



Recycling

International

January/February 2013, No.1



The container theft conundrum

**Mike Biddle wins
'environmental Nobel Prize'**

**Inspiring innovations
unveiled at Pollutec**

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Call me self-absorbed if you like, but I have no interest in knowing that the woman down the road has just bought a new cooker or that my neighbour's second cousin's baby has just got her first tooth. But while social networking media throw up a stodgy mass of unwanted information, they can also enliven those quieter moments....

Media mania

Although I could be called new-media illiterate, meaning that I am not on Facebook, do not twitter and seldom send text messages, I am a 'member' of LinkedIn, the social networking website for people in professions.

While I value the website and quite often make use of my network, that is obviously not enough for the people at LinkedIn. In their infinite wisdom, they think they know what I am interested in, so every once in a while they send me e-mails that read: 'Hi Manfred, check out the top six news articles for you this week'. These 'top' news articles have titles such as 'The career mistake women make that'll set you back US\$ 500 000', 'How to beat digital disruption by seeing the big picture', 'What young women in business need to know' or 'Start designing your life'. Just the kind of articles I'm desperate to avoid.

Recently, LinkedIn sent me an article by US writer and blogger Gretchen Rubin, who has precisely 72 397 followers and has written some self-help books like 'The happiness project: or why I spent a year trying to sing in the morning, clean my closets, fight right, read Aristotle, and generally have more fun'. Well, this book title does not make me happy - it makes me nauseous.

'I was just about to sleep with half my office.'

Far more entertainingly, however, LinkedIn also sent me a Rubin article called 'Six tips for avoiding an office affair'. In short, it read:

'A friend told me that when she started her job at a big company, a family friend, who also worked there, pulled her aside to give her some advice. Many people in their workplace had affairs, he said, and he'd seen lots of relationships break up. He'd kept his own marriage strong by following some rules, and he urged her to keep them too:

- 1 Never take a first step in flirtation, even in jest.
- 2 Never have more than one drink with people from work.

- 3 Never allow yourself to have a "special friend" of the attractive sex (sometimes called a "work spouse") to whom you turn for particular support.
- 4 Unless it's in an unmistakably professional context, don't meet alone with a colleague or client of the attractive sex. When a client calls with tickets for the baseball game, don't go in a twosome.
- 5 Imagine your spouse/partner as audience - cc'd on the e-mail or walking suddenly into the conference room. If you'd feel uncomfortable in that situation, you've crossed some line.
- 6 If you develop a close relationship with someone, get to know his or her family.'

Gretchen asked for feedback on these tips - and, boy, did she get it. Below are some of the best from the many hundreds of comments:

Mark W: 'I think office affairs should be encouraged because men need variety as do women. Monogamy is invented by wives and is pointless.'

Natasha D: 'I've been happily married for seven years as a result of an office affair.'

Jens Henrik K: 'I've broken several of the rules repeatedly and never had an affair. Maybe I just have outstanding moral character. Or the advice is rub-

bish, as in "I'm on a deadline and have to make up stuff to justify my salary"'

Scarlett W: 'Oh, lighten up and have some fun. You've got eight hours to kill.'

Barbara S: 'I have NEVER had an affair, but my two former husbands did, and that is why they are now former husbands.'

Joel B: 'To be perfectly honest, this list was really helpful to me. I was just about to sleep with half my office.'

Gary B: 'Never fish from the company pier!'

Robert B: 'How about these for the easiest rules ever: keep it in your pants; and don't go out for a burger when you have steak at home.'

But the comment I like most came from Alessandro V, who wrote: 'I totally agree with the above six tips, but.... these are not valid for Italians.' □



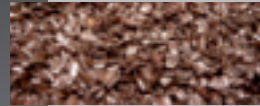
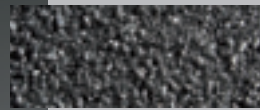
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Coverstory

The container theft conundrum / 16

At the BIR world recycling organisation's Spring Convention in Rome last year, a representative from the UAE's Ala Metals LLC international scrap trading company addressed the International Trade Council meeting devoted to scrap theft and fraud, stunning many in the auditorium with a video showing exactly how a container can be opened without breaking the shipping line seal. In this article, the Ala Group offers an even more detailed insight into its experiences with compromised containers and explains why it has decided to stop supplying to South China.



Nick Francis – a people person and recycling devotee

Last year, recovered paper specialist Nick Francis completed 50 years in a recycling industry he had entered by chance rather than by design. Here, he shares some of his views and most treasured recollections with Recycling International.



Mike Biddle wins 'environmental Nobel Prize'

Almost 20 years to the day after plastics recycler MBA Polymers started life in California, its President Mike Biddle picked up two prestigious international prizes in quick succession: the Gothenburg Award and GoingGreen's 'Silicon Valley company of the year award'.



Inspiring innovations unveiled at Pollutec

Attracting more than 62 000 visitors and some 2300 exhibitors from 105 countries, the 2012 edition of Pollutec - which was held in the French city of Lyon - was once again hailed as a great success. Recycling International provides a summary of some of the latest innovations that were on show.



SEDA celebrates 20 years of ELV technology

This year marks a milestone for Austrian technology expert SEDA, which celebrates the 20th anniversary of its renowned de-pollution system for end-of-life vehicles (ELVs).



<p>20–21 Februar Moscow (Russia) 9th International Forum – Ferrous and Non-Ferrous Scrap Metals Rusmet Phone: +7 495 989 2674 Fax: +7 495 980 0608 E-mail: lom@rusmet.com www.rusmet.ru</p>	<p>9–11 April Moscow (Russia) Aluminium-21/Recycling 6th international conference and exhibition on aluminium recycling Alusil Phone: +7 (495) 785 2005 E-mail: main@alusil.ru www.alusil.ru</p>	<p>13–15 March Brussels (Belgium) International Automobile Recycling Congress 2013</p>	
<p>25–26 February Düsseldorf (Germany) 12th OEA International Aluminium Recycling Congress OEA/Frau I. Esser Phone: +49 211 4796 441 Fax: +49 211 4796 447 E-mail: office@oea-alurecycling.org www.oea-alurecycling.org</p>	<p>9–13 April Orlando (USA) ISRI Convention and Expo 2013 Annual convention & scrap recycling industry exposition ISRI Phone: +1 202 662 8500 Fax: +1 202 624 9257 www.isri.org</p>	<div style="display: flex;"> <div style="flex: 1;"> <p>The 13th International Automobile Recycling Congress (IARC) is expected to attract hundreds of car recyclers, as well as a host of other interested parties. Attendees will converge on the Belgian and 'European' capital of Brussels to hear about latest relevant developments from politicians, as well as from experts in the vehicle manufacturing and recycling arenas.</p> <p>Keynote speeches will be delivered by representatives from the European and Italian authorities, as well as from the World Business Council for Sustainable Development and from Umicore Precious Metals Refining. The flight beyond Europe of raw materials derived from recycling will be evaluated at a panel discussion entitled 'Phasing out criminal export'.</p> <p>A comprehensive presentation programme will chart the key elements in car recycling, such as: best available recycling technologies; laws and regulations; e-mobility; and country reports from Japan, Iran and Italy. In addition, suppliers of recycling machinery and equipment will highlight their products during so-called 'Tool Box Talks' in the exhibition area. Coverage will extend to tyre recycling developments, recycling of shredder residues, the role of shredders in emerging countries, and the dismantling of new-generation vehicles.</p> <p>The three-day event will conclude with plant visits, including to ARN's post-shredder technology plant, car</p> </div> <div style="flex: 1; text-align: right;">  <p>manufacturer Audi, metals recycler Galloo and precious metals refiner Umicore. In addition, event organiser ICM is planning a programme of networking opportunities, including cocktail receptions, dinner and a beer bar.</p> <p><i>For more information, contact:</i> ICM AG, Birrwil, Switzerland, <i>Phone: +41 62 785 1000,</i> <i>Fax: +41 62 785 1005,</i> <i>E-mail: info@icm.ch</i> www.icm.ch</p> </div> </div>	
<p>28 February Rome (Italy) PV Module Recycling Conference PV CYCLE Phone: +32 2 400 10 49 Fax: +32 2 400 10 30 www.recycling-conference.org</p>	<p>11 April Düsseldorf (Germany) 16th International Recovered Paper Conference BVSE Phone: +49 228 988 490 Fax: +49 228 988 4999 E-mail: info@bvse.de www.bvse.de</p>	<p>manufacturer Audi, metals recycler Galloo and precious metals refiner Umicore. In addition, event organiser ICM is planning a programme of networking opportunities, including cocktail receptions, dinner and a beer bar.</p>	
<p>13–15 March Brussels (Belgium) IARC 2013 International automobile recycling congress – ICM Phone: +41 62 785 1000 Fax: +41 62 785 1005 E-mail: info@icm.ch www.icm.ch</p>	<p>15–21 April Munich (Germany) Bauma 2013 Intl. trade fair for building material machinery, equipment and vehicles Messe München Phone: +49 89 949 11348 Fax: +49 89 949 11349 E-mail: info@bauma.de www.bauma.de</p>	<p>For more information, contact: ICM AG, Birrwil, Switzerland, <i>Phone: +41 62 785 1000,</i> <i>Fax: +41 62 785 1005,</i> <i>E-mail: info@icm.ch</i> www.icm.ch</p>	
<p>19–20 March Bremen (Germany) Waste to energy+recycling International forum for the recovery of energy and materials from waste and biomass – Freesen & Partner Phone: +49 2802 9484 840 Fax: +49 2802 9484 843 E-mail: info@wte-expo.de www.wte-expo.de</p>	<p>22–23 April Kiev (Ukraine) 8th CIS Steel and Raw Materials in the World Markets Business-Forum and Metal Expert Phone: +38 093 337 9957 Fax: +38 056 794 3394 E-mail: k.lashkov@b-forum.ru www.b-forum.com</p>	<p>29–31 May Sofia (Bulgaria) Save the Planet Waste management and recycling conference and exhibition for South East Europe – ViaExpo Phone/Fax: +359 32 960 011 Fax: +359 32 960 012 E-mail: office@viaexpo.com www.viaexpo.com</p>	
<p>7–9 April Malmö (Sweden) Shiprec 2013 International conference on ship recycling World Maritime University Phone: +46 40 356 343 E-mail: shiprec2013@wmu.se www.wmu.se</p>	<p>27–29 May Shanghai (China) BIR Spring Convention Bureau of International Recycling Phone: +32 2 627 5770 Fax: +32 2 627 5773 E-mail: bir@bir.org www.bir.org</p>	<p>5–7 September Karlsruhe (Germany) Recycling Aktiv Outdoor recycling exhibition show Geoplan GmbH Phone: +49 72 29 6060 Fax: +49 72 29 60639 E-mail: info@geoplanGmbH.de www.recycling-aktiv.de</p>	
<p>8–10 April New Delhi (India) WMR India 2013 Exhibition on waste management and recycling Mack Brooks Exhibitions Phone: +44 1727 814 400 Fax: +44 1727 814 401 E-mail: info@mackbrooks.co.uk www.mackbrooks.co.uk</p>	<p>28–31 May Moscow (Russia) WasteTech 2013 Sibico International Phone: +7 495 225 59 86 E-mail: waste-tech@sibico.com www.waste-tech.ru</p>	<p>10–12 September Birmingham (UK) RWM Exhibition EMAP Phone: +44 20 7728 3724 Fax: +44 20 7728 4200 www.rwmexhibition.com</p>	
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Progress for UK's Scrap Metal Dealers Bill

In the UK, the Scrap Metal Dealers Bill has negotiated the House of Lords committee stage and is on course for implementation early in the fourth quarter of this year. The Bill is now unlikely to return to the House of Commons and will probably go forward for Royal Assent in May.

Introduced last year by Conservative MP Richard Ottaway, the Bill proposes a tougher licensing and enforcement regime in a bid to tackle metal theft. According to Ian Hetherington, Director General of the British Metals Recycling Association (BMRA), the Bill represents 'a very good framework for regulation of the scrap metal industry - it is comprehensive and hopefully will rapidly become an Act'. He hopes the Bill will close off 'loopholes', such as the 'unfair playing field' created by exemption of some metal traders - including motor vehicle salvage operators - from the current legislation.

Industry 'disruption'

Despite welcoming the progress of the Bill through the Houses of Parliament, Mr Hetherington laments the fact that its implementation will have been preceded by the ban on cash payments for scrap metal in England and Wales, which came into effect on December 3 last year as part of the Legal Aid, Sentencing and Punish-

ment of Offenders Act. Early evidence suggests the cash ban has done little to reduce metal theft but has certainly caused 'disruption' in the scrap industry. UK magazine Materials Recycling World has reported that, in the week after the ban entered force, British Transport Police visited more than 200 yards and only five dealers were found to be in contravention of the new requirement. But while acknowledging that the majority of customers appear 'quite content' with a system of transferring payment 'from bank account to bank account', Mr Hetherington remains 'cautious' about reports of seemingly high levels of compliance with the cash ban; specifically, he fears some 'wily' operators may be holding on to material, postponing sales until the authorities' focus shifts away from the issue. 'We are not complacent - and the police must remain vigilant,' he says.

Among the responses to the ban, scrap metal giant EMR is making an on-site cheque-cashing service available to its customers, prompting accusations of creating 'an uneven commercial landscape'. However, EMR has insisted that the system meets government guidance on the legislation in that it provides traceability and an effective audit trail.

www.recyclemetals.org

Quote ~ Unquote

'Character is what a man is in the dark.'

 Snap and win

15 years of Recycling International

Where have you spotted Recycling International lately? That is the question we are putting to you. As you might know, we are celebrating our 15th anniversary this May and, as part of the festivities planned to mark this occasion, we are inviting you to take part in our anniversary-edition photo contest.

The winning photograph will be published in our special May issue and its sender will also receive a **1-year free subscription** to Recycling International. But in this case, there are no losers; all entrants will be rewarded with an illustrated copy of **'Death in the Paranoid Parrot'**. This is a sequel to 'Boobs, Beads & Bourbon' and again contains cherry-picked viewpoints written by Recycling International's Editor Manfred Beck over the last few years.

How to enter

So what exactly is your photo contest assignment? We would like to ask you

to use your imagination and to capture our magazine in unexpected settings or amusing, endearing or otherwise surprising moments. It could be on top of a metal scrap heap, in your local dentist's waiting room, at your kid's kindergarten class or perhaps in a more exotic location. Anything is possible, as far as we're concerned. The contest will run from **February 1 to April 1** to give us sufficient time to select the most interesting pictures. Be sure to leave your name and contact information, plus the location where the picture was taken. Please note that there is no limit on how many pictures you can submit, so feel free to take your camera out for the afternoon.

You can post your pictures on our Facebook and Twitter page or send your photos to: marketing@recyclinginternational.com

To post the pictures, visit:

www.facebook.com/RecyclingInternational
www.twitter.com/RecyclingIntl

What are you waiting for? Join the celebration and win!

Boeing and BMW target carbon fibre reclaim

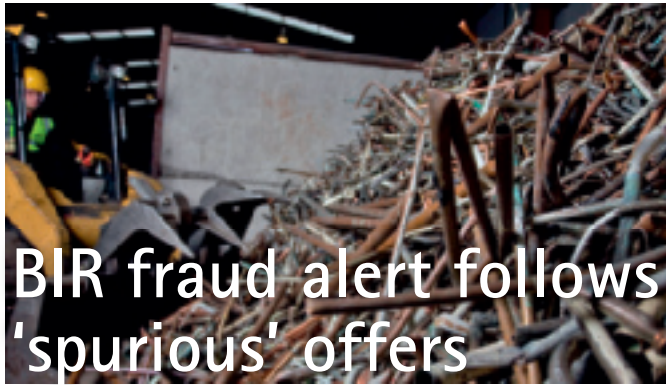
Aircraft giant Boeing has signed an agreement with car-maker BMW that will see the two companies share their knowledge on carbon fibre materials through a joint research project.

Boeing and BMW intend to collaborate on improving the manufacturing process for carbon fibre via process simulations and will also exchange ideas regarding the automation of manufacturing. The new partnership is a 'very important step forward in developing the use and end use of carbon fibre materials,' says Boeing's Commercial Airplanes Vice President of Product Development Larry Schneider. He identifies as a priority the drawing-up of a plan for end-of-life products made



from carbon fibre. 'We want to look at ways to reclaim and reuse those materials to make new products,' he states. 'Our work with BMW will help us attain that goal.'

