

Collections Blueprint: Single-pass resource recovery vehicles



Doing more with less using single-pass vehicles in Anglesey

In the current financial climate, local authorities throughout the country have been challenged to continue improving recycling performance while reducing costs.

Isle of Anglesey County Council, in partnership with service provider Biffa, is one of many Welsh councils that has introduced single-pass resource recovery vehicles (RRV) to bring down costs and improve service. This enables the council to pick-up a wide range of materials in one go:

- Food waste - residents are given a 5-litre caddy for the kitchen and a 23-litre one for outdoors
- A 40-litre lidded red box is used for paper and card
- A 55-litre blue box is used for plastic bottles, mixed cans and glass containers
- Specialist items such as batteries, mobile phones and textiles

This weekly service means the combined space in these recycling containers exceeds the

space available in the residual waste bin, which is 240-litres and collected once a fortnight.

In 2015/16, Anglesey recycled 59.5 per cent of its waste.

RRVs improve efficiency

The change saw the council's municipal contractor Biffa deploy a new fleet of Kerbsort, single-pass RRVs run by a driver and one collection operative.

These replaced two sets of vehicles that were previously used: one for recycling and another for food waste. As a result, the number of vehicles required reduced by a third, from 15 to 10, with all vehicles based on a 12-tonne DAF chassis.

Two of the RRVs are a shorter length so they can navigate the narrower streets.

In addition to maximising collection efficiency due to a bigger payload, the change also reduced road miles and diesel consumption. It is estimated that the new trucks would

reduce operational mileage by around 80,000 kilometres annually while saving 15,000 litres of diesel and reducing exhaust and CO2 emissions by nearly 50 tonnes.

The contractor reports that since the switch there have been fewer operative injuries because all the sorting now takes place at the same height on the vehicle.

Sorted at the kerbside

The new single-pass vehicles have five compartments that can all be accessed from either side of the vehicle, again increasing the speed of collection.

Immediately behind the cab sits the compartment for the lighter materials, mixed cans and plastic bottles. When this compartment becomes full at operative height, the side doors are closed and a scissor mechanism pushes the plastic and the cans into a roof space, where a ram pushes it back. This maximises the use of vehicle space.

The compartment for cans and plastics is followed by one for paper, another for glass and then two removable food pods – one on either side of the vehicle – where kitchen waste, in compostable liners, is loaded.

Next to that, there are unallocated compartments where operatives put things like clothing, household batteries spectacles and mobile phones. Finally, a large compartment for cardboard is sited at the rear of the vehicle. This compartment has a compacting mechanism, optimising the number of households that can be serviced before the vehicle fills up.

Reducing the cost of recycling

Changing the recycling service to the single-pass vehicle has saved Anglesey taxpayers more than £200,000 per year.

With a statutory target of recycling 70 per cent of municipal waste by 2024/25, Anglesey plans to further enhance its waste and recycling services, relying on the RRVs to take a greater proportion of material.

In the near future, the council plans to move onto three-weekly collection of residual waste. Alongside this, it is going to introduce a

collection for mixed plastics, such as yoghurt pots and butter tubs, into the recycling service. It's expected these steps will increase recycling, not just because of the extra material that can be collected, but because the reduced residual capacity will drive recyclables out of the residual waste stream.

In addition to taking a wider range of plastics, the council hopes the change will also encourage greater separation of food waste, and expects it will result in further savings of £108,000 a year in avoided disposal costs.

Material ready to be reprocessed

When the full vehicles arrive at the depot to be emptied, the operatives first remove the textiles, batteries and mobile phones.

The food waste pods are then pulled out from the vehicle and a fork lift trucks tips the material directly into a skip, which is later taken for treatment at an anaerobic digestion plant.

The vehicles next reverse into a bay where glass is emptied from either side, and then into a bay where the cardboard is pushed from the back of the vehicles at the bottom.

The plastic and cans are released from the roof space and, finally, the doors on the side of the vehicle are opened to release the paper into its own bay, before the emptied food waste pods are returned to the vehicles, ready to leave the site.

After the materials are emptied, the cans and plastic bottles are sorted, and the cans are further separated into aluminium and steel. All the other materials are either baled or bulked in segregated bays, before going directly to the reprocessors as they have already been sorted on the vehicle.

