRFs and landfills, and the Altona site is ideally placed to host such tours.

Rob believes that education is the key to recycling. He says giving people an insight into a MRF in action, like Altona, and what happens to items they throw away, can help the business.

"Recycling from source is paramount," says Rob. "If rubbish is sorted correctly when it leaves the home or the business, it's easier to handle and process out to market."

The Altona MRF processed 85,000 tonnes of recycled material in the last financial year, so Rob knows better than most the benefits of better recycling for his team and the business. ■

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A landfill with a DIFFERENCE

An aerial view of the completed Phase 2 of Semakau Landfill, June 2015.

HOW PHASE 2 AT SEMAKAU LANDFILL WAS DEVELOPED TO COMBINE ADDRESSING SINGAPORE'S WASTE DISPOSAL NEEDS WITH PROTECTING A UNIQUE HABITAT FOR VISITORS AND THE ISLAND'S WILDLIFE TO ENJOY.

An island country with a total land area of only 718 square kilometres but a population of around 5.5 million, Singapore has had to be creative about managing its waste.

Nowhere is that innovation more evident than at Semakau Landfill. This island facility is a remarkable feat of engineering. It demonstrates its developers' commitment to protect the marine habitat while providing a much-needed solution to the country's waste disposal needs.

Singapore's National Environment Agency (NEA) sees Semakau Landfill as unique. It is a popular attraction for educational and nature tours, as the site is scenic, and supports a thriving diverse marine ecosystem and wildlife.

The NEA opened Phase 2 of Semakau Landfill this past July, but getting to that point has been a 20-year journey.

A recent history of waste disposal in Singapore

Semakau Landfill is located eight kilometres south of Singapore. Its construction came after decades of almost primitive management of waste. As recent as the 1960s, municipal employees used to shovel rubbish into handcarts, then dump that into swamps at three regional sites.

When those sites reached capacity in the early 1970s, three more were allocated. However, the Ministry of the Environment started to recognise that tipping untreated solid waste into swamps was inappropriate in the long term, not least because it would run out of suitable land.

At this time, Singapore's economy and population was booming and generating more solid waste, increasing from 600,000 to 940,000 tonnes a year between 1972 and 1980.

The government turned to incineration plants to address the problem. It opened its first waste to energy plant, and the first outside Japan in Asia, in July 1979. Others were to follow in 1986, 1992 and 2000.

By the mid-1980s, the Ministry was investigating other solutions. Its forecasts had suggested that continued population growth meant its landfills would be full by 2000.

Struggling for suitable sites for a landfill, the Ministry started considering offshore as a possibility. It sent engineers to examine nearshore landfills in Japan and refuse barging systems in the United States to evaluate how these might be adapted for Singapore's situation.

The Ministry engaged a specialist consultancy to undertake a detailed analysis of the design, construction and operation of an offshore landfill at Semakau, and evaluate its potential



A dump truck discharges waste into the new cell at Semakau Landfill Phase 2.

impact on its marine environment. It determined that the plan was viable, and made recommendations to protect the mangroves and coral reefs.

Despite the significant investment to construct and run an offshore landfill, the Ministry concluded that this was the best long-term solution to manage Singapore’s growing waste output.

The government approved the Ministry’s proposal for Semakau Landfill in 1994, and development began in 1995.

Phase 1 build

The construction of Semakau Landfill was divided into two phases.

The landfill was created by building a seven-kilometre perimeter rock bund to enclose 350 hectares of sea space off Pulau Semakau and Pulau Sakeng. This was lined with an impermeable membrane and a layer of marine clay to contain leachate from the refuse within the landfill area.

The project’s chief engineer, Eng Tiang Sing, recalls that building the

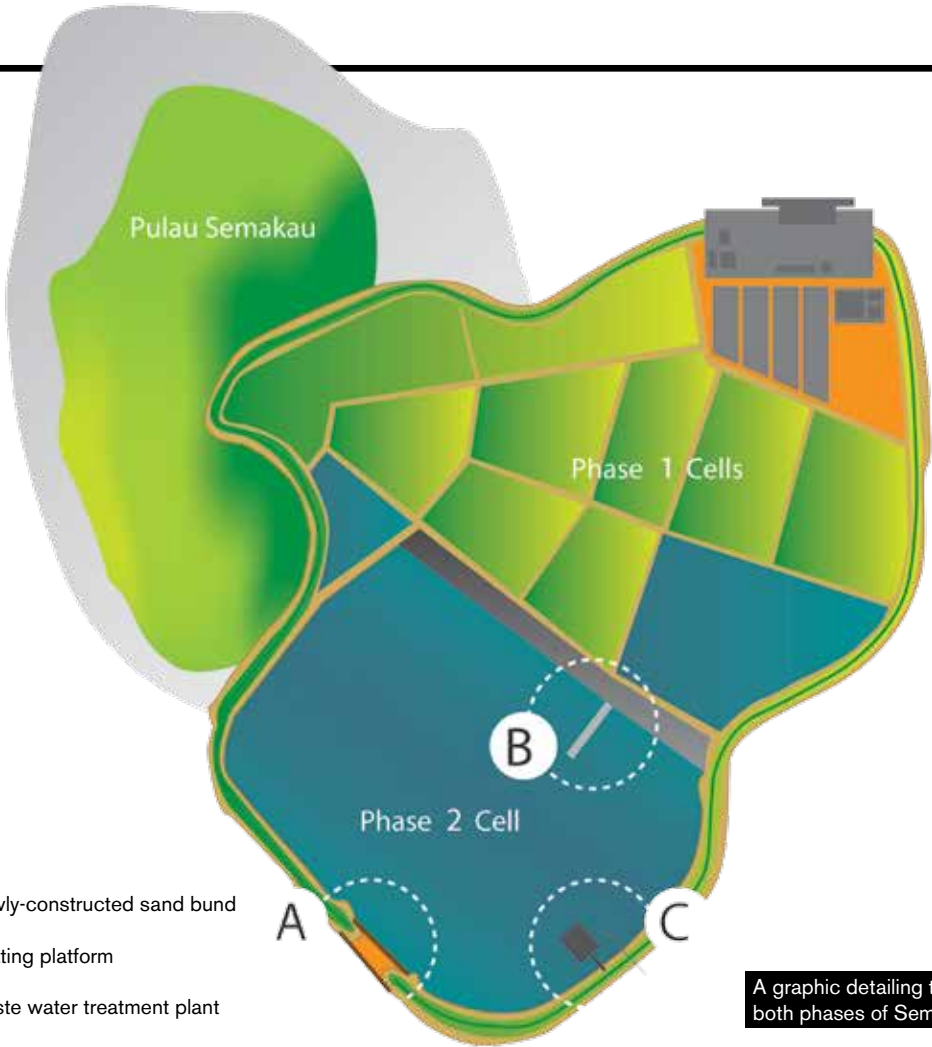
outer bund was the hardest part of the four-year development, as most of this was done underwater.