According to BMW Development Board Member Herbert Diess, Boeing's 'extensive experience' will help boost sustainable production solutions in the transportation sector. www.boeing.com



BIR fraud alert follows 'spurious' offers

A 'spate of spurious business offers in the international recycling industry involving non-existent cargoes of scrap metal' has left the BIR world recycling organisation 'very concerned'. In recent weeks, several cases have been reported to the Brussels-based body of scrap cargoes being offered to member companies 'at knock-down prices'. But after verification through the London-based International Maritime Bureau (IMB), which forms part of the Commercial Crime Services anti-crime unit of the International Chamber of Commerce, it became apparent that associated documents 'were not authentic'. And in several cases, BIR adds, 'the same documents had been presented on multiple occasions with different company names', suggesting that either the same individuals were behind the offers, or that the documents were available in the public domain and were 'ready to be manipulated by any fraudulent individual'. According to the IMB, with which BIR has an agreement to share information on fraud and theft in the recycling industry, further analysis revealed the offers were quite frequently made in the name of real traders whose identities had been

'cloned' for fraudulent purposes. One strategy appeared to be the creation of a new website with a domain name similar to that of the genuine company, featuring its contact details but with different telephone numbers. It also found that email communications allegedly sent from a UK-based company were actually generated in Nigeria. The IMB has also seen a number of cases of major carriers' websites being cloned to provide convincing tracking facilities - 'often hosted on domains with names similar to the genuine carrier's website'. Once funds have been handed over but the customer has failed to receive the goods, there is very little he or she can do to recover the loss, states BIR. Law enforcement officers will not get involved unless there is proof a crime has been committed in their jurisdiction. In addition, many of the cases involve funds of under US\$ 100 000 - 'making them quite often low priority for the already overburdened police'. BIR is urging its members to report any suspicious documents or fraudulent activity to the IMB 'so that the information can be disseminated to manage risk'.

www.bir.org

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Joke of the Month



The Night Nurse

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www.sierraurope.com

A very tired nurse walks into a bank, totally exhausted after an 18-hour shift. Preparing to write a check, she pulls a rectal thermometer out of her purse and tries to write with it.

When she realises her mistake, she looks at the flabbergasted cashier, and without missing a beat, she says: 'Well, that's great.....that's just great.....some asshole's got my pen!'

People

Bernhard Reiling

The German Federal Association of Secondary Raw Materials and Waste Management (bvse) has installed Bernhard Reiling, a glass recycling specialist and entrepreneur, as its new President. The bvse will continue to 'adopt a combative attitude towards any parties or communities attempting to penalise medium recycling players', Mr Reiling has assured.

www.bvse.de

Chris Jones

The London Metal Exchange (LME) has appointed Chris Jones as Chief Risk Officer for LME Clear, which it hails as a major step in the LME's self-clearing programme. Mr Jones will take up the role in early 2013.

www.lme.co.uk

Graig A. Feldman

Graig A. Feldman has become President of US scrap processor and trader David J. Joseph Company (DJJ) with direct responsibility for all businesses and activities across the Joseph Family of Companies.

www.djj.com

Business

Sims Metal Management

In the USA, Sims Metal Management has sold its Arizona scrap metal recycling assets to SA Recycling LLC (SAR) - a joint venture owned equally by SimsMM and Adams Steel, with operations in California, Nevada and Arizona. Concluded for US\$ 35 million in cash, the sale principally involves the real property related assets for two scrap metal recycling facilities located in Phoenix and Tucson.

www.simsmm.com

Hewlett-Packard

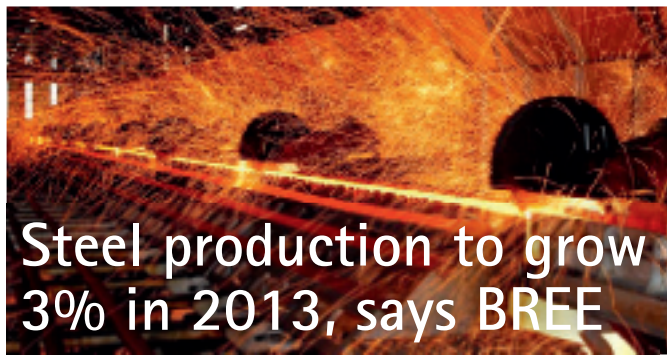
In a bid to recycle more electronics in East Africa, US-based multi-national Hewlett-Packard (HP) has been operating 'the first advanced e-scrap processing plant' in the region under the name East Africa Compliant Recycling (EACR). HP hopes the venture will help the country deal with the growing volume of mobile phones, computers and similar electronic equipment generated in East Africa.

www.hp.com

Alutrade/New Earth Solutions

UK-based waste treatment and renewable energy specialist New Earth Solutions has struck a deal with aluminium reprocessor Alutrade to recycle its non-ferrous metals for the coming 12 months. Once mixed non-ferrous materials arrive at Alutrade, they will be separated into the different ingredients. The incoming stream will include cans as well as other forms of metal.

www.newearthsolutions.co.uk



Steel production to grow 3% in 2013, says BREE

World steel consumption will jump around 4% to 1.55 billion tonnes in 2013, according to the latest 'Resources and Energy Quarterly' report from Australia's Bureau of Resources and Energy Economics (BREE).

Usage in China is also forecast to increase by 4% to give a total of 668 million tonnes as 'commencement of construction on government-funded infrastructure projects is expected to increase steel consumption demand in the second half of 2013'. Demand for steel in India for infrastructure projects is expected to increase domestic steel consumption by 7% in 2013 whereas EU steel usage is thought likely to remain largely unchanged from its 2011 and 2012 level.

BREE also forecasts that world steel

production will increase by 2% in 2012 and by a further 3% in 2013 to 1.59 billion tonnes, with China's output expected to climb 4% next year to 732 million tonnes. 'The growth is in line with higher domestic consumption demand from infrastructure projects and forecast higher exports of steel products,' the organisation explains. India's steel production is forecast to increase by 6% in 2012 and 7% in 2013 to yield a total of 82 million tonnes, but output in the EU is predicted to follow up a 3% decline in 2012 with another, more minor fall in 2013 to give a total for the latter year of 170 million tonnes 'as the steel industry continues to consolidate in response to lower European demand'. www.bree.gov.au

South Africa struggles with recycling rate

'Only 3.3% of the country's urban population regularly recycled household waste in 2010,' a new study by South Africa's Council for Scientific and Industrial Research (CSIR) has revealed. According to its data, around 25% of the estimated 17.2 million tonnes of municipal waste generated domestically in 2011 constituted recyclables, including metals, glass, paper and plastics.

Citing the requirements of South Africa's Waste Act and the National Waste Management Strategy, CSIR warns that a substantial task lies ahead in convincing all households in the country's metropolitan municipalities, secondary cities and large towns to separate their waste into recyclable and non-recyclable fractions by 2016.

'It is alarming that two-thirds of the more than 2000 urban South African households surveyed do not know where to dispose of their household recyclables,' says CSIR research project leader Wilma Strydom. She notes that over 73% of South Africans living in urban areas reported no recycling activity at all, with studies suggesting this is the result of a lack of space or time, inconvenient recycling facilities and ignorance as to what is recyclable and what is not. 'The results show that a two-bag system - simply separating dry waste from wet waste like food scraps - combined with a regular kerbside collection service, would create the best opportunity to mobilise South Africans to start recycling,' remarks Ms Strydom. www.csir.co.za

E-scrap recycling vision for Taiwan

With a more mature recycling technology expected to emerge in the near future, Taiwan might be well-equipped to process electronic waste in the coming decade, according to Ma Hsiao-kang, Professor of Mechanical Engineering at the National Taiwan University. Rare earth metals such as lutetium and terbium are helping to shape modern-day industry, Professor Ma stated at the recent Electronics Recycling Asia conference, citing their strong influence in the area of low-carbon energy technologies. He told delegates in the Chinese city of Guangzhou that Taiwan spends around US\$ 276 million every year to facilitate exports of 'high-tech garbage' meant for recycling. 'We are talking about huge market potential because not many countries can process such waste,' Professor Ma concluded.

Instead of allowing this large volume of e-scrap to leave the country, the island nation would do well to anticipate the upcoming advancement in recycling by opting to process these products on home soil. Professor Ma said such measures would free up millions of dollars to invest in, for example, establishing a solid industry for importing e-scrap from other countries and refining the much-needed rare earth elements.

The Taiwan academic recognised that extraction and recycling techniques for rare earth elements have been limited to 'a relatively minor scale' to this point and so a bolder approach is required to turn his vision into a 'commercial reality', he said.

www.ntu.edu.tw/engv4 and www.chalmers.se/en



UK e-scrap recycling dips in 2012

The UK's e-scrap collection volumes fell to 368 520 tonnes in January-September last year from 380 915 tonnes in the same period of 2011, according to the nation's Environment Agency. With a collection rate of some 38% in 2011, the UK is still 'significantly short' of meeting the 45% target demanded by 2016, it adds.

The collection rate for household waste electrical and electronic equipment (WEEE) dropped from around 48% in the first three quarters of 2011 to 47.2% in the same period last year. The business-to-business sector witnessed a drop in collection volumes from 108 101 tonnes to 103 705 tonnes. Meanwhile, new equipment entering the market declined from more than 790 000 tonnes to a little over 780 000 tonnes. However, collections in the third quarter of 2012 achieved an 'annual high' of 127 331 tonnes versus 121 246 tonnes in January-March and 119 950 tonnes in April-June. Additionally, collections in the small household appliances category, which covers items such as vacuum cleaners, irons and toasters, amounted to 25 291 tonnes in last year's January-September period - up from 24 223 tonnes in the first three quarters of 2011, states the Environment Agency.

www.environment-agency.gov.uk



Spanish team builds bricks from paper residues

Researchers at the University of Jaén in Spain have developed a method to create bricks by mixing pulp and sludge residues from the paper industry with ceramic material used in the construction industry.

The scientists began by collecting recycled cellulosic waste from a paper factory, together with sludge from waste water purification. Both are subsequently mixed with clay, upon which the mixture passes through a pressure and extrusion machine to yield a single, long strand of material which is then sliced into individual bricks currently measuring 3 cm by 1 cm by 6 cm. Tests already conducted suggest larger-dimension bricks retain the same promising properties. 'Adding waste means that the end product has low thermal conductivity and is therefore a good insulator,' explains uni-



versity researcher Carmen Martínez. Additionally, this approach circumvents the need for traditional raw materials. The fact that the brick prototypes contain organic materials also means that they could provide energy at a later stage. Mrs Martínez admits that alternative bricks boast a lower than usual mechanical resistance, though she underlines that this level is well above the legal minimum.

www.ujaen.es

Source: EurekaAlert

Fraunhofer changes the game for rubber scrap

Whereas in the past rubber residues could only be downcycled to create products such as floor coverings, Germany's Fraunhofer Institute has come up with a new kind of plastic compound called elastomer powder modified thermoplastics (EPMT) which, it is believed, will finally yield high-quality material. 'Each year throughout the world, up to 20 million tonnes of rubber are processed and a large portion of it goes into the production of vehicle tyres,' states the institute. 'In the best case, the waste rubber is recycled into secondary products, though it typically lands in the incinerator.' The reason for this, it argues, is that 'appropriate techniques' to yield

a valuable recyclate have been lacking. With the introduction of EPMT, advanced products - such as handles, knobs and steerable castors - become a possibility. The new plastic compound is comprised of rubber residues crushed into elastomer powder, which is then blended with thermoplastics - specifically polypropylene. 'EPMT may contain up to 80% residual rubber; only 20% is made up by the thermoplastics,' explains Fraunhofer scientist Dr Holger Wack.

According to the institute, the EPMT can be easily processed in injection moulding and extrusion machines. 'Altogether, three basic recipes have been developed that collectively can be processed on the large technical production machines,' the institute adds. 'The researchers are capable of producing 100 to 350 kg of EPMT per hour.'

Dr Wack and his team have founded a spin-off venture, Ruhr Compounds, which will manage the production and sale of EPMT.

www.fraunhofer.de/en



Business

Inoxum

In a development of massive significance to the stainless steel sector, including the scrap industry, Outokumpu and ThyssenKrupp AG have finally completed the Inoxum transaction. The combined entity boasts combined revenues of Euro 9.6 billion and an annual cold rolling capacity of approximately 2.8 million tons and plans to reduce its melting capacity by approximately 1.4 million tons. Apart from pursuing a stronger market presence in Asia as well as the Americas, the group expects to witness annual synergy savings of approximately Euro 200 million.

www.abouttransaction.com

Shanks/Heineken

International beer brewer Heineken is literally 'going green' and has enlisted the help of UK-based waste management specialist Shanks Group to recycle 15 000 tonnes of its brown glass bottles. Under the contract, Shanks' recently-acquired Van Tuijl glass recycling business will process 9 million brown beer bottles - the last remaining batch produced exclusively for the Dutch market for over 80 years

www.shanksplc.co.uk

GreenFiber

Although fibreglass still commands 94% of the US insulation market, a cellulose alternative is making an ever bigger impact. And GreenFiber, a North Carolina-based manufacturer of natural fibre insulation, is now incorporating 85% recycled paper fibre into its products. Anything from newsprint and paper towels to pizza boxes and pre-consumer toilet paper is treated at GreenFiber's plants, where fire retardants have been introduced to the production process.

www.greenfiber.com

Sims Recycling Solutions

Through its Sims Recycling Solutions (SRS) division, Sims Metal Management has expanded its North America SRS electronics recycling business by acquiring the assets of Genesis Recycling of Langley, British Columbia, Canada. The financial terms of the transaction have not been disclosed.

www.simsrecycling.com

Budafilter 94

In light of on-going waste issues in Hungary, Budafilter 94 Ltd has established a new PET bottle recycling plant at Mezöfalva. The facility has received financial backing worth around Euro 2.5 million from the EU and is scheduled to achieve an average production capacity of 1200 tonnes per annum. The processed plastics will serve to create granulates and tape, as well as plastic well pipes and water filters.

www.budafilter.hu

H&M

Apparel powerhouse H&M is gearing up for the launch of a worldwide clothing collection initiative. As of February, customers will be able to hand in 'any pieces of clothing, from any brand and in any condition' in all of the 48 countries in which it has a presence. H&M's Swiss partner I:Collect will take the clothes to a sorting facility in Germany and manage the overall recycling infrastructure.

www.hm.com

CTC Plastics

CTC Plastics is partnering fellow US company Lehigh Technologies to manufacture pallets from tyre rubber. Lehigh is to provide the powder from discarded and unusable tyres while CTC will supply a special resin compound - Xpro Rubber Batch - which contains micronised rubber powder. Employing a 50/50 powder and polypropylene mix, the plastics specialist will manufacture pallets from 100% recycled material.

www.ctcplastics.com

China primed for legislative burst in 2013

'We will bring in new legislation this year to deal with electrical and electronic waste,' China's Undersecretary for the Environment Dr Christine Loh has stated in a letter to the South China Morning Post.

According to Dr Loh, who has been labelled by many in industry as an 'environmental heavyweight', legislation will also be introduced to ensure that the plastic bag levy scheme extends to all retail outlets. 'We will also shortly consult the public on implementing a glass recycling system,' she wrote. 'Hong Kong's recycling rate in 2011 was 48%. By 2015, we aim to increase it to 55%. This

requires us to work with the community to improve separation of waste at source.' Specifics on the government initiatives are expected to be revealed shortly.

Stating that the country needs to recover energy and resources from 'unavoidable waste' and to reduce bulk volumes before they go to landfill, Dr Loh said that 'a state-of-the-art sludge incinerator' is being built in Tuen Mun - to be completed towards the end of the year. Meanwhile, waste charging for municipalities will become a reality by 2016. 'The issue of illegal dumping and fly-tipping will be considered as part of designing the waste charging system,' she noted.

Medical world strengthens plastics recycling focus



Stanford University Medical Center and the Cleveland Clinic are examining project results to explore how they can best boost plastics recycling at hospitals across the USA.

'We estimate that up to 5987 tonnes of solid waste are generated by hospitals daily, and that 20 to 25% of that may be plastics,' Peylina Chu, an engineer and sustainability specialist with the Healthcare Plastics Recycling Council has told Plastics Today. Up to 85% of the plastic generated is non-hazardous.

The project at Stanford has proved that a substantial amount of money could be saved by recycling high-end plastic waste that did not come into contact with patients and is not contaminated, states Mrs Chu. According to her, there is 'a lot

of plastic that can be safely recycled from hospitals'.

Around 75% complete, the study extends to plastic waste collected in surgical services, interventional services including catheterisation and angiography labs, pre- and post-anaesthesia care settings and pharmacy.

