

Kerbside recycling – where to from here?

By Mike Ritchie

NATIONALLY, waste to landfill is growing at between 4.5% and 7% per annum. We need to double our recycling rates over the next nine years to still be sending 22 million tonnes (MT) per year to landfill in 2020. If we don't accelerate recycling we will be landfilling closer to 40 MT by the end of the decade.

On recent estimates the recycling rate for commercial waste will need to treble from 8 MT to more than 23 MT, while domestic putrescible diversion will need to grow from less than 1 MT to something in the order of 9 MT by 2020.

But what of kerbside recycling? Is there any room for innovation in the kerbside recycling space? We have been performing well for 15 years; more than 90% of Australian households now have access to kerbside recycling schemes and we have one of the highest per capita domestic recycling rates in the world.

Australia currently recycles about 8 MT a year through kerbside recycling. But it may surprise you to know that we landfill an estimated 2-3 MT of recyclables from our households. That is recyclable plastic, steel, aluminium, glass and newsprint.

According to NSW figures, that means on average the residual garbage bin has about 23% of recyclables in it (by weight).

If you do the maths, 23% by weight of the garbage bin is approximately 33% by weight of recyclables, all of which is being lost to landfill. (The percentage is higher because of the different specific gravities).

There are only two possible reasons for this. Either there is a level of ignorance and ambivalence to recycling among the population or there are capacity constraints in the recycling

bins. The second cause is both more interesting to consider and more immediately remedied.

Preventing "leakage"

A recent review of three councils in Sydney showed as many as 40% of households were filling their recycling bins to capacity each fortnight, and thus were at risk of "leaking" recyclable material into the general rubbish bin.

In terms of what can be done about it, there are four options:

1. Do nothing and accept the loss (the current default position);
2. Provide an extra bin and service it at the same time as the first;
3. Service recycling bins weekly rather than fortnightly; and
4. Provide a bigger recycling bin.

My company, MRA, has modelled these options from a cost, greenhouse gas and recovery perspective.



The problem with Option 1 is we are losing a lot of recoverable materials with high embodied energy and the council is paying to landfill them (at a higher cost than it is currently paying to recycle them).

The biggest problem with Option 2 is the costs of servicing the extra bin. Collectors generally charge for an additional lift as if it was a new household. I have not yet found a



council that has a lower service fee for the lift of the second bin.

I think the reason is such double services are not yet common and are usually added after the collection contract is let. So there are few economies of scale for the collectors.

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It is possible collectors would offer a lower cost for the second lift if councils quantified the number of double lifts at the time of tender.

Option 3 results in a virtual doubling of the real collection costs of the service since the truck is now running up and down every street on a weekly basis, whether required by the residents or not.

Finally, Option 4 is to increase the

size of the recycling bin from 240 litres to, say, 360 litres. The cost of the new bin is a one-off \$100 (approximately) and the costs of collection are the same, a single lift charged at the same lift rate.

A number of councils have ventured into larger recycling bins and the feedback has been good, with most councils observing growth in recovery of recyclables of 15-30% with no additional costs of collection (apart from the bin itself).

There is an argument that councils should give away the larger bin to households that need it. The savings in landfill gate fees (in Sydney \$180/t and around \$70-140/t in other capital cities) compared to MRF separation (\$0-40/t) soon pays for the capital cost of the bin, assuming collection costs do remain the same.

So instead of losing 33% of our recyclables to landfill via the garbage bin, there are real and cost effective options for councils. First and foremost is to offer larger recycling bins to those households who need them.

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encourages residents to work together for a better environmental outcome.

Elephant's Foot is currently installing its first E-Diverter systems in Australia and is working with a number of councils, town planners, architects and construction companies to produce waste management planning for individual construction projects.

Saidi believes allowing residents to separate their waste at the source is

the key to improving contamination levels in recycling streams, and points to other countries where such systems have been in operation for years.

"Many overseas building managers go one step further in providing multiple chute diversions and also balers for cardboard, cans and other volume material. Some European systems are based around a user pays system, again actively encouraging break down of waste streams and recycling material,"

he said, adding Elephant's Foot is investigating the introduction of such services in 2012.

"Interest in the E-Diverter is growing rapidly, particularly in the Sydney and Melbourne markets where councils have quickly identified the system benefits and are recommending the inclusion of the E-Diverter or twin chutes at a building development level."

While the E-Diverter can only be used on new building developments at

present, the company is planning to undertake research and development on a retrofit option for existing buildings.

"Obviously building owners and residents themselves must be committed financially to such a project. However, the outcomes of ease of recycling for residents, the reduction in waste costs for building management and the overall benefit to our environment should produce a number of retrofit projects in the future," he said. **iw**