



### Special delivery

Searching for more flexibility in its fleet of recycling and waste management vehicles, DA Autoparts turned to Truck Specialists to engineer it a multi-purpose draw-bar truck and trailer system.

The solution for the Dumfries - based company consists of two 40-cubic-yard containers, one of which is equipped with a crane to maximise versatility and speed when picking up metals for recycling. The crane-mounted container can be used on the draw-bar trucks, with the crane at the front or on its trailer – again with the crane positioned at the front.

In the latter layout, DA's crane is comfortably able to load both containers. Quick-release hydraulic couplings and circuitry enable the crane to be operated by the existing draw-bar unit.

**Above: Ecoprocess (left) has supplied Hull City Council with 13 electric lifts. ATS Euromaster (Right) helped PHS fleets reduce tyre damage by 20%**

numerous roll-out schemes for wheellie bins across the country, has had two major effects. On the one hand, yes, it has made the process and the country more efficient and environmentally friendly. On the other, for many operators, there have been many investment and engineering challenges, as well as the obvious new business opportunities.

Onboard power supply outfit Antares has been working on two green solutions in the waste management sector that the company hopes will soon see the light of day, ideally by attracting the attention of municipal vehicle manufacturers. The first product, as sales director Charlie McClelland explains, was born out of a conversation with fellow stand holders at an exhibition, back in 2008.

"The people next door to us manufactured the part that lifts the bin up on an RCV [refuse collection vehicle], which was hydraulically pumped via the

# Electrics vs

Efficiency and flexibility are key to waste vehicles but, asks John Challen,

It seems a relatively short time ago that people's perception of recycling was limited to bottle banks in their local parks or rubbish collected from premises in black sacks. But the encouraging push to recycle, coupled with

PTO [power take-off]," he explains. "We got chatting and asked why they use hydraulics, rather than electric power." That question prompted said neighbour to think about the source of power – and Antares to explore possibilities.

In its initial investigations, Antares discovered its electric solution could offer a time-saving of two seconds per bin lift, which, as the company says, has massive potential, when considering the rate of collections per hour, per day, per crew, per vehicle. "If you have a large fleet of RCVs, then it is a huge potential saving," says McClelland. "By saving just one second from each bin lift, in some cases we can achieve a one-in-20 reduction on municipal fleets."

### Retrofit or OEM

Power from the PTO on the vehicle's automatic transmission could reach a maximum of 30kVA and Antares is hoping that manufacturers will realise the benefits over hydraulics. The system can be provided as a retrofit item, as well as standard fit for new vehicles, but McClelland is not committing on costs. "In retrofit terms, the cost would be less than the operating costs of a brand new vehicle," is all he's prepared to offer. He does reveal, however, that the company is in "advanced talks" with one





### A clean slate for PHS

All RCV components are being evaluated in the search for efficiency savings – and tyres are among those yielding results. When asked to look into PHS All Clear's and PHS Wastetech's fleets, ATS Euromaster found several areas for improvement.

"We looked at 314 trucks for PHS, using our electronic fleet inspection that records data on every tyre on every vehicle," recalls ATS head of business development Kevin Steward, "because we felt that we could find a better tyre for the application."

"From this information, we were able to identify the right tyres for the job. The fact that the waste management business is moving away from landfill sites to refuse waste fill sites was a major factor in us being able to get a 20% reduction in tyre damage on PHS' fleet."

# hydraulics

, which are the engineering solution suppliers most likely to clean up?

manufacturer and is hopeful of a breakthrough soon.

While waiting, Antares is also working on what McClelland calls electrification of the entire bin emptying operation. Designed for collections from blocks of flats, the idea is to operate the RCV as a zero-emission vehicle when loading.

"At the moment, these vehicles only have hydraulic lifters and a compactor that squashes the refuse in," explains McClelland. "We are talking to one of the London authorities about electrification of the cart. What they want is business as usual for refuse collection, but with the engine switched off."

The challenge for Antares is to devise a power source large enough to supply the energy needed for roughly a dozen bin-lifts per block of flats. "As well as efficiency gains," McClelland explains, "there is the potential impact on noise levels. We are talking about replacing the noise generated by the engine revving to power the PTO, with only the hum of electric motors."

And another advantage of the electrical approach, says McClelland, is lower maintenance costs. "The assumption is that these vehicles will be running with automatic gearboxes, which are self-contained units and don't require fluid changes, as a conventional gearbox does. There is limited maintenance with

electric cables, so we believe the change [to electric] should reduce overall maintenance issues."

Other electric waste lifts already in operation come courtesy of Ecoprocess, featured in the October 2009 issue of *Transport Engineer*. The big news was Cambridge County Council taking delivery of six electric bin-lift units, following an initial trial of two. Since then, Ecoprocess has furnished Hull City Council with a fleet of 13 modified lifts. The 12-tonne Ferret bodies sit on DAF LF45 chassis modified (shortened and compacted) to operate in narrow alleyways that require a tight turning circle.

The company is also reporting good results with Fareham Borough Council, where fitment of the electric bin-lifts has saved 250kg from the weight of each of its Dennis Eagle trucks, compared with the use of conventional hydraulic equivalent equipment. Further benefits have included the hoped-for fuel (and emissions) savings of between 10 and 12%, which Trevor Beard, transport manager for the council, says will help to recover the cost difference between the electric and the hydraulic bins systems within just 12 months. **TE**