Many hospitals already recycle plastic water bottles, foodservice plastics and even blue sterilisation wrap, but Stanford and the Cleveland Clinic hope that the new pilot studies will raise the bar significantly. Mrs Chu notes: 'One of our goals is to provide more education to recyclers about the recyclability of non-contaminated hospital waste.'

www.hprc.org and www.greenwaste.com



Australia suffers car theft increase

A number of recycling operators across Australia are prepared to pay cash for vehicles they suspect are stolen and then to ship them overseas, according to the nation's automotive industry. National Motor Vehicle Theft Reduction Council (CAR-SAFE) spokesman Ray Carroll, a former police officer, says that theft of this type is becoming an 'increasing attraction'. Older cars are proving to be a particular point of focus although even light commercial 'prestige cars' such as the Toyota Hi-Lux have been stuffed into shipping crates. Reports suggest the vehicles have been ending up on roads in Africa, Egypt, the UK and Serbia. Many of the stolen vehicles are stripped

for key components, such as engines and gearboxes, which are commonly sold into Asia as spare parts, adds Mr Carroll. It is 'far too easy' for car thieves to sell vehicles for a few hundred dollars as an increasing number of buyers move to cash in on their recycled value on international markets.

Car thefts started to climb noticeably during 2011 for the first time in a decade, the council observes. A total of 13 258 vehicles were stolen during the 2012 March quarter - up 10% compared to last year. Known car theft 'hot spots' include Hume, Moreland and Melbourne. www.carsafe.com.au

Source: The Australian

Happy ending for South Africa's tyre tale

After a yo-yo journey, the Waste Tyre Management Plan from the Recycling and Economic Development Initiative of South Africa (REDISA) has been approved for 'immediate implementation' by the country's Minister for Environmental Affairs Edna Molewa. Following its initial approval in 2011, the plan oscillated between withdrawal, being 'back on track', being put on hold and even stolen. However, the approved

version lacks previously-included waste reduction targets.

REDISA Chairman Hermann Erdmann praised the minister for taking 'such prompt action to resolve the chaos that the suspension of the plan was causing in the tyre industry'. He adds: 'A review application takes months to complete, and for all that time the industry would have had to provisionally set aside funds to pay the fee if the Review Court found in favour of the minister, and deal with refund claims if it found against her.'

Around 11 million scrap tyres are dumped in South Africa every year, notes Mr Erdmann. With the Waste Tyre Management Plan now accepted, the government and REDISA will aim to establish a network of transporters to collect scrap tyres countrywide for supply to recyclers. www.redisa.org.za





Bottles remain 'leading' plastics recycling source

Owing mainly to a growing emphasis on sustainability in the packaging sector, as well as notable processing and sorting advancements, US demand for post-consumer plastic will rise 6.5% per year to 3.5 billion pounds by 2016, according to the latest study from the Freedonia Group Inc.

Packaging will continue to be the leading market for recycled plastic in 2016, the Cleveland-based industry market research firm points out. It heralds bottles as the leading source for recycled plastics, putting PET at the top of the list on 37% of total demand by 2016, followed by high-density polyethylene (HDPE) on 33%, low-density polyethylene (LDPE) on 14% and polypropylene on 11%.

PET will see 'above-average gains in demand', fuelled by rising recycled content in beverage bottles and thermoformed containers, says the study. Meanwhile, 'sub-par increases' in HDPE collection will limit demand for recycled resin. The most rapid growth, according to the Freedonia Group, will occur in the LDPE market which will benefit from 'a rebound in the construction market'.



A surge in growth is also expected for smaller-volume resins such as polypropylene and nylon due to increased collections of products such as carpet, plastic foam and consumer electronics for recycling. In motor vehicles, use of recycled plastic in fabrics and other interior applications will increase at a robust pace, notes the Freedonia Group. However, the overall rate of plastics recycling in the USA will remain 'relatively low' - at 6.5% of total plastic demand in 2016 - as the industry 'faces a number of challenges', states the report.

www.freedoniagroup.com

US e-scrap recycling sees 'tremendous growth'

The US electronics recycling industry provides the nation's economy with a US\$ 5 billion annual boost as well as work for 30 000 full-time employees, according to the Institute of Scrap Recycling Industries (ISRI). These figures compare to US\$ 1 billion and 6000 workers back in 2002, indicating tremendous growth over the last decade.

Looking back at the US e-scrap market of last year, ISRI reports some 3 to 4 million tonnes of used and end-of-life devices were processed in the USA. More than 70% of collected material is converted into specification-grade commodities - including scrap aluminium, copper, circuit boards, plastics and glass - to create new products worldwide.

Up to 75% of the volume of equipment collected originates from business and commercial enterprises. As many recyclers are operating at 50% of capacity, ISRI adds that the electronics recycling industry 'is poised to meet the anticipated increased demand for more used products and specification-grade commodities'.

Additionally, the marketplace has been seen to 'push' electronics recyclers to become programme-certified in order to improve operational controls, meet customer demands and secure a competitive advantage.

www.isri.org

Business

Bühler/Deceuninck

Switzerland-based plant and equipment technology specialist Bühler has installed a new optical sorting system for Belgian sustainable building products manufacturer Deceuninck. Supported by Bühler's SORTEX technology, it will process both post-industrial and post-consumer rigid PVC waste and will achieve a recycling capacity of around 20 000 tonnes a year. www.buhlergroup.com

Rumpke

US-based Rumpke Consolidated Companies Inc. has been awarded US\$ 32 million in funds by the Ohio Air Quality Development Authority so it can establish a new recycling plant in Cincinnati. The 84 000-square-foot recycling plant will replace the Rumpke facility that was damaged in a fire in 2012. It will process 55 tonnes of residential and 20 tonnes of commercial materials per hour through a dual in-feed system. www.rumpke.com

Follow Recycling International on [Twitter](#), [LinkedIn](#) and [Facebook](#) to get your latest recycling news. Or visit our website www.recyclinginternational.com for extensive daily news service.

Low-quality recyclate comes at a steep price



The UK-based Resource Association has published a report which seeks to identify the cost to domestic reproprocessors of dealing with inconsistent and poor-quality recyclate from the domestic municipal waste stream. 'The cost impact of poor and inconsistent quality of recyclate for UK reproprocessors is significant - recorded at a conservative estimate of at least £51 million (US\$ 83 million) annually, representing an average cost per tonne of £1567 (US\$ 2550)', notes the association. Better regulation is required to turn the situation around, it argues.

While the current operational contamination rate for the UK has been set at 5.9%, the average degree of contamination amounts to 9.8% - equivalent to some £75 469 900 (US\$ 122 861 341) in

annual costs. The highest recorded levels of contamination were 21.8%, translating into £177 826 644 (US\$ 289 481 913). 'In the climate in which claims are made about the efficiencies and reduced costs associated with co-mingled and MRF sorting systems in the UK, we thought it time to understand better how costs that were perhaps incurred in collection systems appear to have shifted and become cost burdens for our manufacturing base,' the association explains. 'While the burden of these costs is being absorbed by the reprocessing sector, it acts as a real barrier to future investments and is also costing jobs in the UK economy, by limiting expansion opportunities for UK reproprocessors.'

www.resourceassociation.com

let's recycle!



“

Galoo is one of Europe's leading recycling firms of ferrous and non-ferrous metals. The group currently has 53 divisions in Belgium, France and the Netherlands. Every year, Galoo recycles 1,700,000 tonnes of ferrous metals, 80,000 tonnes of non-ferrous metals, 25,000 tonnes of plastics and 200,000 tonnes of shredder residue. By continuously investing in new technologies, Galoo strives to achieve its goal of 100% recycling.

”



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info@galoo.com
www.galoo.com



“

Over the years Galoo has developed an industrial process, which is used to recycle scrap from consumer goods, cars and factories in an environment-friendly way. By converting waste products into secondary raw materials, we contribute to a cleaner environment.

Let's recycle!

”

giving earth its second nature

/ Machinex zooms in on sorting quality



Recognising the over-arching importance of the quality of sorted material, Canadian company Machinex has 'seized the opportunity' to manufacture the MACH Ballistic - an advanced separator based on proven European technology.

Apart from sorting 2D material like plastic film, paper, cardboard and fibres, the

MACH Ballistic has also been designed to sort 3D items such as containers, plastic bottles and cans. 'Fine particles can be collected separately with the optional variable screen openings,' remarks Machinex. To date, this feature has yielded a big positive response from the paper recycling sector, it adds. 'Multiple separators can be stacked or paralleled to address any sorting challenges,' adds the Canadian firm. The machine has very few mobile parts and thus 'hardly requires any maintenance', it goes on to say.

Machinex, Plessisville, Canada,

Phone: +1 877 362 3281,

Fax: +1 819 362 2280,

E-mail: info@machinex.ca

www.machinextechnologies.com



/ SID shredder targets 'right' granulometry

Bidding to twin innovation with reliability, Swiss recycling equipment manufacturer SID SA has developed a new four-shaft shredder, dubbed the D70 4S. With a sieve located under the machine, the tertiary shredder's additional shafts are said to deliver a material output of very small dimensions.

Capable of treating anything from tyres, hazardous waste and refuse derived fuel to wood, paper and textiles, the hydraulically-driven D70 4S is capable of re-shredding material until it has just the 'right' granulometric properties to pass through the sieve, yielding granulate well below the average of 100 mm. Custom operation is provided by a series of

sieves with different lattice sizes to give an 'optimal throughput granulometry solution', states SID.

The shredder boasts a capacity of 1.5 to 12 tonnes per hour while the drive of the shafts can be changed independently. Multiple electric and hydraulic drive systems are included, as well as shock absorbers to ensure efficient overload protection. SID has also added a lowering and sliding (LAS) system for quick and easy screen replacement.

SID SA, St-Sulpice, Switzerland,

Phone: +41 32 862 65 00,

Fax: +41 32 862 65 01,

E-mail: info@sida.ch

www.sidsa.ch

/ Redesign for Paal Group's 'first-class' baler

On-going technological developments have enabled the Paal Group to enhance its established automatic S1W baler. 'Examples of improvements are a new press plate guiding and a touch panel for comprehensive function and data display,' comments the recycling equipment specialist.

Like its predecessor, the revised model - called the S1W C - constitutes a suitable tool for converting tin and aluminium cans into highly-compressed packages by deploying forces of between 650 kN and 1200 kN.

Characterised by its sturdy and stable construction, the reworking of what the Paal Group describes as a 'first-class' baler focused mainly on the size of the entire machine. 'Additional to the modular design in a more compact unit, the

new press is alternatively available as a pure one-stroke unit - which further reduces the required space,' states the group.

The base and side walls of the press box are panelled with highly wear-resistant bolted special steel. The machine boasts a completely bolted design without welds, which is said to eliminate fatigue fractures as well as metal fatigue at weld seams.

The control cabinet is equipped with a fully-digital touch-screen panel and is set up separately 'to keep possible oscillations or vibrations away from the press'.

Paal Group, Georgsmarienhütte, Germany,

Phone: +49 5401 488 0,

Fax: +49 5401 488 13,

E-Mail: info@paalgroup.com

www.paalgroup.com

/ Komptech's Terminator takes care of costs

Austrian equipment manufacturer Komptech has unleashed the Terminator shredder on to the market. Described as 'extremely tough', the machine has been designed to be cost-conscious - saving up to 30% of energy compared to rival models, it is claimed.

The Terminator is a direct low-speed universal shredder that is said to be an ideal fit for any facility seeking to process demanding and bulky materials, such as mixed construction waste. It features a single-shaft and is powered by an asynchronous motor which drives a zero-maintenance Powerband belt system. The latter yields a notable benefit, argues the manufacturer, in that it 'transfers the energy to a two-speed reversing transmission with specially-developed high-performance clutches'. From that point,



the power goes directly to the shaft with virtually no energy loss.

Komptech offers four different shredding units to fit the new shredder, so it may yield output ranging from universal, to extra-fine.

Komptech, Frohnleiten, Austria,

Phone: +43 3126 505 0,

Fax: +43 3126 505 505,

E-mail: info@komptech.com

www.komptech.com



Container theft: a co

At the BIR world recycling organisation's Spring Convention in Rome last year, a representative from the UAE-based international scrap trading company Ala Metals LLC addressed the International Trade Council meeting devoted to scrap theft and fraud, stunning many in the auditorium with a video showing exactly how a container can be opened without breaking the shipping line seal. In this article, the original version of which was published in 'Waste & Recycling Middle East', the Ala Group offers an even more detailed insight into its experiences with compromised containers and explains why it has decided to stop supplying to South China.

The recycling industry has been facing a predicament in the form of container cargo thefts. Material theft could potentially harm the trading of valuable commodities on specific routes. In the arena of international trading, criminals take advantage of the loopholes in the global system and the trust of those exporting and importing scrap metals. In the Middle East, and in common with other suppliers, the Ala Group received weight shortage complaints ranging from 200 kg to over 10 tonnes in 2012. The Dubai-headquartered Ala Group was

founded in 1991 and is a well-known company in the Middle East, India and Pakistan. It has offices and yards in strategic locations in the UK, North and West Africa and the CIS region, and is also expanding into the USA where it is starting up its own yard. The company also operates its own lead smelting recycling unit with a capacity of 2000 tonnes per month. The company is involved in all aspects of metals trading and is continuously expanding. The Ala Group exports scrap metals to various countries like China, South Korea, Taiwan,

Japan, Thailand, Malaysia and the Indian sub-continent. 'We deal in ferrous and non-ferrous metals with an annual 72 000 tonnes business in non-ferrous alone, and we plan to increase this to 96 000 tonnes this year (2012),' says Ala Group's President Muzammil Haji Amin.

Only copper is stolen

The Ala Group's problems have been solely on the South China route. 'The loading ports are always different with materials bound for South China and the shortage always occurs in Hong Kong or at final destination in which Hong Kong is a trans-shipment port,' Mr Amin explains. 'Moreover, I supply copper, aluminium, brass and also various low-value materials to China, but only copper is stolen. I wonder how the thieves know exactly which of the containers has copper.'

The most alarming fact is that the containers are being delivered to Hong Kong port with their seals intact, but ultimately with a consistent shortage of material. 'The containers that are loaded in our yard by our own men are short of material at the destination,' Mr Amin states. 'We cannot blame the buyer, because the seal is intact. And we cannot believe that only a few containers among the hundreds that go from our yard



The River Trade Terminal, a purpose-built container terminal run by private operators for handling river trade cargoes in Hong Kong.

company perspective

would fall short of material with the weight scale and the transporters being the same.'

A company's intention is to protect material from exit to arrival port. This is scrap material and one assumes that once it reaches the port there is no chance of loss or damage, so it is not insured warehouse-to-warehouse. Earlier, the Ala Group had 'C' Clause insurance which protects against untoward incidents such as explosion, fire, attack or the sinking of a ship, from port of exit to destination port only. So one could not make claims for material shortages at this point.

Pertinent questions

The pertinent questions are: How is the material stolen without the seal being broken? Who is doing it? Where does it happen? And how to put an end to it?

According to the law, the shipping line has to deliver the containers to the customer with the seal intact. A normal container has four handles

to visit Hong Kong for an inspection and he agreed to do so on condition that: the seal should be intact; they should provide at least two or three weight scales; and the client would open the container in his presence. 'Since I have photographs of the loading of the container, I know how it was loaded before we closed the doors at the loading point,' he says. 'If the scenario is the same when we open the container, it indicates a scale error at the buyer's or seller's end. I wanted to ensure that this was not the case. And I was shocked that my customer took me to a scrap yard instead of to the Hong Kong port. In fact, he had everything ready for inspection, including the labourers. Then I realised that here were the answers to all my questions.'

Time and expertise

Normally, the shipping line notifies the consignee regarding the shipment. Along with the arrival notice, the buyer gets the details of the



Ala Group's President Muzamill Haji Amin: 'I supply copper, aluminium, brass and also various low-value materials to China, but only copper is stolen.'

from the customs department. In general, the buyer has to co-ordinate with the shipping line-appointed forwarding agent at Hong Kong regarding receipt of the container, weighing the shipment and taking it onwards to mainland China.

There are 11 terminals at Hong Kong port. Containers bound for South China via this port are first moved to the River Trade Terminal (RTT), a purpose-built container terminal run by private operators for handling river trade cargoes in Hong Kong. The forwarding agents have five or six days to move the containers from the main port to the RTT, and there is the possibility that in transit the containers are discreetly moved to certain scrap yards in the 'New Territory' area.