“Divers had to work in shifts around-the-clock to place the geofabric and geomembrane by hand underwater, while coordinating with the floating barge on the surface,” explains Eng. “At the same time, huge rocks had to be lowered piece by piece with precision from the barge using GPS, and placed in their correct positions.”

The sea space within the bund

WASTE FACILITIES IN SINGAPORE

FACILITY	YEAR COMMISSIONED	COST TO BUILD	DAILY CAPACITY (TONNES)
Ulu Pandan Incineration Plant (Closed 2009)	1979	SG\$130m	1,100
Tuas Incineration Plant	1986	SG\$200m	1,400
Kim Chuan Refuse Transfer Station (Closed 2001)	1986	SG\$30m	1,500
Senoko Waste-to-Energy Plant (renamed 2009)	1992	SG\$560m	2,100
Tuas South Incineration Plant	2000	SG\$890m	3,000
Keppel Seghers Tuas Waste-to-Energy Plant	2009	SG\$160m	800
Semakau Landfill	1999	SG\$610m	28.1m cubic metres total capacity



- A The newly-constructed sand bund
- B The floating platform
- C The waste water treatment plant

A graphic detailing the layout of both phases of Semakau Landfill.

HOW PHASE 1 OF SEMAKAU LANDFILL OPERATION WORKED:

1. When arriving at Semakau Landfill, the barge berths at the enclosed transfer building. The tugboat then disengages itself and returns to Tuas Marine Transfer Station (TMTS) with an empty barge.
2. Large excavators with interchangeable, specially-designed grabs unload the solid waste from the barge onto a 35-tonne payload off-road skip.
3. A 10-metre-wide roadway along the top of the bund provides access to all sections of the landfill. The trucks drive to a designated tipping site and unload the waste into the cell. Bulldozers and compactors then level and compact the waste.
4. Once filled to ground level, each cell is covered with a layer of earth., Grass and trees then take root to form a green landscape. A new tipping cell is created by sealing off the concrete pipes that connect the cell to the sea.

was divided into two sections: one half housed 11 wet cells separated by sand bunds; and the other formed a lagoon connected to the sea by a gap in the bund. The inactive landfill cells were flushed daily with seawater from connected concrete pipes. When a cell was needed for tipping, workers sealed the pipes during low tide.

The Tuas Marine Transfer Station was built at the same time as Phase 1. This serves as an intermediate collection point for ash from waste-to-energy plants and non-incinerable waste before transportation to Semakau. It was strategically located next to the Tuas South Incineration Plant.

The Ministry also built ancillary amenities on the island – including a wharf, workshops and a sewage treatment works – to ensure that the operation was self-sustainable.

Semakau Landfill Phase 1 was completed on schedule within four years, and cost \$610 million. Formally opened on 1 April 1999, it became Singapore’s only landfill for waste disposal.

The facility successfully fused with the island’s marine ecosystem and habitats, and was landscaped to make it a beauty spot. When the Environment Minister visited in August 2004, he saw the potential for developing it into a leisure and educational destination.

In July 2005, Semakau Landfill was officially opened to the public for bird watching, intertidal walks, astronomy and fishing.

Building Phase 2

The NEA forecasted that Phase 1’s landfill cells would be filled by 2016. Therefore in February 2014, work



Dr Vivian Balakrishnan, Minister for the Environment and Water Resources (centre), and NEA CEO Ronnie Tay (far right) with the project team behind the construction of the floating platform at the launch of Phase 2.

started on converting the remaining 157-hectare sea space into landfill space. The NEA built it with the aim of balancing development of a much-needed waste disposal facility with conservation of the local habitat, which hosts a vibrant ecosystem and rich biodiversity.

The construction team opted for a one-cell layout with segregation for Phase 2 to avoid flotsam problems that occur when disposing non-incinerable waste into a large area of water. They closed the 160-metre gap at the southern perimeter bund to create the second single cell. This was also designed to maximise the landfill capacity and minimise the amount of sand required, reducing the overall construction cost as a result.

