



Riding the wave of innovation

For a 'small and dedicated player', Dutch firm Van Peperzeel has certainly made its mark on the European battery recycling sector, says ceo Johan van Peperzeel. Originally a trader in non-ferrous scrap, the family-owned business realised that times were changing and that it was best not to fight this but rather to embrace it. This can-do attitude has seen Van Peperzeel grow into a leader in the Dutch battery recycling market when it comes to electric modes of transport such as e-bikes.

Van Peperzeel of the Netherlands has built a reputation as a well-respected specialist in the collection, sorting and safe transportation of, mostly, lead-acid batteries. It sorts over 3000 tonnes of consumer batteries on an annual basis using specially-designed machinery; this equates to more than 500 000 batteries passing along the conveyor belt every day.

'In addition, we managed to collect and sort some 30 000 e-bike batteries last year, or around 100 tonnes in total,' notes ceo Johan van Peperzeel. 'This segment is still seeing healthy growth, so I am confident that we will soon be able to push this volume to 400 or even 500 tonnes.'

Foresight and planning

But this success has required 'a big shift' in mentality. Tracing the company's roots comes easily to Johan van Peperzeel, the second generation to head up the business set up by his father Wim van Peperzeel back in 1978. A trained technical engineer himself, he was only too pleased to become immersed in the world of scrap.

'We were already taking care of non-ferrous metals that were labelled "tricky" when my father had this grand idea, let's call it foresight, about widening the scope of our business by focusing on batteries,' recalls Van

Peperzeel. 'We're talking the late 1980s when no-one was paying attention to this niche and the scrap metal market was relatively solid. But he felt convinced something was about to happen, and if we would make a move soon, we could cash in on it.'

At that time, the Dutch government was discussing proposals calling for much stricter legislation for as example the disposal of (lead acid) batteries. Instead of waiting around to see how it would play out, Van Peperzeel did 'the only logical thing' and planned ahead. The company was suddenly cast in the role of innovator. 'We basically opted to build on our existing knowledge of the lead battery sector and, most importantly, we pursued new op-

portunities without denouncing our background in non-ferrous scrap,' he explains.

Milestone year

This decision saw a significant increase in the inflow of batteries – so much so that, in 1996, the Dutch battery collection organisation Stibat contacted Van Peperzeel with an interesting offer. 'They wanted to partner up with us in order to boost national recycling rates,' he says. 'We didn't need long to think about that prospect. And 1999 was a milestone for us because it was the year we were officially sorting all the batteries collected at Stibat drop-off points.' In this 'stable' pre-Millennium phase, Stibat was the one to launch



Over 3200 tonnes of post-consumer batteries alone end up at the plant through Dutch collection scheme Stibat.

the new sorting line at the facility in Ermelo. The technology used there quickly gained attention, sparking a flow of orders since 2005 from Ireland, Greece, Germany (2 sorting plants) and Norway.

But this site would turn out to be too small for Van Peperzeel's budding ambitions, or as he describes it: 'We offered a large capacity working from a seemingly shrinking package.' A move to a much larger site was finally triggered by an request to take a lead acid battery collection completely off the hands of one of the biggest industrial waste collectors. This organization wanted to focus once again on its core business and called for our help,' explains Van Peperzeel. 'Fast-forwarding to now, we have a fleet of dozens of trucks transporting the material across the country. We simply had to relocate because we couldn't accommodate multiple trucks at the same time, resulting in long times waiting at the gate. Luckily, we had a fresh start at our new site in Lelystad in 2008.'

United efforts

While the volume of batteries collected continues to rise steadily, Van Peperzeel admits that his company 'also took some hits' from the widespread economic hardship of recent years. The recycling market has undergone a change in that period, with the flow of material containing more varied items than ever before. 'Car, e-bike and e-scooter batteries, button cells from watches, working mobile phones, earphones, grocery lists,



The sorted fractions boast a purity level of at least 99.2%.

party for this niche for over a year now. And he expects this market to grow five-fold in the coming years.

'Real results are only possible through unity,' the businessman reflects. 'That's why I am a firm believer in networking. You have to keep talking to each other – yes, even with the compliance schemes, though they sometimes say things that recyclers really don't want to hear or agree with.'

Sharing not shielding

Van Peperzeel himself is open to criticism and feedback. 'Our brand is synonymous with transparency,' he states. 'The way I see it, honesty is the best policy.' And he wishes all manufacturers – especially car makers – shared the same belief. 'The term "producer responsibility" has been going back and forth now for quite a while and still it is difficult for major car brands – and I won't name any



'Bad publicity due to battery fires can cost car manufacturers hundreds of millions of dollars,' Van Peperzeel argues.

thermometers, remote controls and even nail polish removers; you name it, we've seen it,' he says. 'Sure, it's great that people take their recyclables to collection points, but it does mean they hand in virtually everything.'

So how to make the best of a confusing situation? Keep talking to other players in the battery chain, Van Peperzeel's ceo advises. 'Naturally, the bicycle producers are well-represented in the Netherlands,' he points out. 'When they first launched the e-bike, we made sure to strike up a conversation and keep recycling on their agenda.' This approach has paid off as Van Peperzeel has been the go-to

in particular – to meet the recycling sector halfway,' says Van Peperzeel. 'With e-mobility being a safe bet as the Next Big Thing, the unwillingness to share vital product information could become a real issue. There will be an estimated 20 million electric vehicles on the road in Europe in 2020; before that day comes, we better hope people will have given some serious thought to topics like eco-design and material recovery.'

And he concludes: 'As people who know me will attest, I am someone who will ask tricky questions – questions car makers do not want to give the answers to. They can, but

COMPANY HIGHLIGHTS

Company

Van Peperzeel BV

Specialty

Battery collection & sorting (also non-ferrous)

Headquarters

Lelystad, the Netherlands

Main market

Europe

Statistics

Sorts 500 000 batteries every day

Battery range

Consumer as well as e-car and e-bike batteries

Latest project

Fighting battery-related fires using a patented sodium silicate extinguisher

they won't. It's time we buried the hatchet and stopped being enemies.'

Van Peperzeel muses that 'innovation should be accompanied by responsibility'. He is aware, for example, that e-cars carry an additional risk that requires addressing. That is why he is working on a special solution – known as Li-Si – to douse fires sparked by lithium-ion batteries. His idea is based on sodium silicate, or what is commonly referred to as water glass, which is dispersed on to the flames via a customised fire extinguisher with a nitrogen inner coating. Van Peperzeel details how just one shot of the already patented substance was successful in completely extinguishing a battery fire during trials this June.

The 'much-needed solution' is being developed together with a German specialist in fire safety and the transportation of discarded lithium-ion batteries. 'I witnessed astonishing results when we tested a combi-extinguisher with one compartment containing Li-Si and one containing a substance pioneered by the Germans – the effect was immediate,' says Van Peperzeel.

And he adds: 'the German party will be able to adjust the design of the extinguisher fairly easily and its reputation will certainly help commercialise this product. With some luck, we will be able to present the first range of extinguishers at the International Battery Recycling Congress in September – or at the very least, a concept model. The best thing is that we will be able to offer a fire safety instrument that is not just limited to the battery market as first intended, but also for the general car market as well as for the transportation of goods in containers.'

Website: www.peperzeel.nl/en