It is believed that the thefts take place in these yards as the thieves have the time and expertise to break the hub bolt or rivet without breaking the original shipping line seal. Once the required quantity of copper is removed, one can fix the handle with a new hub bolt or rivet. The container is then sent to the weight scale in the RTT and the forwarding agent informs the buyer of the weight shortage with the supporting weight >

'I wonder how the thieves know exactly which of the containers has copper.'

and the usual practice is to place the seal in the middle of the handle; some people also use locks, while others cover the handle with plastic or paper and then seal it. 'But the container can be easily opened without breaking the shipping line seal as it is usually fixed on the hub bolt seal, in the middle of the handle of the container door lever,' says Mr Amin. 'Each time I inspected them for shortage issues, I noticed that the seals were intact but the hub bolts were slightly damaged, were newly painted or had been completely changed. But since they are old containers, one cannot challenge or prove they have been tampered with or claim damages from the shipping line, so I had no choice but to pay the customer for the loss.'

Citing a recent example, Mr Amin says one of his customers complained of material shortage at Hong Kong. The container was being transhipped to China. The client invited Mr Amin

forwarding agent appointed by the shipping line to take the shipment onward to China. From this point onwards, two people are involved: a forwarding agent who transports it from Hong Kong to the specified Chinese port; and a customs broker in China who clears the container

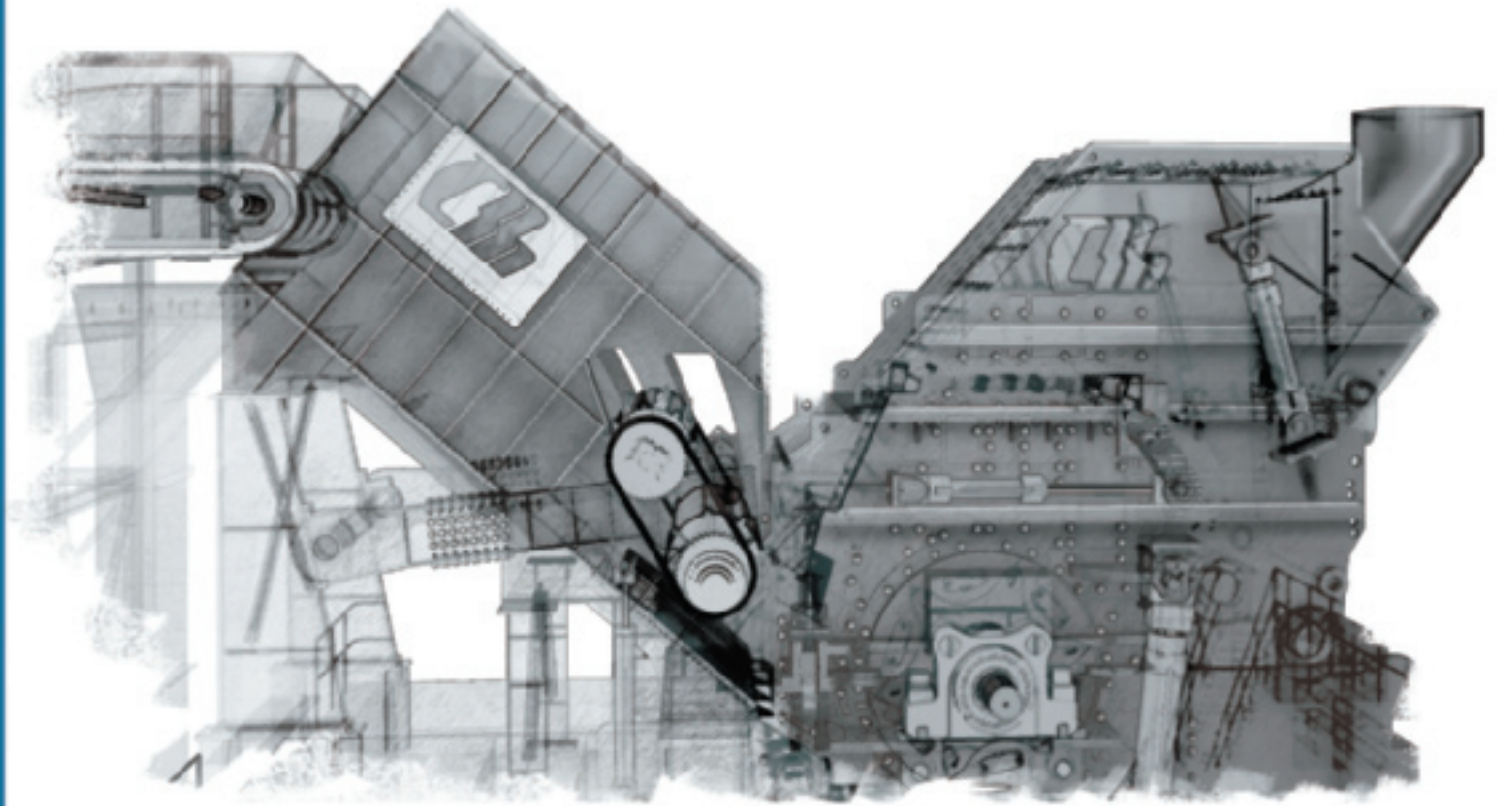
In general, the port is responsible for the security of the containers.





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slip from the RTT. Finally, the shipper is informed of the shortage. The shipper assumes the weight slip is from Hong Kong main port, but the container is actually weighed at the RTT.

Higher insurance premiums

Mr Amin's question is: 'How did it come to the scrap yard in the first place?' He continues: 'The buyer told me there was no need for customs clearance at the RTT as this container is headed

'While booking a container, the customer should, as a policy, insist on a new one.'

for mainland China. Generally, the port is responsible for the safety of the containers. But it seems there is easy movement of containers out of this port, which could be because it is considered a storage house. They could not have arrived or move onward to their final destination without permission, but I realised that if a person could get a container in transit out of the port or terminal into the scrap yard with



With containers manufactured over the past decade, there is a hub bolt at the bottom called the cam keeper which, when properly applied, can prevent container cargo theft.



In the Middle East, and in common with other suppliers, the Ala Group received weight shortage complaints ranging from 200 kg to over 10 tonnes in 2012.

such ease, anybody could do anything and a number of people in the supply chain could be involved. But we need proof to support our claims and, as mentioned, the seals are all intact so we cannot hold anyone responsible.'

Also critical to this story, Mr Amin explains, are the loading photos that the Ala Group's clients are required to send to the shipping line's forwarding agent. 'I assume that the pictures indicate certain things like the type of packaging inside the container, the quantity of material and the type of container. And with closed-door photos you know if the seals are fixed in the middle or at the bottom, which gives an idea about access to that container, the type of equipment required to offload the material, and whether the material can be easily removed from the container or not.'

When the shortages kept occurring, the Ala Group started paying high-premium insurance as per 'A Clause', which guarantees protection of goods from the company's warehouse to that of the buyer. Mr Amin says they were paying six or seven times higher for this premium rate than for the normal rate. In about one-and-a-half months, they faced three major shortages, so the insurance company too gave up. 'We have been in this industry for 22 years and our reputation is more important to us than money,' says Mr Amin. 'We have worked hard to build a rapport with our clients, and I cannot lose respect and money because someone else is stealing material. I have paid compensation for various losses from 200 kg to 10 tonnes. In the end, we decided to stop supplying to South China in late 2012.'

A loss to the industry

Currently, the number of container thefts in South China is still regarded as 'limited' but there is a belief that action needs to be taken before the situation gets out of hand. The Ala Group's President feels it is a loss to the industry as many others in the region are also facing the same problem. In his opinion, the buyers are not guilty; the government is also innocent and is offering a facility at the port to store the containers. However, he believes, the system itself needs to be improved and the issue should be brought more to the attention of the Hong Kong government so it can provide necessary security for containers in trans-shipment.

'Everyone is aware that there are loopholes in the system, but all parties involved are reluctant to act,' he says. 'Some people with high-volume



Currently, the number of container thefts in South China is still regarded as 'limited' but there is a belief that action needs to be taken before the situation gets out of hand.

businesses ignore the problem because losing one out of 100 containers seems insignificant to them; some remain silent; others raise their voices but soon give up; some people are fortunate enough to have insurance cover. We have approached the BIR world recycling body to discuss the issue and ask them to take positive action to protect our business and industry. BIR, ISRI and the CMRA are strong bodies that governments would be willing to listen to.'

Recommended action

On a positive note, the Ala Group has come up with an immediate response which it is recommending to business associates and other regional suppliers in the hope that it will effectively help reduce incidents of theft. With containers manufactured over the past decade, there is a hub bolt at the bottom called the cam keeper. According to the group, suppliers should insist on the seal being fixed on the bottom cam keeper to prevent thieves from tampering with the container as they would have to break the seal to access it; and if they do so, it is argued, one can hold the shipping line responsible. 'In certain cases, customs officials could break the seal to check the contents,' says Mr Amin. 'By law, the shipping line then has to fix the seal again and the supplier has no control over this. It happens only in 10% of the cases, but in the agreement with the shipper there could be a clause stipulating that in such cases they fix the seal on the cam keeper.'

'Since we are dealing in scrap, shipping lines do prefer to use old containers,' adds the Ala Group's President. 'While booking a container, the customer should, as a policy, insist on a new one.' And he concludes: 'We urge everyone to join in raising our voices against these unscrupulous acts of theft to avoid further financial loss and, most importantly, maintain good relations.' □



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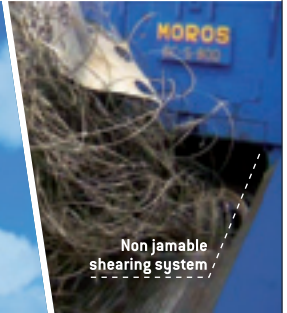
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ICM AG, Schwaderhof 7, 5708 Birwil, Switzerland, www.icm.ch, info@icm.ch, +41 62 785 10 00

Beijing students live the recycling lesson

A project that encourages students in the Chinese capital Beijing to recycle on campus has turned more than 100 tonnes of discards into useful resources over a three-year period. The Re-life University Environmental Coalition involves more than 30 colleges, including the University of International Business and Economics.

A pro-recycling project set up by Beijing's commerce and education commissions promotes sorting and recycling activities on college campuses by offering students recycled products in return for used books and discarded bottles.

'The college is very densely populated and witnesses huge consumption of recyclable resources every day,' explains Liu Quan, Director of Beijing Tianlong Ttjie Resources Recycling, which is in charge of collecting and dealing with the products. 'College students, who are independent while open to new ideas, can better understand the significance of recycling and popularise the idea further through action.' The project is expected to cover

at least 50 universities by the end of 2013, according to Mr Liu.

Every reason to contribute

Every week, college societies and associations follow a routine of collecting unwanted paper, books and bottles from dormitories, taking it to a recycling station. Students who bring the waste are rewarded with recycled products. 'You can discard it for nothing or for a pen and book, so there's no reason for students not to come and contribute,' says Li Wei, Vice President of the Re-life University Environmental Coalition, which incorporates more than 30 colleges. Typically, one to two tonnes of discards - mainly used paper - is collected each month. The 100-plus tonnes collected in the past three years has included 25 tonnes of newspapers, 20 tonnes of books, nine tonnes of coated paper, 11 tonnes of paperboard and around one million bottles and cans, says the coalition. The total value is put at Yuan 120 000 (US\$ 19 300).

'With no other channels for the students to deal with



A volunteer helps a girl to put on a bow made of recycled newspaper and advertising paper at an event to raise awareness of recycling at Beijing's Capital Library of China.

their waste, most of the used materials will end up in the trash can or with trash collectors and illegal workshops, which will generate significant pollution in soil and air during their processing,' states Mr Li.

Informal sector competition

Compared with qualified and licensed recycling companies, their informal counterparts usually offer a higher price thanks to cheaper labour.

'We have to balance the operational cost of the processing, labour cost and transportation fees, all of which far exceeds the cost for unlicensed sectors,' notes Mr Liu. 'In addition, they can stay outside the dorm building all day long, which is far more convenient for students than what we do.'

According to Mao Da, an expert in solid waste management at Beijing Normal University, most illegal recycling workshops do not have pollution treatment facilities and so their operating cost is much lower than those of legal companies. 'Most waste in China is recycled informally by individuals, which threatens the quality of soil, air and water when sorted and dealt with outdoors,' he states. 'The country has to deal with growing environmental damage and health problems when recycling is left to the vagaries of the informal workshops.'

More than 170 000 people in Beijing earn a living by collecting refuse with their own chain of collection, processing and marketing, according to an industry insider.

Scarce profits

Despite the large amounts of paper it recycles, Mr Liu's company is barely making any profit. As one of the first pilot projects in the capital to have been engaged in recycling, the company is capable of sorting some 50 000 tonnes every year. However, supply shortages remain a headache because most of the discarded material ends up in the informal sector.

In the face of this fierce competition from illegal workshops, most of the legitimate recycling businesses could be said to be in public welfare thanks to the high cost of machinery and site maintenance, as well as of logistics, labour and transportation, according to Mr Liu. But now that so many universities are joining the coalition and more students are willing to participate, together with policy support from government, Mr Liu is confident about the project's future. Hopefully, he says, this will become a lucrative business in the near future. □

This article is based on a feature which first appeared in China Daily.



Nick Francis

a people person and recycling devotee

A portrait of Nick Francis, an older man with white hair, wearing a light-colored suit jacket, a white shirt, and a purple and blue striped tie. He is looking directly at the camera with a neutral expression.

Last year, recovered paper specialist Nick Francis completed 50 years in a recycling industry he had entered by chance rather than by design. During those five decades, he served as Chair of the UK's Independent Waste Paper Processors Ltd, on the council of the British Recovered Paper Association and as Non-Executive Director of the WRAP body established by the UK government to help grow new markets for recyclable materials. Also, he developed strong ties with mainland Europe, the USA and even Africa. On December 31, he retired from the commercial side of the business – an opportune moment for him to share some of his views and most treasured recollections with Recycling International.

Is it true that, in your youth, you had not planned to work in the recycling industry?

'I had wanted to become an estate agent but my school exam grades left me disappointed. It was family friend Peter Seymour-Smith who suggested I should perhaps consider a future at the Smith, Stone & Knight paper mill in Birmingham where he was Managing Director. So in September 1962, at the age of 18, I became sales and invoicing clerk at the family-owned mill. Now part of Smurfit Kappa, it pro-

duces linerboard for corrugated packaging and celebrated its 150th anniversary last year.

In 1964, I was promoted to Assistant Mill Manager. It was my job to order the waste paper for the week (nobody called it recovered paper in those days). My role was mostly in production planning and I didn't negotiate prices, but I recall that so-called merchants' own sorted waste was worth 10 pounds 12 shillings and sixpence per ton (approaching US\$ 17 at today's rate of exchange).

In 1968, I joined Birmingham Waste - a big paper processor at the time - as Depot Manager and then Area Commercial Manager. And in 1972, I joined British Paper Co. and started up its recovered paper business.'

And it was when you were at Birmingham Waste that you became involved in a facet of the trade that would have been quite unusual in the late 1960s and early 1970s.

'Yes, importing and exporting recovered paper. We imported from the Netherlands and exported kraft bags to Spain. It was my job to monitor loading by crane on to ships. A few other merchants in the UK were doing the same sort of thing - but not many, because they were not prepared to take the risk of, for example, getting a load rejected overseas.

When in 1977 I started my own business (Clarfield Waste of Bristol) with Brian Perry and Brian Harris, it was an active policy of mine to export. Typically, 25 to 30% of our production would go abroad to, for instance, the Netherlands, France, Germany, Sweden and Italy. I remember, for example, we sold high wet strength sea chart waste to a mill in Aachen. I liked dealing with as many different mills as possible - not only because it was more interesting but also to spread the risk.'

Did this mean a lot of travel?

'Certainly. Quite often, I would take a ferry from the UK to the Continent and visit four or five mills before returning that same day. It was a lot of hard work but also very rewarding. Also, I used to send telexes on spec to potential new customers and it led to, for example, a long-

term trading relationship with a mill in Sweden. I did manage to speak some languages; in fact, I'm sure mills in France only dealt with me so they could hear my bad French and roll around laughing after putting the phone down.'

So making personal connections in business has always been important to you?

'Before 1995, we didn't have a single contract. We just did it on word of mouth and trust. Sometimes it went wrong but mostly it worked brilliantly.

I am from a Quaker upbringing and we were taught to be straightforward with people, but this also makes good commercial sense.

I have met so many lovely people in the paper trade. For example, Peter Seymour-Smith leant me the money without a second thought to help start up Clarfield Waste; I should add that the support of my wife and children was hugely important to me at that time and throughout my career. And I will always be thankful to Brian Harris for being a person of forthright principles and a huge supporter of the industry.

'There is a lot of "quasi" regulation in the UK and elsewhere to drive recycling.'

A lot of business these days is done at arm's length and is contract-based, and that means a lot of the camaraderie has disappeared. But on the plus side, being in a global market is much more "involving". These days, you can't be isolationist.'