Building Phase 2 required two feats of engineering: a 200-metre long floating platform and a floating wastewater treatment plant.

The floating platform means the dump trucks can discharge incineration ash directly into the cell. As the cell covers a large area on an uneven seabed, a floating platform is needed so ash can

be spread to level the seabed to a two-metre depth. Only then can workers use bulldozers and compactors to undertake conventional landfill operations.

After enclosing the cell, the water inside builds up and is displaced by ash and rainfall. To prevent flooding, the excess water within the Phase 2 cell is treated at the Wastewater Treatment Plant to meet Trade Effluent Discharge Standards, before being discharged into the open sea.

Concurrently, NEA embarked on two major projects to preserve the marine life in the Phase 2 development area. Workers harvested over 700 colonies of corals in the lagoon and transplanted them to Sisters' Islands marine park. From June 2015, NEA also worked with nature groups to catch the fish within the Phase 2 lagoon and transfer them to the open sea. This project alone took four months to complete.

Opening Phase 2

Semakau Landfill Phase 2 officially opened on 11 July.

The guest-of-honour at the opening was Minister of the Environment

and Water Resources Dr Vivian Balakrishnan. He officiated the first discharge of ash into the new Phase 2 cell in front of many of those who had worked on the project and site employees.

“The expansion of Semakau Landfill is testament to Singapore’s engineering capability and the success of its novel approach to waste management,” Dr Vivian Balakrishnan said. “While it is necessary to meet the waste disposal needs of Singapore, our priority has always been to ensure that it is done in an environmentally sustainable way.”

The Phase 2 cell provides an additional 17-million cubic metres of landfill capacity, which is expected to meet Singapore’s waste disposal needs until at least 2035. ■

The editor would like to thank the National Environment Agency for its help in producing this article.

The editor referenced the second edition of the NEA’s publication *Habitats in Harmony: The story of Semakau Landfill* for details of the landfill construction project.

waste

MANAGEMENT REVIEW

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MANAGEMENT REVIEW

AUGUST/SEPTEMBER 2015

Resource revolution

Emmanuel Vivant shares how Suez Environnement is preparing for the future of the industry

FEATURES

- The story of the inventor of "green steel"
- Australia's first Edison Award winner
- Tracking technology in waste collections

REPORTS

- Southern Citi's new hydrotreater plant
- How South Korea has approached waste management legislation
- A successful fleet equipment partnership
- Victoria launches new waste infrastructure plan

Waste Management Review provides a window on the continual developments within the waste, recycling and resource recovery sectors.

Published bi-monthly, the magazine includes in-depth interviews with prominent industry figures, and profiles on people and companies innovating new technology or trialling new solutions. The publication features the latest products to hit the market and showcases successful collaborations between equipment suppliers and service providers.

Waste Management Review is a "must read" for those leading, working in, or associated with the industry.

AUSTRALIA'S SPECIALIST WASTE MANAGEMENT MAGAZINE

In each edition, we feature a selection of the latest products and equipment to hit the market. This time, we include a range of products that are growing in popularity. They either encourage recycling and diversion of items from landfill, or collect waste while deterring pests and vermin.

/ KITCHEN TIDY BIN & BAGS

Cardia Bioplastics' Kitchen Tidy bins and compostable bags are effective tools for capturing kitchen food scraps for diversion from general waste into municipal organic waste collection services.

The Kitchen Tidy bags are strong and durable, manufactured to have increased resistance to heat, leaks, punctures and tears. They are environmentally friendly, made with GMO-free, renewable, plant-based Cardia Compostable material, which has been internationally certified as compostable and biodegradable. This is also breathable, which helps to control odour and dissipate moisture.

The bags can be composted in aerobic, industrial composting plants. They are ideal to encourage engagement and improved compliance with councils' organics collection services. The 8-litre bags are available in bulk quantities.

The Kitchen Tidy bin is designed to house the bags. Its compact shape and small footprint makes it easy to fit on a bench top or in a cupboard. Together with a compostable bag, the Kitchen Tidy bin enables aeration of the bagged food waste and encourages an aerobic environment that helps to minimise unpleasant odours.

The Kitchen Tidy range is part of the Cardia Compostable and Biohybrid product lines. These include 240-litre garbage bags and dog waste bags, which are proving popular with councils in Australia.

www.cardiabioproducts.com



/ MINT-X GARBAGE BAGS

Mint-X garbage bags are designed to improve pest control in commercial kitchens and garbage collection areas.

The bags are made with heavy-duty recycled plastics and are chemical free. The plastic material is infused with four natural food-grade oils, including mint and eucalyptus. This scent is pleasant to humans, but a deterrent to rats and other pests.

The bags keep cockroaches away from kitchen bins and food handling areas, and deter rats from chewing into the garbage bags in bin rooms and loading docks.

Using these bags also helps to protect the bins from soiling, significantly reducing time and resources used on bin washing. The minty scent has been proven to last at least seven days and up to 14 days in situ. The Mint-X smell is absorbed into the bin during consistent use and remains after the bag is removed. This negates the need to deodorise bins.

Tested in laboratories and restaurants, Mint-X garbage bags offer food business managers a viable, sustainable and cost-effective solution to prevent pests from coming back to their business area and avoid the unpleasant odours associated with food waste.

