AUTHOR & PHOTO Martijn Reintjes

High hopes in Valencia

Optimism dominated the latest International Electronics Recycling Congress, with Spanish recyclers announcing major investment, innovation and expansion. Among them was Atlantic Copper. This year the company begins operations at a EUR 450 million secondary smelter in Huelva in the south of the country.

CONCERNS OVER E-PLASTICS

The impact of trade restrictions and no widespread use of recycled plastics in new products continue to worry recyclers, and that was very clear at IERC.

The ban on the export of plastic waste (including e-scrap plastics) from the EU to non-OECD countries, effective by the end of this year, is causing ever more headaches among electronics recyclers.
'As of 2027, big volumes of plastics will stay in Europe but we have no proper solution for it,' says Kurt Kyck, ceo of KMK Metals in Ireland. The problem lies with the OEMs, he believes. 'The lobby for producers not being forced to use recycled materials in their product is too powerful,' he told IERC.
'We have some plastic recyclers in the room here who are more than willing to process materials but the producers are simply not responding. They rather use their own resources.'

RECYCLING HAS A COST

Obviously, it's all about money, says Chris Cleet of the US Information Technology Council. 'Let's face it: recycling has a cost. As long as recycled materials are more costly than virgin we all know what manufacturers choose.'
Even so, OEMs, including major electronics brands, some of which were present in Valencia, claim they do their utmost to add more recycled plastics in the production of devices while supporting reuse and repair programmes.
Jim Puckett of activist group Basel Action Network applauds export restrictions on plastic waste but fears a shift of illegal or improper treatment.
'There are so many bad practices happening everywhere. Plastic is so toxic, it remains a big problem, export ban or no ban.'

Freeport-McMoRan operates major copper assets across North and South America and Indonesia. Atlantic Copper (AC) is its Spanish subsidiary producing around 300 000 tonnes of copper per year. The group's combined output reaches roughly 2.2 million tonnes per year.

Based in Huelva, in southern Spain - home to flamingos and sea eagles - AC is one of Europe's largest primary copper smelters processing one million tonnes per year of copper concentrate.
'Now our company is ready for the next chapter,' says AC's senior vp Miguel Palacios. 'We're shifting from primary to secondary.' AC is building a dedicated smelter to recover metals from electronic scrap and components from electric vehicles - creating a new business line for a company historically focused on primary smelting.

STRATEGIC STEP

The project has been declared of strategic interest by the regional government of Andalusia and recognised under the EU Critical Raw Materials framework. It aligns with the European Green Deal and the UN Sustainable Development Goals.
The plant will have capacity to take 60 000 tonnes of non-ferrous metals from e-scrap per year. Incoming materials have already been pre-processed by authorised partner companies.
The facility provides 350 jobs (120 direct, plus indirect and induced employment).
'This is not simply an add-on recycling site,' says Palacios. 'We are integrating secondary metallurgy directly into the existing primary smelter. That unlocks thermodynamic, operational and economic synergies that standalone recyclers simply cannot reach.'

SORTED AND SHREDDED

E-scrap pieces up to 400 mm arrive onsite before they are sorted, shredded to less than 40 mm and automatically sampled. Feed materials are blended to maintain stable chemistry. Electrorefining, however, is highly sensitive. Even minor compositional shifts can disrupt performance. To manage this interface, AC has partnered with the University of Huelva and the University of Freiburg to test anode compositions before full industrial integration.
'Electrorefining is unforgiving,' Palacios notes. 'Circularity only works if refinery stability is guaranteed. That's why we have invested heavily in testing and metallurgical control.

AT THE FOREFRONT

The new smelter puts Atlantic Copper at the forefront of global WEEE metal recovery, says Palacios. 'It demonstrates that circularity and industrial scale are not mutually exclusive - and that green jobs can be generated within heavy industry.
'Most importantly, this proves that the circular economy is not an abstract principle. It is a metallurgical, thermodynamic and economic opportunity.'
The vp underlines that, as electrification accelerates, demand for copper and precious metals will continue to grow. 'Europe needs secure access to critical raw materials,' Palacios insists. 'Integrating secondary streams into primary infrastructure may be one of the most efficient and sustainable ways to meet that demand. The future of copper is not just about mining more - it is about using what we already have, better.'

Miguel Palacios (centre, back) with his Team Atlantic Copper colleagues.