Has your obvious interest in people been reflected in other ways?

'A major guiding principle for me has been creation of employment - and productive employment at that. It's the single most important thing you can give someone, and our industry provides good work for many people. In the Avon area (of south-west England), when we started up kerbside collections in the early to mid-1980s with local community-based recycling groups, it gave employment to around 200 people at a time when jobs were not easy to find. It was a major motivation for me.'

And you have also helped to generate employment in Africa, haven't you?

'I was heavily involved in setting up the Fripp Ethique venture in Senegal* which is now operated by Oxfam and is running very well. Reusable textile goods are collected, part-sorted and processed into large bales in the UK and then shipped to a warehouse in the capital, Dakar. They are sorted further and converted into smaller bales ready for sale to local traders through a shop set up by the partners in the venture.

It provides employment for more than 20 people - including a lot of single mothers who represent an underclass in Senegal and who would otherwise struggle to get jobs. It was a good opportunity to do something in a place where we could make a difference, and I still regard it as one of the really good things I've done. I receive regular reports on the project's progress and understand there are plans to roll it out elsewhere in West Africa.

More recently, I have completed a fulfilling piece of work for Oxfam, re-organising their waste and recycling collections for all their UK charity shops, reducing their landfilled volumes by 60% and saving them £500 000 a year.'

Rewinding to 1995, your business Clarfield Waste was acquired by

UK Waste Management Ltd, the British arm of US giant Waste Management International. How did that come about?

'Waste Management International told UK Waste to get into recycling in a big way and we became its first UK acquisition. Having started from scratch with no contracts in 1977, Clarfield was producing 55 000 to 60 000 tonnes of its own material each year and merchanting a similar tonnage when it was bought by UK Waste. Our focus had been mainly on the paper-making grades and on news & pams; we had avoided OCC because it was more of a commodity grade and so tougher to get a margin. I became UK Waste's Director of Recycling and travelled throughout Europe and the USA helping with advice and co-ordination of recycling activities within Europe. I set up contracts with mills and advised on acquisitions. Prices climbed quite high around that time but then, in 1996, >



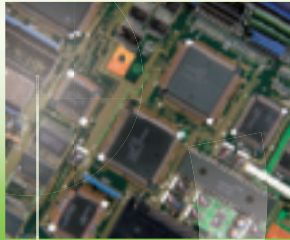
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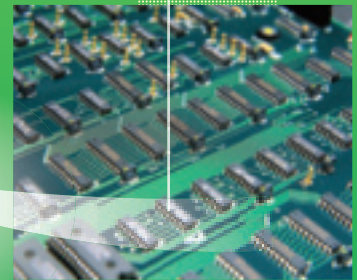
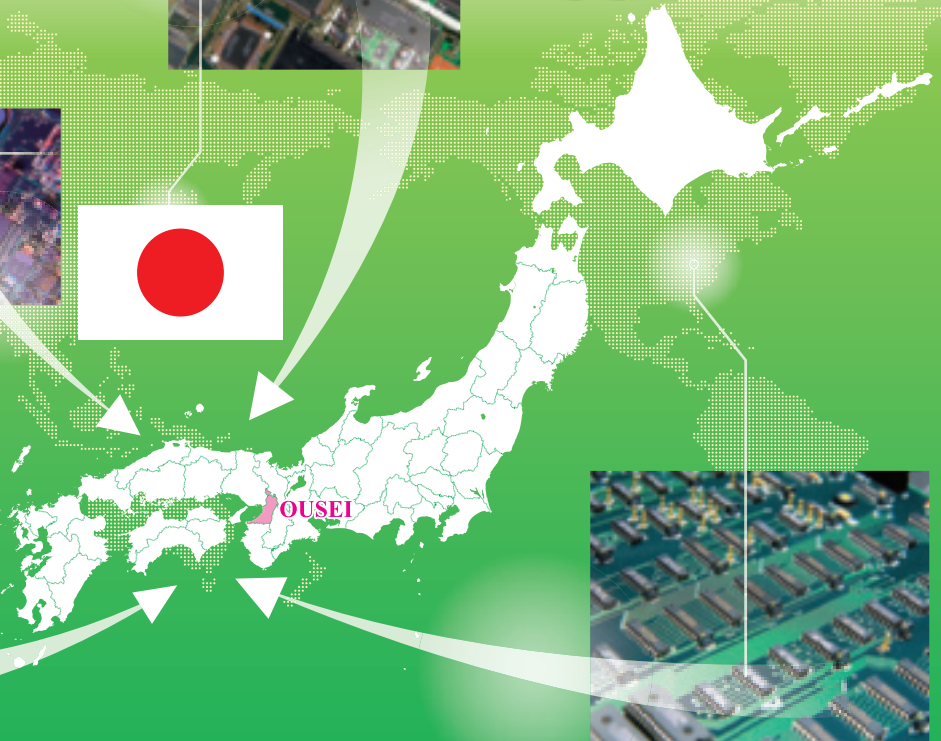
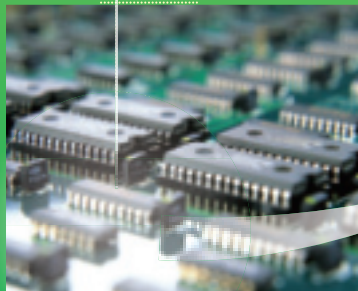
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the trade slumped and a lot of the multi-nationals were no longer making substantial profits. Thinking back to the 1990s, there was still a culture of “Why bother with recycling when there’s still plenty of profit to be had from trucking and landfilling?” These days, waste management companies’ customers demand that they are involved in recycling. With China starting to buy in the early part of the Millennium, some people in waste management got used to seeing prices for recovered paper only going higher. Some continue to expect prices that are unsustainable in the current market environment; they shouldn’t be basing their budgets on constant price growth.’

Regarding the growing involvement of waste management giants in recycling, how significant has this development been?

‘It’s been the biggest change in the recovered paper sector in my time - and not necessarily a change for the better for reprocessors because their suppliers are now generally larger than

they are and so want to call the tune. This often harms the way collections are done; I’m not a fan of co-mingled collection because it doesn’t use skills developed through material specialisation. As a result, we’re not getting the same quality at the end.

There should still be room in the industry for specialists - people who can offer an individual service in a local area or who have knowledge of a specific material or operation, such as security shredding. The problem these days is how they would get started in the business.’

OK, here’s the ‘magic wand’ question: if there were a couple of things you could change relating to recycling, what would they be?

‘There is a lot of “quasi” regulation in the UK and elsewhere to drive recycling. So why not just say: “No more recyclables are to go to landfill”? They have done it in some countries, and it would make all the other regulations redundant. Also, I do wonder about the lack of strategic planning. For example, it is pretty clear that the

Far East market is tightening, so what would we do with all the tonnage in the UK and Europe if this outlet suddenly became a lot smaller? Certainly in the UK, it would lead to a wholesale change. So I would certainly want to get rid of short-termism and look at a proper strategy.’

So what next for Nick Francis?

‘Recently, I retired as a Non-Executive Director of the Waste & Resources Action Programme (WRAP); and then on January 1 this year, I stepped down as Commercial Manager for Environmental Services at May Gurney plc. I am now a Trustee of the national body of the Religious Society of Friends (Quakers), and this role will take up more of my time. But if there is work out there in recycling that people would like me to do and I would like to do, such as helping local authorities understand how markets work and establish contacts, I’d always consider it.’ □

* The Fripp Ethique venture was featured in the March 2008 issue of Recycling International.

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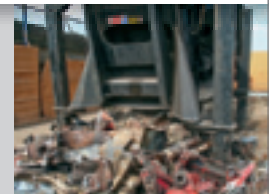
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Mike Biddle wins 'environmental Nobel Prize'

Almost 20 years to the day after the company started life in a garage in California, world-leading plastics recycler MBA Polymers and its president Mike Biddle scooped two prestigious international awards in the space of just seven days towards the end of last year: the Gothenburg Award and GoingGreen's 'Silicon Valley company of the year award'.

On December 4 last year, MBA Polymers' President and founder Dr Mike Biddle was awarded the 2012 Gothenburg Award for Sustainable Development - widely recognised as the Nobel Prize equivalent of the environ-

MBA's success story

Mike Biddle started up MBA Polymers in California in 1992, shortly after completing his chemistry doctorate. He wanted to prove that plastics from complex waste streams could be recycled into high-quality raw material. He developed techniques for separating and refining plastic waste to produce quality-assured raw materials that replace new plastics. Since its start-up, MBA Polymers has been preventing post-consumer plastic waste from disappearing into landfills and transforming it into high-quality source material for consumer electronics, appliances and other plastic products. Today, MBA Polymers is a world leader at producing post-consumer recycled plastics from end-of-life durable goods. The company operates large-scale industrial plants in the USA, China, the UK and Austria with a combined processing capacity of up to 175 000 tonnes per year.

www.mbapolymers.com

mental world. The award, which is worth one million Swedish krona, is administered and funded by a coalition of the City of Gothenburg and 12 companies. The theme for this year's award was 'closing the loop'. Compared to nature's own eco-cycle in which waste products become valuable in new processes, society's current use of resources is unsustainable, organisers explained. For example, it is estimated that less than 10% of plastics in the world are recycled.

Raw materials are converted into products and eventually become waste, leading to resource shortages, energy wastage and other problems. Therefore, entrepreneurship and innovative solutions are required to break this chain and instead create functioning eco-cycles, they contend.

Dr Biddle was awarded the prize for 'combining deep technical expertise and entrepreneurial brilliance with a drive to close the loop', according to the jury's citation. 'His solutions contribute to reducing waste and saving the earth's non-renewable resources. Dr Biddle inspires other entrepreneurs to develop innovative hi-tech solutions in the waste sector.'

GoingGreen – Company of the Year

Several days earlier, in late November, MBA Polymers had been named GoingGreen's 'Company of the Year'. This was



MBA Polymers' President and founder Dr Mike Biddle shows the Gothenburg Award for Sustainable Development.

announced at AlwaysOn's annual two-day GoingGreen event where CEOs from green technology companies meet the 'movers and shakers' from the biggest industries on earth. Green technology innovators are transforming trillion-dollar industries, and the solutions they are delivering not only promise to clean up pollution and restore ecosystems, but to bring abundance and prosperity, the organisers state.

MBA Polymers was selected by the AlwaysOn editorial team and global industry experts based on a set of five criteria: innovation; market potential; commercialisation; stakeholder value; and media buzz.

GoingGreen states: 'Whilst consumers have been actively participating in recycling with waste products such as paper and metals, awareness of plastics recycling has lagged, with far less plastic recycled compared to the amount of metal, for example. Plastic has become an integral part of everyday life and has applications and uses that make it more valuable than steel on a cost-per-weight basis. Raising awareness of this important trend is part of MBA Polymers' mission. The company is a compelling example of how determination and success can build an industrial process that reclaims what's been used and is unwanted and creates something brand new - whilst diminishing the strain on our planet.'

The Big SHFT

MBA Polymers has also received recognition from The Big SHFT as part of its series entitled '10 Innovators Changing Our World', which highlights the efforts of people who are leading the planet towards a more sustainable future - and inspiring everyone they touch along the way.

SHFT hailed Dr Biddle as a 'Plastics Pioneer' in a video which can be viewed at www.shft.com. Additionally, shft.com released a three-minute documentary on MBA Polymers as one of the 10 innovators spearheading important changes around the world. □



A view of the production hall at MBA Polymers in the UK.



Delivery of plastic waste at MBA's plant in Worksop, UK.

Inspiring innovations unveiled at Pollutec

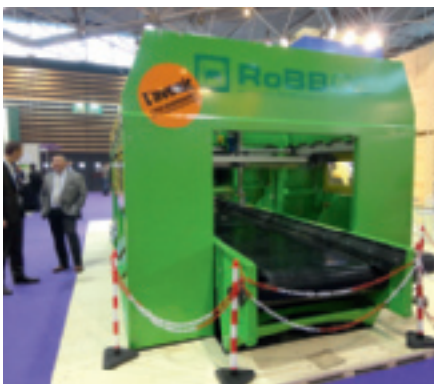
Attracting more than 62 000 visitors and some 2300 exhibitors from 105 countries, the 2012 edition of Pollutec was once again hailed as a great success. Recycling International was among the many to attend the event – held in the French city of Lyon – and below provides a summary of some of the latest innovations that were on show.

Bollegraaf celebrates birth of 'RoBB'

In Lyon, Dutch recycling equipment manufacturer Bollegraaf Recycling Solutions was like a proud parent, issuing invitations to visitors to come and take a look at its newest arrival, namely robot RoBB - a fully-automated quality control system which can be programmed to operate 24/7.

Bollegraaf's latest creation enables waste processors and recyclers to eliminate the need to sort material on the conveyor belt by hand. 'RoBB has been developed especially for quality control at the end of the waste line, where specific plastics or paper remnants, for example, are removed from the waste stream,' the manufacturer explains. In this way, RoBB is said to deliver a competitive edge with regard to purity and separation quality, giving the output a premium value and resulting in 'higher returns per kilo of processed waste for waste processors and recycling companies.'

A further major advantage is said to be savings in wage costs given that economic considerations 'are playing an increasingly important role in the recycling industry all over the world,' argues the Dutch technology specialist.



Following its unveiling at Pollutec, the RoBB system is scheduled for official release during the first few months of 2013. www.bollegraaf.com

FORUS finds low-noise pre-crusher solution



German manufacturer FORUS GmbH went to Pollutec with what it described as the 'quietest, most powerful and intelligent pre-crusher on the market,' according to Managing Director Cathrin Wilhem. The HB 396 L model is equipped with longer rollers, larger blades and wider axle spacing to aid a higher throughput. The FORUS pre-crusher is designed to be a helpful processing tool for all kinds of wood and other recyclables. With an emphasis on efficiency, the machine can achieve hourly capacities of up to 40 tonnes of industrial waste, 90 tonnes of household waste and 35 tonnes of wood.

Incorporating a brand new blade-clearer concept, the HB 396 L yields homogeneous output material. The quality is further enhanced by an advanced in-built user interface which regulates the optimised output control. 'The pre-crusher also offers detailed fault indications with instructions for immediate measures by the operator,' adds the manufacturer.



Designed to be capable of round-the-clock use, the pre-crusher is hailed as 'a reliable powerhouse for large recycling companies.' However, power does not necessarily equal noise: by incorporating the latest generation of diesel motors as well as a COWL sound damper and cutting-edge insulation material, noise output averages only 15 dB. www.forus.de

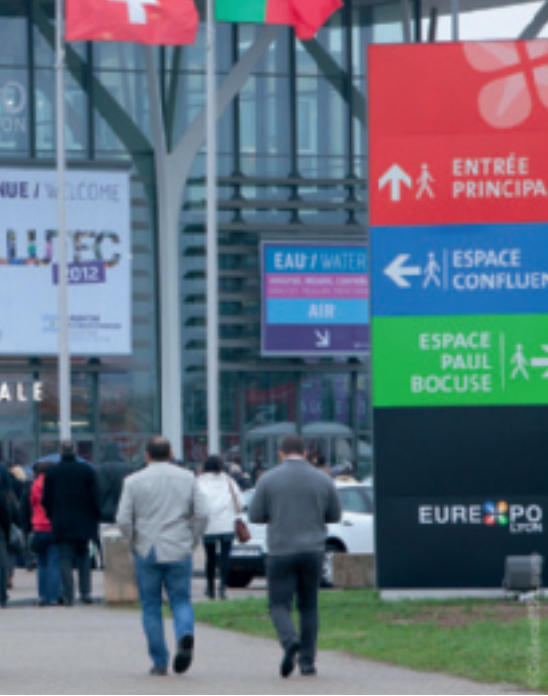
ASM shows off new sorting vision

In its bid to extend the frontiers of optical electronic sorting, Italy-based recycling technology expert Advanced Sorting Machines (ASM) graced this year's Pollutec exhibition in Lyon with its Vision 100 development. The system is suitable for treating a wide array of material - spanning recyclables such as plastics and glass, as well as nuts and fruit.

The new sorting series contains a state-of-the-art Blob Analysis system - a novel solution for acquiring and processing images. The combination of a 2048-pixel CCD camera sensor and integrated generation microprocessors means the Vision 100 is able to execute millions of operations per second, notes ASM. As the camera offers a detailed multi-colour analysis, the sorter can eliminate both light and dark defects simultaneously.

Besides providing highly accurate sorting performance, the machine is also said to score high marks in terms of self-checking, identifying all possible causes of non-opti-





mal sorting such as air and vibrations. The Vision 100 has the ability to store up to 100 programmes and automatically changes over from one product to another. The Italian manufacturer adds: 'The LED lighting system guarantees the possibility to find any kind of defect. It also ensures a steady lighting strength in every season and the stable and constant level adjustment of the sorter.'