Mint-X garbage bags are now available across Australia in five sizes ranging from 54 to 240 litres.

www.mint-x.com.au



/ ECOBIN WHEELIE BIN ENCLOSURES

Wheelie Bin Enclosures are the latest product range from EcoBin – which supplies offices and businesses with colour-coded recycling bins across Australia, New Zealand and the UK.

EcoBin products aim to take the confusion out of recycling by displaying clear and eye-catching instructions to help people dispose of their waste products correctly.

The recently-launched enclosures are ideal for public spaces, schools, lobbies, car parks, shopping and conference centres. They combine the tough durability of stainless steel with an attractive, modern design that works in any setting.

The bin enclosures hold large, tamper-proof and highly visible side panels to display signage or graphics. They are available to cover 120-litre and 240-litre wheelie bins.

Customers can choose from a range of pre-designed, colour-coded side panel inserts for different waste streams, for example, mixed recycling, glass, landfill, paper.

Alternatively they can send a bespoke or branded design, as EcoBin can make up inserts to order.

Supporting the sustainability of its products, customers can choose to have their orders posted flat packed to reduce emissions associated with shipping.



EcoBin's products are 100 per cent Australian owned and made, designed to last, and can be recycled at end of life.

www.ecobin.com.au

/ BIGBELLY 5

Bigbelly solar compactor bins offer council and commercial managers of public spaces a unique way to avoid overflowing, unsightly bins and reduce street waste collections.

Designed in the United States, they have been modified to better meet the needs of the Australian market with guidance from national exclusive distributor Solar Bins Australia.

Bigbelly systems have a 600-litre capacity, five times the volume of standard wheelie bins. Its solar-powered internal compactor allows up to eight times the capacity of a common street litter bin.

The flagship hopper design, soon to be updated with a touch-free disposal hatch, keeps litter inside and deters pests and vermin. This supports environmental services in maintaining clean, litter-free public spaces.

Key to Bigbelly is its wireless sensor and CLEAN remote management system. Each Bigbelly has a SIM card that communicates to the CLEAN software through the mobile network. This alerts the client when a bin is 70 per cent and 85 per cent full, enabling timely deployment, and captures data to better plan waste collections.

Companies and councils installing Bigbelly compactors have seen an average reduction of 86 per cent in bin collections, allowing them to stretch their waste management budgets.

Bigbelly's side panels offer four square metres of outside space, which can be used as advertising real estate to generate revenue.

www.solarbins.com.au





The Genox shredder and granulator in situ at Close the Loop's premises in Somerton, Victoria.

A Closed Loop for recycling equipment and service

WHEN RECYCLING FIRM **CLOSE THE LOOP** WAS PLANNING A NEW PRODUCTION LINE TO PROCESS WASTE TONER BOTTLES, IT APPROACHED **APPLIED MACHINERY** TO PROVIDE THE RIGHT EQUIPMENT FOR THE JOB.

Close the Loop (CtL) is Australia's largest recycling and resource recovery company for imaging consumables, such as print cartridges and waste toner. Through the highly-successful "Cartridges 4 Planet Ark" program and other initiatives, it collects cartridges from over 20,000 collection boxes across Australia.

Established in 2001 by entrepreneur and innovator, Steve

Morriss, CtL was founded on a 'Zero Waste to Landfill' promise. It returns end-of-life products to the original manufacturer for re-use if they have a program for this. Otherwise, from its site in Somerton, north of Melbourne, it uses a range of patented processes to recover all the materials from the all-in-one print cartridges, toner bottles and inkjet cartridges.

Its recycling processes involve size

reduction (shredding, grinding or granulating) and materials separation (using magnets, eddy current, induction, and specific gravity).

When CtL was planning to create a new production line to process toner bottles, it needed some advice on the equipment best suited to handle the materials it would process. The company approached David Macdonald at Dandenong-based Applied Machinery.

"We had a long-term relationship with Dave going back to when we bought a used extruder from him for our very first eWood trials about 15 years ago," says CtL founder and Executive Director Steve Morriss. "We knew Applied Machinery offered a comprehensive range of plastic recycling equipment, so we contacted Dave to discuss the options."

CtL needed shredding and granulating equipment, but this solution needed to meet specific requirements and the team wanted to have input into the solution. The features CtL required from the machinery included: dust control and extraction from the shredder, explosion-proof electrics, and metal separation.

David recommended Genox equipment as being best suited to meet these requirements.

"Dave introduced us to the owner of Genox, Mr Yao," explains Steve. "They came to a meeting at our offices to scope what we required. As they began to understand our unique needs, they suggested modifications to standard equipment to provide us with a suitable solution with reasonable lead-times and pricing."

The CtL project team visited the Genox factory several times to determine the best solution for size reduction and processing of a wide range of printer cartridges. It eventually invested in a Genox GSX4080 shredder matched to a GSX4280 granulator.

"Close the Loop decided to proceed with the Genox equipment installation at its premises after extensive design and testing to minimise the dust issue," says David. "We also addressed the risk of explosion due to the airborne carbon black present during the toner cartridge shredding process."

Much of the equipment CtL bought was manufactured especially to comply with its requirements.

Applied Machinery offers delivery, installation and training, and back-up service for the full range of Genox equipment. This time, the CtL team opted to install the equipment themselves, while Applied Machinery provided technical advice. Steve was delighted with the end result, which was soon up and running within the Somerton site.

"One of the advantages of buying Genox equipment is the local support provided by the team at Applied Machinery," adds Steve. "If we've got problems, we have a local contact to turn to. And as they have supplied many similar machines, they can

working with Applied Machinery and Genox contributed to the equipment CtL received meeting all its expectations. This has led to a continued working relationship.

"They listen, consider, and then respond with specific solutions to meet our unique requirements," says Steve. "This is not common when buying equipment from overseas."

As it supplies equipment from international manufacturers, such as Genox, Applied Machinery ensures they are compliant with Australian safety and electrical standards. Its warehouse also has a full stock of



A Close the Loop employee checks the equipment in operation.

provide a good range of parts."

David says the partnership between Applied Machinery and Genox is unique in that they offer extensive evaluation of the customer's application and comprehensive testing prior to delivery.

"Other suppliers of such equipment tend to offer standard units with any modifications to be completed by the customer," David adds. "Genox has the added benefit that Applied Machinery stocks its machines in Australia, allowing customers to inspect the equipment before purchase."

Steve says that the good communication he experienced while

spare parts, and it has an experienced team to provide local service and technical support when needed.

"Like most buyers of recycling equipment, we always look for the right balance between quality and price," says Steve. "We feel Genox have nailed that balance well. And you can trust Applied Machinery to support the machinery it sells."

To register for CtL's free recycling program go to its website, www.closetheloop.com.au. For details on the Genox range of recycling equipment call David Macdonald on 03 9706 8066 or visit www.appliedmachinery.com.au. ■

ERF AUCTION

WHY AND HOW TO BID

THE CLEAN ENERGY REGULATOR (CER) WILL HOLD THE SECOND EMISSIONS REDUCTION FUND AUCTION IN NOVEMBER. **NADYA KRIENKE-BECKER** PROVIDES SOME INSIGHTS INTO THE AUCTION PROCESS, INCLUDING WHAT PROJECTS QUALIFY AND HOW TO PREPARE TO BID IN FUTURE AUCTIONS.

When announcing the second ERF auction would be held on 4 and 5 November 2015, Chair of the CER, Chloe Munro, said the volume of projects registered in July indicated that the market was ready for a second round. This gives industry and local government another opportunity to register their projects under the ERF and to obtain funding for their abatement efforts.

The first auction saw 43 participants secure 107 contracts worth \$660 million at an average price of \$13.95 per Australian carbon credit unit (ACCU). This left \$1.89 billion of ERF funding available.

Held in April 2015, it gave bidders a two-day bidding window to follow the registration steps and prepare a competitive bid. Each auction was run as a single round, pay as bid, sealed bid format. This meant that the auction contained one round, with sequential bidding not an option. Bids were sealed so that participants could not see what others were offering.

Successful bidders automatically entered into a Carbon Abatement Contract with the CER on behalf of the Commonwealth of Australia. Bidders who were unsuccessful were told they could re-bid in a subsequent auction.

First round winning bids

In the ERF first round, the CER awarded 47 million tonnes of abatement to 144 projects. The winning projects offered abatement through avoidance of deforestation and destruction of methane or landfill gas, which collectively accounted for over 67 per cent of the contracted ACCUs to be delivered by volume.

Of the 43 participants who secured 107 contracts, 38 per cent of the initial bids, or a total of 18 million tonnes, comprised landfill gas and resource recovery projects. Lengths of contracts ranged between three and 10 years.

Landfill gas was by far the biggest contributor from the resource recovery industry. However, the CER also credited several Alternate Waste Treatment (AWT) projects, including five of Suez's AWTs, the Biomass Solutions AWT in Coffs Harbour, and Veolia's Natural Recovery Systems Composting plant in Melbourne.

Clarence Valley and the City of Armadale were the only local governments to bid in the first round, both for small landfill gas projects. This means councils have a valuable opportunity to participate in and benefit from future auctions.

Resource recovery companies did not take part beyond the landfill gas and AWT methodologies, despite the

possibilities for reducing emissions from transportation and energy efficiency at facilities. This gives resource recovery and landfill gas operators plenty of scope to get involved in future auctions.

Council-led organic waste diversion programs offer both councils and industry the prospect to apply for ERF funding. Organic waste diversion projects reduce the load on landfills, create organic fertilisers, decrease potential greenhouse gas emissions, and qualify to generate ACCUs through the ERF. Such programs hold many potential benefits for councils and industry aside from abatement contracts.

New guidelines for second ERF auction

Since the first auction, the CER has developed more ways to take part in the ERF to cover areas including agriculture, commercial buildings, industrial energy efficiency, coal mining, oil and gas, and waste.

For the second round, the CER released new guidelines and a new carbon abatement contract. The updated rules outline a new variable volume threshold that will be used to determine successful auction bids. The variable volume threshold means that participants have the flexibility to accept between 50 and 100 per cent

of the volume of abatement offered at auction below the benchmark price. The threshold will be at the point where the bids represent best value for money.

At the same time, the variable volume threshold allows the CER to fulfil the requirements of the purchasing principles in the Carbon Credits (Carbon Farming Initiative) Act 2011, both to maximise the amount of abatement bought and to buy abatement at the lowest cost.

In all other respects, the format will be similar to the auction held in April. Bidding will be conducted in a single round through AusTender.

To monitor the integrity of the auction process, including the application of the variable volume threshold, the Regulator has engaged an independent probity adviser.