According to ASM, the Vision 100's elongated product-feeding chutes are unique in this series. 'Their dimensions allow for maximum production capacity and their technical features allow the sorting of more products on the same machine,' explains the manufacturer.

www.sortingasm.com

ALLU highlights rough terrain crusher options



In recognition of the fact that many industrial tasks require fine fragment sizes as well as high crushing power, Finnish manufacturer ALLU Group used the Pollutec show to

spotlight its ALLU D Series of screener crusher attachments.

'For any site that is located on a narrow road or rough terrain where big stationary machines are unable to go, the ALLU D series is an excellent choice,' remarks the manufacturer. 'It includes a versatile selection of tools that can screen- and crush-process different materials

- such as glass, bricks, demolition waste, etc - from 15 mm to 150 mm fragment sizes.'

Material can be screened with a single start-up and without any back-and-forth rotation. As the attachments are designed with reliability and quality in mind, says the manufacturer, they ensure high production levels even with wet materials, overcome nuts and bolts in the material flow, and come with a built-in power adjustment valve.

'Lubrication grease inside the chain boxes enables a long transmission life-time,' adds ALLU. The latest series enables screening and crushing as well as the aerating, mixing and stabilising of material, thus underlining that it was developed to facilitate operations on demanding job sites, according to the Finnish company.

The ALLU D Series is available with fixed or changeable blades, as well as in basic, strong and heavy-duty versions.

www.allu.net

Holmatro showcases superlight cutter

'Thanks to their low weight and special blade design, the new range of hydraulic mobile cutters is ideal for the car recycling sector,' said Yves Pey, Manager of CEMFHIS, as he simultaneously and swiftly manoeuvred the suspended ICU 10 A 30 model using one hand.

'Although the new cutters are superlight - the lightest version doesn't even weigh 9.5 kg - they possess amazing strength,' said Mr Pey. He attributes this to the unique, U-shaped blades that pull the material towards the strongest point of the cutter. 'The fact that the A 30 is a mobile tool has obvious advantages; operation is very fast and easy. The cutter goes through vehicle components - like doors, catalytic converters and exhaust pipes - without effort.'

The cutters were crafted specially for hydraulic products specialist Holmatro. Apart from their potential for use in automotive applications, the hydraulic cutters can also be employed in cable recycling. As this task generally involves tackling



a complex bundle of wires and strands, Holmatro and CEMFHIS took account of the fact that the individual pieces frequently meet the cutter blades at a different angle. This

causes loss of capacity and, importantly, 'has proven to be detrimental to the life-span of cutting tools'. The France-based equipment specialist incorporated a blade guide to prevent the cutting blades from separating or becoming distorted, Mr Pey explained.

Other materials that can be handled by the cutters include a broad spectrum of demolition waste and foundry components, such as aluminium castings.

It is possible to equip the A 30 with either a standard or a short blade: the former is capable of cutting diameters up to 32 mm while the latter is best suited to circumstances where operational space is limited.

www.holmatro.com

Flexus Balasystem promotes round baling



Heralding it as 'the best solution for storage and transport', the team from Swedish company Flexus Balasystem flew to Lyon in order to promote its equipment designed to produce round bales weighing between 200 kg and 1.5 tonnes. The fully-automated system is based on a baler which compresses and immediately surrounds material in cylindrical, hermetically-sealed wrapping made from air-tight, fully-recyclable polyethylene. The process itself takes roughly 1-5 minutes per bale depending on the material to be processed, which can include both household and industrial waste such as plastics, fuel fractions, car tyres and paper. One bale of non-shredded tyres, for example, consists of some 120 tyres in total, according to the developer. Available in both mobile and stationary formats, the round-bale system can be easily moved between sites, states Flexus.

According to the Swedish manufacturer, this innovative baling system can offer particular advantages for municipal solid waste plants. 'The properties of the input material are completely preserved; there is no loss of energy or mass,' it explains. 'The system also reduces the initial volume by approximately a third.' Besides preventing material degradation, the system also eliminates the risk of self-ignition, it is claimed.

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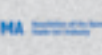
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The Scavenger: getting more out of shredder fractions

Driven by the goal of enabling complete separation of shredder light fraction into streams with their own singular characteristics, work at Belgium-based recycling technology specialist AD REM has culminated in the launch of its latest piece of equipment – the Scavenger. This new development is also designed to process shredder heavy fraction eddy current drops.

The initial objective when shredding vehicles and electronic devices is to obtain clean iron. However, an output of light fractions typically contains a significant amount of 'misplaced items', notes AD REM – a joint venture between non-ferrous and ferrous recycling leader Group Galloo and the Valtech Group, which comprises several engineering and construction players. 'This unwanted content contains

high-value components which should be recovered for environmental and economic reasons,' the company states. The Belgian technology specialist elaborates: 'Our new separation installation was especially designed to divide light fractions into three different types, namely a fines fraction, a fuel fraction and a heavy fraction.' The second of these – refuse-derived fuel – is a flammable light fraction obtained via extensive sieving and wind-sifting. Owing to its high calorific value, it can be used to fuel waste-to-energy plants or cement kilns.

'Crucial' for EU strategy

The Scavenger was initially created with a clear mission in mind; to 'play a crucial part' in meeting the 2015 EU directive regarding end-of-life vehicles, notes AD REM. It cites the system's low cost per tonne and robust technology as strong drivers for the sector as these render the recycling of low-value wastes 'very attractive'. This, in turn, is believed to set a milestone for the automotive industry.



The Scavenger is able to get rid of the 'misplaced items' present in light fractions.

Upon completing the design of a full-on recycling facility for Group Galloo's recycling branch, the incorporated Scavenger system has already scored top marks in the field in Belgium. This is especially true for the shredder light fraction, which is of paramount importance to Galloo's operations. AD REM is confident that the 'new and exciting' separation technology will 'set the standards for the next coming years'. Luc Waiglein, Research & Development Director at Galloo, agrees: 'With this machinery we can reach 95% recycling.'

Purity optimisation

AD REM enjoys a collaboration with Germany-based processing technology expert BHS Sonthöfen, and so the equipment dovetails neatly with the BHS Rotorshredder for further purity optimisation. Trials to date have indicated that the equipment can treat up to 50 tonnes of shredder residue per hour, the two parties have stated.

'We have never believed in granulating all or a large part of the shredder light fraction into small particles, say around -20 mm,' says AD REM, adding that the shredding of a complex mix of materials such as shredder light fraction is a 'very wearing, energy-consuming and cost-intensive activity'. But this is not the most challenging downside, according to the company. 'There is a considerable loss of material that is smashed into small particles which cannot be separated efficiently,' it adds.

Focus on foam rubber

Therefore, rather than shredding all of the components, AD REM's aim is to 'only affect the foam rubber components inside the light fraction'. Such an approach leads to the size-reduction of the foam rubber and ensures nearly all other elements are left unharmed, the direct result of which is that maintenance and energy costs are scaled down extensively when compared to similar recycling solutions available on the market.

Whether built directly in-line with the shredder or installed after the shredder, the Scavenger is said to represent a good fit for any shredder ranging in size from 1000 to 8000 HP. With its focus on output quality, AD REM believes its newest innovation will offer recycling companies the ability to add significant value to their products. 'The fines can be sent to landfill at lower cost, the organic fraction can be used as a fuel and a fraction containing all the misplaced solid, or "heavy", parts is created that contains much recyclable and reusable plastics, metals and wires,' explains the manufacturer. Besides tackling light material, the Scavenger has also been designed to process shredder heavy fraction eddy current drops. To achieve best results, the light and fine components of the residue are extracted; after the dry separation stage, the bulkier material is 'well prepared' and eligible for additional treatment. □





Spotlight on automotive expertise

SEDA celebrates 20 years of ELV technology

This year marks a milestone for Austrian technology expert SEDA, which celebrates the 20th anniversary of its renowned de-pollution system for end-of-life vehicles (ELVs). Recorded in the recycling history books as the first complete solution of its kind back in 1993, the huge interest generated by this invention of SEDA's founder Josef Dagn quickly proved that he had uncovered a whole new niche within the recycling industry.

The mission pursued by Josef Dagn, a former trainee at Mercedes Benz in Germany, was one with both a strong technological and ecological component given that his 'core vision' was to protect the environment from hazardous liquids contained in end-of-life vehicles (ELVs) by introducing clean and sorted fractions of car fluids to the equation. His company went on to establish itself at seven locations around the

globe, to collaborate with 20 partners and to boast an almost 3000-strong clientele made up mainly of dismantlers and recyclers. And so it is clear that the SEDA concept has earned the appreciation of industry at large.



SEDA's Chief Marketing Officer
Andreas Rieser.

Indeed, Josef Dagn's creation represented quite a novelty for the automotive sector as it offered a fully-integrated ELV drainage solution, equipped with a large de-pollution platform as well as a number of much-needed drilling and cutting devices - all of which were specially designed to extract any fluids still left behind in cars destined to be scrapped.

The man behind the success

SEDA's Chief Marketing Officer Andreas Rieser says of the company's leading light: 'With his effort, spirit and innovations, he has realised his dream of cleaner and safer car recycling.' To this day, Mr Dagn remains a true source of inspiration and therefore 'the man behind all the success', Mr Rieser also observes.

Following on the heels of the development of a one-of-a-kind radiator testing system which was also enthusiastically received by the industry, the

ELV drainage solution quickly found its way throughout Europe - and was subsequently thoroughly improved and customised to suit specific demands in terms of capacity and application. 'The work of dismantlers is hard work,' explains Mr Rieser. 'So equipment for this niche branch has to be "heavy duty" and needs to fit special requirements.' Adding that innovation is much needed to drive the sector forward, he adds: 'That's why we build our own prototypes and test them with dismantlers - under real conditions.'

This approach has yielded many different versions of the system. 'One of our technological highlights is the SEDA EasyDrain de-pollution system, which has secured over 300 sales since it was originally introduced,' remarks Mr Rieser. Other incarnations of the system include: the SEDA Rapid - a transparent and flexible station developed with mid-size dismantlers in mind that allows for removal of 98% of all fluids from up to 30 ELVs per day; and the SEDA SingleStation - an all-in-one solution that comprises an elaborate range of accessories 'to enable countless variation possibilities'.

Big effects from subtle changes

'Constant development and thinking outside the box are main points for our team,' says Mr Rieser, adding that the Austrian company has learned 'smaller changes can have a big effect and benefit'. An example of this is the tailored



system made especially for countries in northern Europe. 'In such regions, the de-pollution of fluids is often a problem because of viciously cold temperatures,' he explains. 'Just adding a stronger pump won't solve the problem. And so, working closely together with our Scandinavian partner, we created a heating solution for our pump system in order to improve and safeguard the drainage process.'

Mr Dagn and his son Rainer, who was appointed CEO in 2009, have expanded the company's portfolio with equipment such as the Hydraulic Catalytic Converter Cutter, which was created to ensure safe and efficient removal of valuable metals, as well as the windscreen cutter, cable shredder and T-REC XXL tyre separator. Meanwhile, the most popular SEDA product to date is the TankDrillingMachine. 'With this tool, more than 30 million fuel tanks have already been drained without any accidents,' notes Mr Rieser.

Other innovations include the Automatic Freon Gas and Refrigerator Compressor Oil Removal Unit and the FuelManager, a device which ensures that fuel extracted from ELVs is 'as clean and water-free as possible'. Such advances were supported by SEDA's own research and development centre, aided by close collaboration with car manufacturers and other industrial partners. 'As a result of our co-operation with BMW, for example, we managed to invent the first de-pollution system for motorcycles,' states

Mr Rieser. He goes on to cite other household names - including Mercedes, Porsche, Audi, Renault-Nissan and Ford - as brands which have called on SEDA's expertise.

Company transformation

Given its prominent position in this automotive sector niche, Mr Dagn's company has also been embraced by numerous leading recycling enterprises, ranging from Automobile Recyclers Netherlands (ARN), Kuusakoski and Stena from Scandinavia, to Scholz AG of Germany and Sims of the USA. "We experienced one of our milestones so far in 2003, when SEDA equipped nearly 250 dismantlers from ARN," recounts Mr Rieser. He notes that with this one step, the Netherlands was crowned "the most fully developed ELV-recycling country in Europe."

This point was ultimately reached by transforming SEDA's activities from simply producing and selling separate products to providing and selling complete solutions made up of multiple products. 'We don't stand still,' Mr Rieser asserts. 'Changing and evolving have enabled us to offer our customers a huge variety of different, tailor-made solutions.'

From the company's perspective, there is plenty more still to come in terms of innovation. 'We are keeping an eye on upcoming challenges and are planning to complete the development of an LPG (Liquefied Petroleum Gas) recovery solution and a car dismantling platform over the course of the year,' Mr Rieser reveals. 'Luckily, we have a long implementation time for new technologies because new cars take a long time to return to the recycling line.'



SEDA ensures clean and sorted fractions of car fluids.



Over 30 million fuel tanks have been drained using SEDA equipment.

'In the neighbourhood'

He adds that SEDA, which is headquartered at Kössen in Austria, intends to stay focused on its main product lines. Now that familiar markets - especially Europe - are becoming increasingly saturated, he believes there is value in further modernising the 20-year-old equipment. If realised, this goal will greatly benefit new branches set up in other countries 'in the neighbourhood', such as in Russia and Turkey, where there is a determination to rival the ELV recycling standards set throughout most of Europe. □

For more information, visit: www.seda.at/en



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Water-resistant paper with built-in recyclability

A German team has invented a new type of paper, called wareleen, which boasts full recyclability among its qualities. Having introduced a special water-resistant layer to the paper fibres, Cara-Services UG's CEO Guido Radde states that the concept first occurred to him when he noticed a growing demand for a tougher and waterproof type of cardboard to improve transportation.

Although Cara-Services UG predominantly produces cardboard packaging, the gradual blossoming of advanced paper demand pushed its CEO Guido Radde in the direction of a paper innovation. 'One could say it was a matter of "now or never", so I gathered up a team to support my efforts and got to it,' he says. And the early stages were taken up with 'tinkering and experimenting' more than anything else, he concedes.

Coming up with an environmentally sound and entirely water-resistant substance was no easy feat, according to Mr Radde. Though initially a small-scale laboratory project, this developed into a full-blown professional undertaking as paper-trained chemists joined in the hunt for a solution. 'One such pioneer was Frank Brauckmann, CEO at Papierfabrik Vreden, who enabled us to conduct the necessary testing,' points out

Mr Radde. In turn, Mr Brauckmann declares himself 'quite proud' to have been part of 'making such a revolutionary product', adding that wareleen is certain to add possibilities that will 'prove invaluable to the whole packaging industry'.

40% energy saving

In addition to its waterproof qualities, this new type of paper is also 100% recyclable and energy-efficient. According to the inventors, the new material eliminates the need for additional post-processing treatments such as drying the paper, therefore saving up to an estimated 40% in energy costs.

As Wareleen contains only metallic salts, polymers, tenside and organic acids, it counts as a certified natural material because it is devoid of any chemical additives. Owing to the fact that the aforementioned ingredients

are infused into the paper at an elementary level, even the edges of the treated paper and any possible tears will benefit from the process.

'Feels just like paper'

With the help of like-minded individuals from within industry, Wareleen completed its transition to the manufacturing phase in four years.

With his idea freshly patented, Mr Radde is confident that the material will lend itself to a wide array of applications - for example, from replacing plastic bags to an alternative for foil. And instead of more costly wood-based Europallets, Wareleen could also add to the growing impetus of cardboard pallets as an alternative, he believes.

The impregnated paper can be printed on, 'feels just like a regular sheet of paper' and resists oil, drops of which appear to slide down the material as if it were a mirror.

All-round interest

Industry players from around the globe have already made enquiries about Wareleen, states Mr Radde. But perhaps the most exciting fact is that the packaging industry isn't alone in expressing its 'great interest' in the



Guido Radde, CEO of Cara-Services UG.

material. According to Cara-Services UG's CEO, he is in active negotiations with a number of cement manufacturers who are looking to enhance the properties of their products with the new type of paper. Members of the paint and coating industry have also come forward with a view to applying the material to repair or renovate ecological products. Even the textiles sector could gain substantially through the use of Wareleen, it is claimed.

'It is an excellent impregnation agent for wood as well as textiles, with a potential to serve both industries and consumers,' asserts Mr Radde. 'One could say that any and all sectors that consider water resistance a pre-requisite are potential Wareleen users.'