Participating in future ERF auctions

The deadline for registering for the second ERF auction in November

passed on 18 September. However, a third round is likely to be held in early 2016.

Project applications submitted after 18 September, or those that require further information to be assessed, will be eligible to qualify for future auctions.

When announcing the second round, Chloe Munro warned: "We understand that some potential participants will only apply to register their projects after an auction date has been announced.

Our message for those that haven't yet prepared their applications is do not leave it until the last minute."

The CER stated that projects will not be eligible to participate unless a complete application for registration is received at least 30 business days before an auction.

Therefore, if you are interested in taking part in a future ERF auction, it would be wise to start preparing now.

The information and forms businesses need to register a project to participate

in the ERF are available on: www.cleanenergyregulator.gov.au/ERF/Forms-and-resources/apply-to-participate

Waste and resource recovery businesses will keep a close eye on the results of second ERF auctions to see which application are successful and which are not.

Depending on the outcome, the Clean Energy Regulator may develop further ways in which future participants can take part in the ERF. ■

TAKING PART IN THE ERF

1. Register as a participant. Projects must be registered and also be eligible under an approved method.
2. Participate in an auction to secure a contract with the Australian Government.
3. Carry out the project according to the method stipulated, report on the project and ensure it is audited as required.
4. Claim Australian Carbon Credit Units (ACCUs) for the emissions reductions achieved and sell them to the Clean Energy Regulator.



Nadya Krienke-Becker is Head of Global Marketing at Cardia Bioplastics and PR Consultant to the Australian Bioplastics Association.

Involved in creating sustainable outcomes for businesses and organisations since 1991, she is a former adviser to the Shaper Group, who at the time was the only Australian company to be involved with the World Economic Forum on the development of the Global Sustainable Consumption Strategy.

Nadya is a regular Banksia Foundation judge and has presented on sustainable branding at numerous events including Wealth From Waste and the Australian Sustainability Conference.

THE REGULATORY LANDSCAPE

FOR THE NSW WASTE INDUSTRY

THE ENVIRONMENT PROTECTION AUTHORITY OF NEW SOUTH WALES (EPA) HAS RELEASED SEVERAL UPDATED REGULATIONS THAT AFFECT WASTE AND RECYCLING BUSINESSES IN THE STATE IN THE LAST YEAR.

WASTE CONTRACTORS & RECYCLERS ASSOCIATION OF NSW (WCRA) EXECUTIVE DIRECTOR **TONY KHOURY** PROVIDES AN OVERVIEW OF THESE NEW RULES AND WHERE HE WOULD LIKE TO SEE CHANGES IN FUTURE.

The Protection of the Environment Operations (Waste) Regulation 2014 – commonly known as the 2014 Waste Regulation – became effective on 1 November 2014. The regulations are supported by the Waste Levy Guidelines, which detail how waste is measured to calculate levy liability, when certain levy deductions can be claimed, and requirements for records, surveys and reports.

NSW has a waste levy, which for 2015/16 is \$133.10 a tonne for the Metropolitan Levy Area and \$76.70 a tonne for the Regional Levy Area.

This new regulatory framework introduces rules to ensure that waste is not stockpiled at processing sites, where the waste levy can be avoided or payment delayed. This has resulted in significant reporting obligations on all waste facilities.

We need the EPA to be an effective regulator so that good, lawful, legitimate operators in NSW can confidently invest in best practice waste management solutions without

the threat of being undercut by rogue operators.

The EPA has also introduced lower thresholds for depot licence requirements, tracking for waste being transported interstate, and a proximity principle.

The proximity principle aims to address the environmental and human health impacts in NSW associated with the unnecessary haulage of waste over long distances. It requires waste generators and transporters in NSW to ensure that their waste is transported for disposal to a lawful facility that is located within a 150-kilometre radius from where it was generated. This law does not apply to waste transported by rail, nor to recyclables that are transported beyond the 150-kilometre boundary.

The introduction of these rules has resulted in some unintended consequences.

With NSW having a high waste levy and Queensland having no levy, much lower landfill fees and lower

environmental standards, there is still a large volume of waste and recyclable material that is sent to south east Queensland for disposal.

Whilst the EPA had great intentions with the proximity principle, the law is not working and needs an urgent review. The reason that waste material is transported for long distance disposal is the lower cost of landfill. There are also environmental implications, such as lower recycling rates in NSW, the additional consumption of fossil fuels and the pressure on our rail corridor.

Let's just hope that this higher unnecessary risk does not result in our having to deal with any tragic accidents or fatalities. WCRA has highlighted these concerns to the EPA and to the NSW Government.

Container Deposit Scheme

The NSW Government announced that it plans to introduce a container deposit scheme (CDS) from July 2017.

WCRA broadly supports a CDS in NSW. How it will all work is yet to be determined – this will be finalised in 2016, after a community and industry consultation. However, the scheme needs to ensure that there are no significant unintended consequences on the kerbside recycling sector.

In terms of the composition of the CDS implementation committee, the government and the EPA have failed to recognise the importance of business and the waste management industry. The committee is made

up largely of consultants and government officials.

WCRA is involved in two of the operating committees. However, it is difficult to understand the logic of the nominations, as several of the people appointed to these committees have significant commercial interests in the outcomes.

We have pointed out and highlighted these concerns to the EPA and the NSW Government. We will do our best to ensure that WCRA makes a positive contribution to the process.

Aspirations and expectations

I think regulation in NSW has some way to go to improve the waste industry for those who work within it and its outcomes.

If I were able to introduce one thing, it would be around improving the situation for collection drivers. I would pass universal laws that allowed for the collection of waste and recyclables to occur at the safest possible times, for example between 11.00pm and 5.00am, when there is less traffic and fewer pedestrians.

By undertaking waste and recyclable collections during these quieter periods, productivity levels would increase, there would be a lower risk of accidents, and there would be many fewer waste collection vehicles on the road during peak commuter periods. Now there's a win, win, win.

If one thing is true, it's that the waste management and recycling industry is constantly evolving. I will be interested to see what the future has in store. ■



WCRA Executive Director Tony Khoury

WCRA is an industrial body of waste employers in NSW, which was set up in May 1948. It is registered with both the Fair Work Commission and the NSW Industrial Relations Commission. WCRA has 180 members across NSW and the ACT, who own, operate or control an estimated 95% of the vehicles used in waste and/or recycling collections. Wherever a NSW council (including the ACT Government) contract out their waste collection services, they do so to a WCRA member.

A full calendar of WCRA events up until 30 June 2016 can be accessed at www.wcra.com.au.

Tony Khoury can be contacted at the WCRA office on 02 9604 7206, or by email at tony@wcra.com.au.

Victoria updates rules on moving industrial waste interstate

EPA VICTORIA RELEASED UPDATED GUIDANCE IN AUGUST ON MOVING PRESCRIBED INDUSTRIAL WASTE FROM VICTORIA ACROSS AUSTRALIA. THE STATE GENERAL MANAGER FOR SUEZ IN VICTORIA, **KELVIN SARGENT**, EXPLAINS WHAT THE NEW GUIDELINES MEAN FOR THE INDUSTRY AND OFFERS A VIEW ON NEXT STEPS ON THIS SUBJECT.



SUEZ's State General Manager
- Kelvin Sargent

EPA Victoria's (EPA VIC) recent announcement of updated industrial waste resource guidelines (IWRG) regarding the movement of prescribed industrial waste (PIW) is a positive step forward for the industry.

These updated rules affect producers, consigners, transporters and receivers of PIW.

As part of EPA VIC's focus on helping industry better understand their PIW obligations, the latest guidelines include additional details about obtaining waste transport certificates and consignment authorisation from the receiving state or territory.

The reaffirmation of the regulations comes after months of discussions with SUEZ and the Waste Industry Alliance, drawing the Victorian State Government's attention to the broader issues around the interstate transportation of controlled waste.

The Regulations

Current interstate movements of PIW are primarily covered by the Environment Protection (Industrial Waste Resource) Regulations 2009 ("Regulations").

Under the updated Regulations, any person wanting to transport non-liquid PIW, including solids and sludges, from Victoria to another state or territory must obtain prior approval from EPA VIC. In addition, they must comply with the following requirements:

- Obtain consignment authorisation from the state or territory jurisdiction receiving PIW;
- Owners of any vehicle transporting PIW across state borders must hold a permit issued by EPA VIC; and
- The producer, transporter and receiver must complete interstate waste transport certificates for each consignment of PIW.

These regulations are not new. Instead, EPA VIC has simplified the requirements pertaining to all three categories of PIW.

The updated rules do provide certainty around the movement of PIW but, to date, have not been effectively enforced. As the recently-released IWRG highlights: "It is your responsibility to ensure that those obligations are complied with."

As the responsibility of reporting the interstate transportation lies with the producers of PIW, most do not lodge the correct paperwork. As a result, there aren't any accurate figures showing the great extent of this problem for the Victorian Government.

We cannot, however, ignore the role the industry plays in accepting waste. In order for the Regulations to be effective, it is crucial for waste operators to only accept PIW, both interstate and locally, that has been approved through the appropriate channels.

The bigger picture

In 2008, the Victorian Government introduced a PIW levy for Category B industrial waste and contaminated soils, set at \$250 a tonne.

Within four years of the introduction of the levy, Queensland's Government repealed its landfill levy. This made it more economically viable for PIW producers in Victoria to transport waste across the Victorian and New

South Wales borders to Queensland.

This practice creates extra truck movements, meaning more heavy vehicles are on busy and dangerous major highways every day. Additionally, it increases the carbon footprint of PIW disposal due to diesel usage of trucks travelling up to 2,000 kilometres to Queensland.

The practice also comes at a significant economic cost to Victoria – for every 1,000 tonnes of PIW transported to Queensland, the Victorian Government loses

lawful facility with corporations facing penalty notices of up to \$15,000 if caught not meeting the regulations.

SUEZ would like to see a similar principle adopted in Victoria. It would not be costly to enforce and would achieve better environmental outcomes for all.

Waste is a local issue and should be disposed of as close to where it is generated as possible. The management of waste is an essential service and provides various opportunities for investment in local



Kelvin with SUEZ colleagues at a recent truck testing day.

\$250,000 in waste levy revenue. It also undermines investment in resource recovery infrastructure, such as soil processing facilities, and creates uncertainty for owners of existing infrastructure.

SUEZ owns and operates the only Victorian landfill facility that can accept Category B PIW and is recognised as a waste facility of state importance.

More to do

In 2014, the New South Wales Government introduced the proximity principle within the Protection of the Environment Operations (Waste) Regulation 2014. This aims to prevent waste from being transported for disposal more than 150 kilometres from where it was generated with some exceptions.