Mr Radde recently launched a new venture - known as Nepstec - to promote and market the new type of paper. □



For more information:
www.cara-services.com
 and www.nepstec.com

Wareleen grants waterproof qualities to an array of materials, spanning paper, cardboard, textiles, timber and even cement.

Ferrous

Closed: January 24 2013

A new year, but the same old waiting game

A simple comparison of latest values with the headline ferrous scrap prices carried in our previous report of early December reveals a small increase. In reality, however, prices have lost some ground of late following decent gains around the turn of the year. Latest cfr indications for shipments from Europe to Turkey are as follows: US\$ 390-395 per tonne for standard quality HMS I/II 80/20 scrap; US\$ 395-400 per tonne for shredded; and US\$ 370-375 per tonne for the HMS I/II 70/30 mix.



Significant buying activity by Turkish mills pepped up ferrous scrap prices early in the New Year. But having booked perhaps two dozen cargoes, their interest levels subsequently waned, thus leaving suppliers to play the now-familiar game of predicting when consumers would need to return to the international market.

At the time of our previous report in early December last year, US shipments of shredded scrap to Turkey were still clinging on to a value of US\$ 400 per tonne cfr, with European supplies trailing some US\$ 10 behind. However, some lower-priced trades in the early part of December served to reduce overall expectations.

Towards the middle of that month, US exporters were selling cargoes of shredded scrap at around US\$ 390 per tonne and HMS I/II 80/20 at some US\$ 5 less amid suggestions at one point that prices for European sales to Turkey were eclipsing the levels obtained by US suppliers. But by the end of the week immediately prior to the Christmas holiday break, US exports of HMS I/II 80/20 had improved above US\$ 390 per tonne as a number of significant deals were booked.

Flow of bookings

Once the market had shifted back into gear following the end-year holidays in many parts of the world, US shipments of HMS I/II 80/20 moved once again above US\$ 400 per tonne as orders began to arrive from Turkey, with European consignments of the same mix at just below this threshold alongside A3 scrap from the Black Sea. Shredded from the USA was placed at US\$ 410 per tonne cfr Turkey.

Bookings continued to flow from Turkey at prices up to US\$ 407-408 per tonne for US-origin HMS I/II 80/20 until just before the middle of January, at which point the majority of scrap-importing mills took a pronounced backward step from the international market, prompting some small measure of price weakness. At the time of writing, HMS I/II 80/20 and shredded from the USA have retreated to, respectively, US\$ 400 and US\$ 405 per tonne on a cfr basis, with some mills in Turkey claiming to have received offers below US\$ 400 for the former. Meanwhile, HMS I/II 80/20 out of Europe has been attracting US\$ 395 per tonne while A3 scrap is nearer US\$ 391-392.

Pressure on mills

Japan's scrap price setter Tokyo Steel sent out a couple of positive messages during the course of December: it raised its scrap prices and then gave notice that it would look to increase some of its product values early in





2013. And in the New Year, the H-2 scrap price in Japan soared to Yen 33 000 per tonne (US\$ 375) on the back of yen weakness and higher iron ore prices - equivalent to an increase of Yen 10 000 since the lows of October last year. That said, some small price correction has taken place during the second half of January.

In China, 2013 began with leading steel producer Baosteel adding upwards of US\$ 25 per tonne to the prices of some of its products, with elevated iron ore prices mentioned as one of the reasons behind the move. Meanwhile, the price tags on scrap imports into China and other countries in the region headed higher, thus putting more pressure on mills' costs at a time when product sales have been quite slow. China recently booked a bulk cargo of US shredded scrap at US\$ 430 per tonne on a cfr basis, but interest in buying from overseas has subsequently been relatively thin. Having achieved US\$ 425 per tonne cfr

Nhava Sheva in December, prices for shipments of containerised shredded scrap to India suffered a subsequent dip before returning to the previous higher levels at the time of writing, with the latest deal reportedly clinched at US\$ 427.

Sharp decline

Recently-released statistics from the US Commerce Department indicate that the country's ferrous scrap exports amounted to 1.383 million tonnes in November last year - almost 30% lower than the 1.945 million tonnes shipped overseas in the penultimate month of 2011. This sharp overall decline occurred despite an increase of more than 8% in Turkey's purchases of US scrap from 434 741 tonnes to 470 279 tonnes. By contrast, US exports to South Korea tumbled from 242 081 tonnes in November 2011 to 110 799 tonnes in the corresponding month last year. Across the first 11 months of 2012, the USA exported a total of 19.75 million

tonnes of ferrous scrap - 12.7% less than the 22.63 million tonnes shipped in January-November 2011. China was a major factor in this steep decline, cutting its orders to 1.73 million tonnes from 4.02 million tonnes. Data from the Census Bureau suggests the value of US exports dropped almost 18% to around US\$ 8.8 billion.

Competing commodities

In our previous ferrous market report, completed in early December, it was observed that iron ore prices had been unusually static for a number of weeks. Almost immediately, however, the market was galvanised into action and has barely paused for breath since then. The journey began with spot prices for 63.5% Fe Indian fines dropping below the US\$ 120 per tonne threshold on a cfr China basis in response to weakness in steel prices. By mid-December, however, values had burst through the US\$ 130 barrier to post a five-month high of US\$ 137 per tonne. Just as many parts of the world were taking their year-end holidays, iron ore spot prices shot past US\$ 140 per tonne as the steel market showed renewed vigour. And as 2013 dawned, values surged beyond US\$ 150 per tonne to levels last seen well over a year earlier. The reasons given for this meteoric rise were tight supplies and unwillingness among many traders to liquidate stocks in a rising market.

But almost at the moment spot prices touched US\$ 160 per tonne, a significant backward step was taken - and then it was the buyers who were unwilling to commit in the hope of a further sharp fall. But following a period just below US\$ 150 per tonne, spot iron ore values had just returned to this mark at the time of writing on the back of low stocks at Chinese ports and steel futures gains.

Heading higher

Latest statistics show China's iron ore imports jumped to their second-highest monthly level in history last November as steel mills replenished stocks; the

arrival of 65.78 million tonnes came second only to the 68.92 million tonnes received during the course of January 2011. The country's steel mills increased their iron ore bookings in late October in order to replenish stocks after the week-long National Day holidays. China's imports in the first 11 months of 2012 reached 674.55 million tonnes; this compares to 686.94 million tonnes in the corresponding period of 2011.

Iron ore prices will be relatively static in the first six months of 2013 before heading higher in the second half of the year, Australia's Bureau of Resources and Energy Economics (BREE) contended in its 'Resources and Energy Quarterly' for December. Chinese imports are forecast to increase to 769 million tonnes 'as a result of robust steel production, some high-cost domestic iron ore operations closing or scaling-back production in response to lower iron ore prices, and declining average iron content of domestically mined ore'.

Imports into the EU in 2012 and 2013 are forecast to remain relatively unchanged at around 136 million tonnes whereas overseas purchases by Japan and the Republic of Korea are expected to continue to increase in line with forecast growth in steel production across the two years.

Increase expected

There was a 1.3% decline in Brazilian exports of iron ore last year to 326.5 million tonnes, according to its customs data. China commanded around 52% of the total with a fraction under 170 million tonnes as compared to around 165 million tonnes in 2011. EU purchases of Brazilian iron ore slipped from more than 62.6 million tonnes in 2011 to 55.8 million tonnes last year. Meanwhile, leading producer Vale is anticipating an increase in demand over the next few years in response to steel-related investments in developing countries. Following a decline in 2013, the company expects to produce around 326 million tonnes in 2014 and 364

million in the ensuing year. Following a relatively modest increase to 369 million tonnes in 2016, a spurt to 402 million tonnes is envisaged for 2017, according to José Carlos Martins, Vale's Executive Director for Iron Ore and Strategy.

Steel

Asia broke new ground in producing more than a billion tonnes of crude steel in 2012 as world output edged 1.2% higher year on year to yet another all-time peak of 1.548 billion tonnes. 'The growth came mainly from Asia and North America while crude steel production in the EU and South America decreased in 2012,' the World Steel Association (WSA) points out in a review of provisional statistics for the year. However, Turkey should also receive an honourable mention after raising its output by 5.2% to 35.885

million tonnes in 2012 - despite a year-on-year decline of 8.6% in December. The global figure not only includes statistics from the 62 countries reporting to the WSA on a monthly basis but also production estimates for nations that report only annually; the 62 countries accounted for approximately 98% of total world crude steel production in 2011, the organisation points out. Therefore, the WSA has calculated that annual crude steel production in Asia last year was 1.013 billion tonnes, which is equivalent to a year-on-year increase of 2.6% from the 986.5 million tonnes of 2011. The continent's share of world steel production increased from 64.5% in 2011 to 65.4% last year, with China boosting its total by 3.1% to 716.5 million tonnes to claim a 46.3% share of global output. Production in India and

South Korea increased by, in turn, 4.3% and 1.2% but Japanese output slid 0.3% to 107.235 million tonnes.

Less severe

Crude steel production in North America was 2.5% higher last year at 121.9 million tonnes, with US production climbing by the same percentage to 88.6 million tonnes. While gaining ground across 2012 as a whole, it is worth noting that US crude steel output fell 5.5% year on year in December. And even more recent figures from the American Iron & Steel Institute confirm that, by the end of the second full week of January, US production was trailing that recorded in the same period last year by 5.9%.

The EU-27's steel production total for 2012 of 169.4 million tonnes represented a year-on-year decline of 4.7%; for Europe as a whole, however, the drop-off was a less severe 2.7% to 320.6 million tonnes from 329.5 million tonnes in the previous year. South America sustained a crude steel production fall of 3% last year to 46.9 million tonnes, with leading player Brazil recording a year-on-year drop of 1.5% to 34.682 million tonnes. Production in the CIS region edged 1.2% lower to 111.3 million tonnes despite 2.5% growth in Russia to 70.6 million tonnes. The Ukraine suffered a 6.9% reverse in output to 32.911 million tonnes.

Crude steel output in the Middle East climbed 5.3% last year to 24.2 million tonnes whereas African production was just 0.3% higher at 15.7 million tonnes. A 6.2% production increase in December provided little embellishment to the 2012 total for Oceania, which at 5.8 million tonnes was 19.9% shy of the 7.2 million tonnes of the previous year.

Eye-catching

In December, the crude steel capacity utilisation rate across the 62 countries reporting to the WSA was 73.2% for a fall of almost three percentage points from the 76.1% of November 2012. Utilisation for 2012 as a whole was

78.8% versus 80.7% in the previous year, the association adds.

The table accompanying this report reveals the leading 10 crude steel producers of 2012 and also includes their respective outputs for 2007, thus permitting a comparison between last year's performance and that prior to the onset of the global financial and economic crisis in the latter half of 2008. While China catches the eye with a production increase of almost 227 million tonnes in the five years between 2007 and 2012, the same comparison also reveals hikes of around 23 million tonnes for India, 18 million tonnes for South Korea and 10 million tonnes for Turkey.

Dispute impact

In other statistics, it emerges that China's steel exports exceeded 5 million tonnes yet again in November last year but dropped to 4.85 million tonnes in the following month as a result of price increases. However, the country's overseas shipments for the whole of last year were 14% higher than in 2011 at 55.73 million tonnes. Meanwhile, China's boycott of Japanese goods owing to the two countries' territorial dispute will have cost the latter an estimated 550 000 tonnes in lost steel production during the fourth quarter of last year alone, according to Japan's Ministry of Economy, Trade and Industry. The brunt of the impact was felt by Japan's automotive industry, with domestic passenger car production at the eight leading manufacturers falling more than 12% year on year in October. Furthermore, car sales in Japan itself have been falling since September last year following the termination of government buying incentives.

November figures from the Japan Iron and Steel Federation confirm that exports to China fell more than 8% during the penultimate month of last year to a little over 446 000 tonnes - even though total Japanese exports surged 16% year on year and more than 5% from the previous month to 3.45 million tonnes.

World's top 10 crude steel producers (in thousands of tonnes)

	2007	2011	2012	2011/12 % change
China	489.7	694.8	716.5	+3.1
Japan	120.2	107.6	107.2	-0.3
USA	98.1	86.4	88.6	+2.5
India	53.5	73.6	76.7 (e)	+4.3
Russia	72.4	68.9	70.6	+2.5
South Korea	51.5	68.5	69.3	+1.2
Germany	48.6	44.3	42.7	-3.7
Turkey	25.8	34.1	35.9	+5.2
Brazil	33.8	35.2	34.7	-1.5
Ukraine	42.8	35.3	32.9	-6.9

Source: World Steel Association.
(e) = estimated.



Over-capacity to grow

Looking forward rather than back, growth in global steel demand is expected to be slower in the coming decade than during the previous 10 years, the OECD's steel committee has predicted. Even though they are expecting steel demand in China to grow more than 5% in the current year, analysts at Goldman Sachs also believe the country's over-capacity will be exacerbated by an increase in domestic production capability to 980 million tonnes.

In view of capacity expansion plans already on the table, India could well

become the world's second largest crude steel producer by the middle of the decade, usurping the position claimed by Japan in 2012. That is the contention of consultant Frost & Sullivan in a report in which it reckons India's steel production capacity will amount to some 112.5 million tonnes per annum in three years from now. The Frost & Sullivan report also highlights some of the familiar potential obstacles to growth in India's steel industry, including permit delays, inadequate infrastructure and competition from steel producers elsewhere.

Outlook

At the time of writing, exporters are banking on an imminent return to the international marketplace by Turkish buyers as mill inventories are thought to be in need of replenishment. With iron ore prices holding at higher levels and scrap flows in Europe further hampered by widespread snow, there is good reason to rule out a significant decline in ferrous scrap prices in the short term. On the downside, however, mill operators in Turkey, China and elsewhere are continuing to complain of difficult sales conditions for their products. □

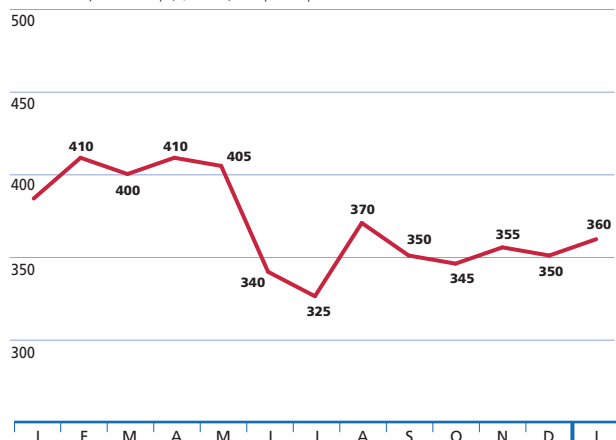


Ferrous Scrap Prices

Reference date: January 24, 2013

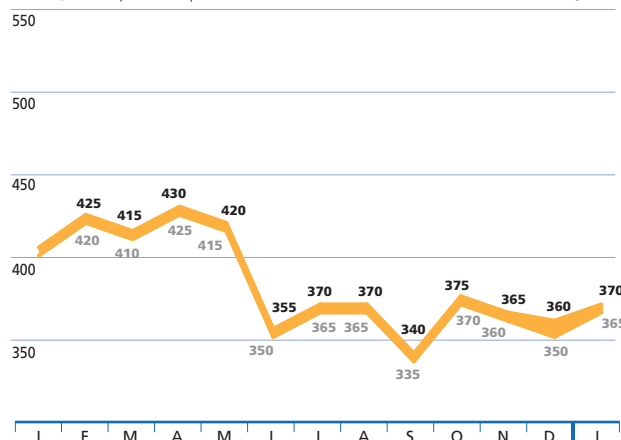
USA Domestic Scrap Prices (US\$/GRT)

HMS 1 heavy steel scrap (1/4 Inch) composite price delivered at mills



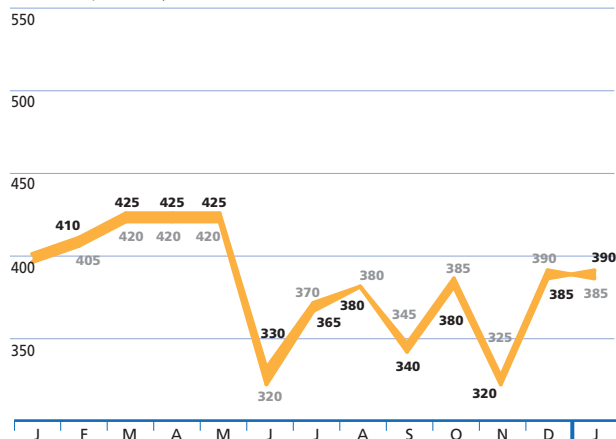
Fob Rotterdam Export Prices (US\$/t)

HMS 80/20 heavy steel scrap



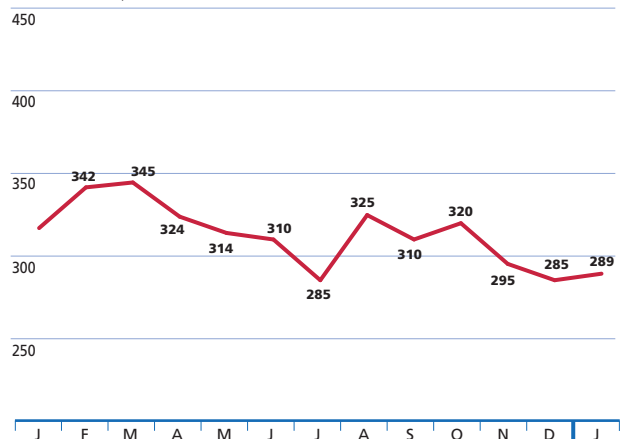
USA Export Prices (US\$/GRT)

HMS 1, heavy steel scrap (1/4 Inch)



Average German Scrap Prices (€/t)

S2/E2, steel scrap (3 mm) Delivered at mills



Nickel & Stainless

Closed: January 23 2013

A restrained start to 2013

There has been some upward progress in stainless steel scrap prices since our previous report towards the end of last year. At the time of writing, the price range for the 304 quality stands at US\$ 1730-1780 per tonne, with the 316 grade advancing to US\$ 2480-2530. Values for 409 and 430 chrome scrap have increased to, respectively, US\$ 440-480 and US\$ 520-560 per tonne.