The principle also states that waste should be disposed of at the nearest

jobs, infrastructure and technology.

The Andrews Government should be commended for its interest and action. Progress is definitely being made in light of the updated Regulations and the public review of the EPA VIC, but there is still more to do in order to address the bigger picture.

Further details

The guidance document, Movement of prescribed industrial waste from Victoria (publication IWRG832), is available on the EPA VIC website – www.epa.vic.gov.au.

EPA VIC is also reminding those in the waste industry about its existing guidelines on transporting waste from Victoria, which can also be found in the 'Standards and compliance guidelines' section of the website. ■



WASTEMINZ ANNUAL CONFERENCE AND EXPO 2015 19 - 22 OCTOBER

Rotorua, New Zealand

'Circular Solutions – A Circular Economy for New Zealand' is the theme for the 27th annual WasteMINZ conference. The event will include the presentation of the inaugural WasteMINZ Awards for Excellence.

www.wasteminz.org.nz



PLASTICS RECYCLING CONFERENCE EUROPE 28 - 29 OCTOBER

Madrid, Spain

This event is the meeting place for the European plastics recovery, recycling, and end-use markets delivering two days of high-level discussions, with speakers sharing developments in this expanding market.

www.plasticsrecyclingeurope.com



BIOENERGY AUSTRALIA CONFERENCE 2015 30 NOV - 2 DEC

Launceston, Tasmania

Bringing together experts and professionals in the bioenergy sector, the conference program will cover policies and initiatives, projects and project development, case studies and emerging opportunities in this space.

www.bioenergyaustralia.org



BIR WORLD RECYCLING CONVENTION 26 - 27 OCTOBER

Prague, Czech Republic

The Bureau of International Recycling brings together its members and innovators in the resource recovery space from across the globe for its annual conference and exhibition.

www.bir.org



ELECTRONICS RECYCLING ASIA WRF 2015 10-13 NOVEMBER

Singapore

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www.icm.ch/wrf-2015



WASTE MANAGEMENT IN ACTION 5-7 MAY 2016

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Set within the popular International Truck, Trailer & Equipment Show, this new event will feature full-scale working displays from waste and recycling equipment suppliers. The Education and Careers Pavilion will showcase career and personal development opportunities in the waste and recycling industry.

www.wastemanagementexpo.com

waste management REVIEW

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

Should manufacturers and retailers do more about resource recovery of the products they make and sell?

It's been conference season for our industry over the last few weeks. One sentiment was echoed from platform to platform.

Managing end-of-life products should be a shared responsibility between the consumers, councils and those who make or sell the products in the first place.

Whether it was at the Landfill and Transfer Stations Conference at the end of July, the AWRE seminars in August or the WasteQ regional conference in September, the assertion was that those producing or selling the consumables should be obliged to take some accountability for recycling those goods.

This need is amplified as so many items people buy now are not designed to be durable or to be used for a long time.

Electricals and mobile phones use technology that continually evolves, so they are not built to last. You can buy a kettle for \$7.50 at Kmart – that's less than the average takeaway sandwich costs. The “fast fashion” sector has grown by 10 per cent a year since 2010, as cash-strapped, particularly younger consumers seek affordable ways to keep up with trends on a budget.

The consequences have included more items simply being thrown away. Despite being made from materials that could be reused or recovered, many have often ended up in landfill.

At a panel session on e-waste at AWRE, Carmel Dollisson of the Australia and New Zealand Recycling Platform said funding for programs



Photo: Hugueite Roe / Shutterstock.com

to recover resources from end-of-life products needs to be shared. She and her fellow panellists called for better leadership from the federal government.

The consumer was positioned squarely as having some duty in this space, with “pay as you throw” and programs to encourage re-use or repair being advocated.

However, the message from those at the frontline of handling this influx of end-of-life material is that they want producers and retailers to be mandated to participate in diverting their products from landfill.

Some companies are already committed to doing more in this space.

Reverse logistics companies are becoming more popular. The Victoria-based TIC Group is one such operator who is paid by national stores to collect electricals and other items that have been returned for selling on the secondary market or exporting for re-use. It brings them back to its warehouse for processing.

Some items are not faulty and may be simply missing a box – these often have their branding removed to be sold on.

Other items are collated and sent to South East Asia, where entrepreneurial businesses repair them or find a new use for them. For example leaf blowers become dryers, which are in demand at car washes. Fan heaters with a broken heating element are used for just cooling.

Fast fashion is starting to realise its sustainability responsibilities. H&M launched a €1 million (\$1.56 million) competition in late August to seek solutions to the growing problem of waste and pollution in the fashion industry. The Global Change Award, funded by the H&M Conscious Foundation, aims to engage inventors, scientists and researchers to present practical ideas to close the loop on clothing waste.

However, the industry agrees that Australia is behind the curve on this issue.

Currently, there isn't enough infrastructure here to process e-waste, for example, so it has become acceptable to export it. This sees valuable resources leaving the country every day.

The calls are growing for additional national product stewardship initiatives, which retailers and manufacturers would be mandated to participate in. Industry is calling for the federal government to put an onus on manufacturers to design products with repair, re-use and recovery in mind.

With a general election on the horizon and the problem of managing waste growing, the hope is for action on this matter – and soon. ■

waste

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OCTOBER/NOVEMBER 2015

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David McLachlan talks about the work behind Brisbane City Council's Australian Sustainable City 2014 award and the preparations for renewing its contracts.

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