Since our previous report which was concluded in late November, the 304 price has improved from US\$ 1620-1670 to US\$ 1730-1780 per tonne, while the 316 grade has moved up from US\$ 2330-2380 to US\$ 2480-2530 over the same period. The higher benchmark price for ferro-chrome and firmer conditions for steel scrap have driven up chrome scrap values from US\$ 380-420 to US\$ 440-480 per tonne for 409, and from US\$ 490-530 to US\$ 520-560 for the 430 grade. Significantly, the Euro/US dollar

exchange rate stood at 1.335 at the time of writing compared to 1.295 in late November.

In mid-January, nickel prices were trading in a narrow range of US\$ 17 200-17 700 per tonne, consolidating after their recent run-up amid brighter prospects for the global economy, with the weaker dollar and continued appetite for riskier assets serving to underpin the market. Although the market looks to be well supported on the downside, the scope for rallies appears limited given subdued physical demand reflected in

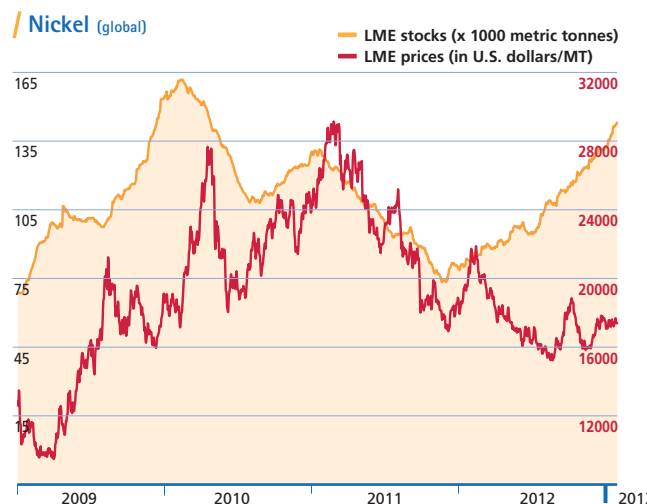
the weak physical premiums. Experts are not sure whether the nickel market can maintain this level given still-poor stainless steel order intakes. The forecasts fluctuate between US\$ 16 000 per tonne on the low side and US\$ 20 000 at the high end.

The International Nickel Study Group has determined a surplus of 67 500 tonnes in the global nickel market for the first 11 months of 2012, but such an excess does not automatically translate into lower prices. Nickel stocks in LME warehouses have reached almost 150 000

tonnes, which is also a sign of continuing weakness in stainless steel production.

Very poor offers

Over the course of recent weeks, major EU stainless steel scrap processors have reported increasing pressure on the nickel valuation in stainless scrap. The intrinsic nickel value had already deteriorated by more than 10% in October last year; prices have continued to decline since then and the nickel valuation has been typically 15% below the LME quotation.



Closed: January 23 2013

Ni price recovery has to wait. Current prices reflect the market situation. The stainless steel production is (outside China) below last years levels all around the World. But (fortunately) on the supply side many expansion projects face further delays. The usual Q1 price recovery is not in sight yet, but could start as soon as in Q2 based on stronger data from China.

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Minor metals

Falling production in China and resulting supply tightness has helped the ferro-vanadium price to jump to US\$ 31.40-32.40 per kg V - and it will continue on this upward trajectory at least until the end of the quarter, according to market participants.

With weak demand, prices for all tungsten products have stagnated. There are reports of some traders actively pushing prices down, but others are positive about the market. The price level has remained unchanged at US\$ 43-44 per kg W for some months.

Ferro-titanium seems to have reached a low at US\$ 7.50-7.60 per kg Ti (max. 4.5% Al) and has been showing some stability.

Good news from China has firmed the position of molybdenum at US\$ 25 500-26 500 per tonne as a consequence of good demand from the stainless sector. Global cobalt production fell almost 5% in 2012, the largest decline in recent years. The fundamentals have firmed over the past year and the LME quotation remains stable at US\$ 25 500-26 000 per tonne.

Meanwhile, the major stainless mills are indicating that the discount for nickel in scrap might actually increase to 20%. However, in the light of a relatively steady stainless scrap requirement and lower scrap availability, it is unlikely that these reduced price levels will materialise in the near future. Sooner or later, lower scrap prices result in reduced availability. The first signs of such a development can be seen in the excessively high scrap prices as a result of very poor offers which cannot be transferred to the actual sales conditions.

Chrome

Tisco of China has been seeking spot ferro-chrome as a result of greater-than-expected stainless steel demand. This additional requirement has amounted to 50 000-60 000 tonnes of spot material. Meanwhile, the European benchmark price has been fixed at US\$ 1.125 per lb.

South Africa's Anglo American Platinum has come under fire over its plans to cut 14 000 jobs. Such a measure would hit chrome ore production as this is a by-product of platinum extraction. The closure of four shafts has been heavily criticised by unions, with the

government threatening the company with the withdrawal of its mining licence. All these developments have been helping to create restlessness in the chrome market.

Europe

LME nickel has risen in line with the upward trend affecting base metals, although market experts point out there is currently no reason for higher prices as the fundamentals are quite weak. In Germany, nickel cathodes were recently yielding US\$ 17 480 per tonne. In contrast to aluminium and copper scrap, alloyed scraps started the year on a rather weak note. Obviously, the latest price increases are causing buyers to be very cautious. Meanwhile, V2A (304) scrap has been commanding some US\$ 1700 per tonne and V4A (316) scrap has been trading around US\$ 2425.

China and elsewhere in Asia

The LME nickel price has been climbing since December but values in China have grown at a slower pace, edging from Yuan 122 000 per tonne (US\$ 19 520) in early December to Yuan 124 000 (US\$ 19 840) by mid-

January. With the approach of the Chinese New Year holidays, downstream demand from stainless steel consumers has slowed somewhat. The nickel price is expected to remain largely flat over the short term.

In November 2012, Chinese imports of refined nickel and alloys fell 22% year on year to 14 426 tonnes, while the January-November running total was 28% lower than in 2011 at 142 931 tonnes. In contrast, China's exports of the refined metal and its alloys surged 107% in November to 6113 tonnes, while total exports in the first 11 months of 2012 fell 9% to 30 810 tonnes.

In totalling 23 017 tonnes, domestic production of refined nickel and its alloys showed a decline of 14% in November 2012 when compared with the same month of the previous year but an increase of 3% from the previous month, according to figures from China's National Bureau of Statistics. Production across the first 11 months of last year was 10% lower at 243 004 tonnes.

North America

US stainless steel mills increased commodity-grade transaction prices for shipments from the start of the year. The nation's stainless steel distributors

reckon demand has been generally slow to ignite and sales volumes have been largely below the norm in the early weeks of 2013. However, US stainless scrap has enjoyed improved demand and prices began the year by creeping higher.

In a major development for the North American market, Outokumpu Stainless USA - the new name to emerge from the Outokumpu/Inoxum deal - started up the melt shop at Calvert, Alabama, towards the very end of last year. Full production is targeted for 2014. □



Non-Ferrous

Closed: January 22 2013

Early-2013 gains for LME

The metals markets have made a decent start to 2013, with both prices and demand heading higher as processors looked to restock in many parts of the world following holiday breaks. In the EU, however, many metals traders are reportedly struggling to survive in those countries most affected by the Euro and wider economic crisis, such as Spain. As per January 22, LME cash prices were at the following per-tonne levels (the corresponding figures from Recycling International's previous non-ferrous metals report of early December are given in brackets): aluminium US\$ 2000.50 (US\$ 2002.50); copper US\$ 8020 (US\$ 7795.50); lead US\$ 2295.50 (US\$ 2198); zinc US\$ 2018 (US\$ 1971); and tin US\$ 25 020 (US\$ 21 130).



Aluminium

In 2012, consumption of aluminium is likely to have increased by 5% year on year to 44.4 million tonnes on the back of 'robust' growth in China (+11%), the USA (+13%) and India (+7%), according to the latest Resources and Energy Quarterly from Australia's Bureau of Resources and Energy Economics (BREE). Conversely, usage in Europe is believed to have dropped around 6% last year.

In 2013, growth in the construction and transportation manufacturing sectors is expected to support increased con-

sumption of aluminium, says BREE. Therefore, world aluminium consumption is forecast to increase by 6% to 47.3 million tonnes this year, with China, India and the USA racking up gains of, respectively, 12%, 7% and 3%. Production growth will be limited by curtailments announced by producers in OECD countries in response to 'high stock levels developing in 2012, low prices and rising input cost pressures, particularly higher energy costs'. World output is forecast to rise 0.8% in 2013 to 45.7 million tonnes.

According to the Aluminum Association, North America's light metal demand climbed 5% in the first 10 months of last year to 19.2 million pounds. The World Bank's Washington DC-based Development Prospects Group is forecasting an average aluminium price of US\$ 2350 a tonne in 2013, rising to US\$ 2500 next year. Turning to secondary raw materials, US aluminium scrap exports in November hit a monthly low for 2012 of 105 488 tonnes, carrying a value of US\$ 264 million. In Germany, meanwhile, aluminium scrap prices followed the lead of primary metals in heading higher:

recently, aluminium wire scrap (Achse) was being quoted at around US\$ 2031 per tonne and aluminium turnings (Autor) at some US\$ 1431. In the UK, prices of commercial pure cuttings have been at US\$ 1560-1624 per tonne, mixed alloy/old rolled cuttings at US\$ 1218-1300, and commercial turnings at US\$ 1055-1136.

Statistics from China's Customs Office reveal that imports of primary aluminium fell 42% year on year in November but were 189% higher across the first 11 months of 2012 at 504 102 tonnes. Over the same period, exports jumped 55% to 118 958 tonnes. China's primary aluminium production advanced 12% to 17.963 million tonnes during the first 11 months of 2012. By mid-January, stocks on the Shanghai Futures Exchange were at a two-year high of around 460 000 tonnes - a reflection of growing output at a time of lifeless downstream demand.

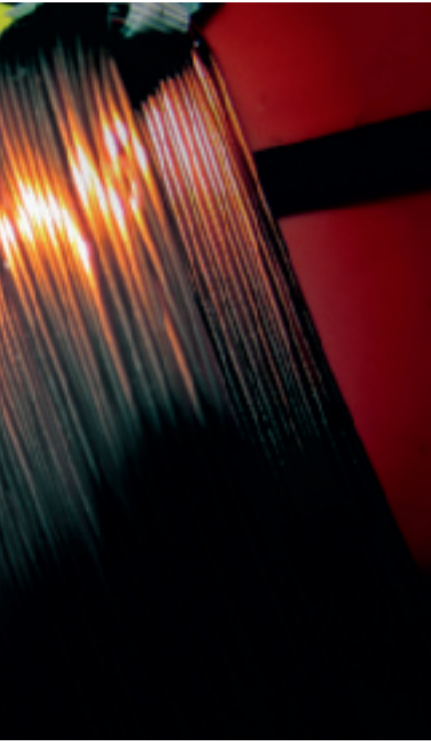
In early December, primary aluminium prices in China were at Yuan 15 150 per tonne (US\$ 2424) per tonne but had fallen to Yuan 14 980 (US\$ 2396) by mid-January.

Copper

In early January, copper demand in Europe was considerably better than at the end of 2012, although many in the marketplace still have doubts about how positive this year will prove to be. Some key indicators for copper are quite positive: supply could be lower than in recent years and exports from Europe to Asia are set to grow. However, events will largely depend on how Europe's economic situation develops. Copper scrap prices in Germany have strengthened of late, with bright wire scrap (Kabul) fetching around US\$ 7760 per tonne.

With less than 98 000 tonnes shipped overseas in November, US copper scrap exports were almost 4% lower in the first 11 months of last year at around 1.1 million tonnes, while values dropped some 12% to US\$ 4.05 billion. Meanwhile, customs statistics reveal that Chinese imports of copper scrap jumped to 470 300 tonnes in November last year - their highest monthly level since September 2008. Meanwhile, China's refined copper imports climbed around 20% last year to some 3.4 million tonnes, according to customs data.





Despite China's higher exports and abundant raw materials giving rise to record copper production, prices improved 3% in 2012 after plummeting 21% in the previous year. The copper price on the Shanghai spot market fluctuated greatly between early December and mid-January, starting the period at Yuan 56 950 per tonne (US\$ 9112) and ending it at Yuan 58 400 (US\$ 9344).

In November, China's refined copper production amounted to 531 000 tonnes, equivalent to a leap of 18% from the same month in the previous year and of 2.1% from October 2012. The increase was driven in part by the Chinese government's decision to buy copper for strategic purposes. Total production in the first 11 months of last year was 8% higher than in 2011 at 5.43 million tonnes.

The Australian Bureau of Resources and Energy Economics (BREE) anticipates global consumption of copper will follow up a 5% jump in 2012 with a further 2% increase this year to 20.9 million tonnes. 'In China,' it points out, 'growth in demand for refined copper is expected to moderate due to reduced

export demand for copper-intensive products from Europe, its major export market, and a run-down of copper stocks which have accumulated in 2012.' The country's consumption of refined copper is still forecast to increase by 5% to around 9 million tonnes in 2013.

According to International Copper Study Group (ICSG) data, the refined copper market recorded a production deficit of 55 000 tonnes in September to give a nine-month shortfall for 2012 of 594 000 tonnes compared to 74 000 tonnes in January-September 2011. World apparent usage climbed 5.2% from 14.637 million tonnes to 15.402 million tonnes, with growth of 19% in China's apparent usage more than offsetting an aggregated decline of 3.7% in Japan, the EU and the USA. On a regional basis, usage grew by 0.9% in Asia (excluding China) and remained practically unchanged in the Americas, but declined by 9% in Europe, 5% in Oceania and 13% in Africa.

Compared with the same period in 2011, world refined copper production increased 1.7% in January-September 2012 - from 14.563 million tonnes to 14.808 million tonnes, according to the ICSG. 'Primary production was up by 1.6% due to the increase in electrowinning production, and secondary production from scrap increased by 2%,' it notes. The main contributors to the overall growth were China (+9%), Japan (+16%) and the Democratic Republic of the Congo (+31%), with production declining by 5.5% in Chile, by 4% in the USA 'owing to a series of smelter maintenance shutdowns', and by 75% in the Philippines as a result of a fire at the sole smelter. The average world refinery capacity utilisation rate for the first nine months of 2012 was 77.6% compared with 79.4% in the same period of 2011.

LME copper prices will average around US\$ 8300 per tonne in 2013, Sueden Financial's Director Jeremy Goldwyn is reported to have suggested during Metal Bulletin's 8th Asia Copper Conference in Shanghai.

Lead

The world's refined lead market built up a surplus of around 60 000 tonnes in the first 11 months of last year - significantly lower than the 157 000 tonnes recorded for the same period in 2011. According to data from the International Lead & Zinc Study Group (ILZSG), higher output of refined lead in China, India, the Republic of Korea, the UK and the USA was partially offset by reductions in Australia, Kazakhstan, Malaysia, Morocco and Spain, resulting in an overall global increase of 2.2% to 9.872 million tonnes.

Meanwhile, world refined lead usage climbed 3.5% in January-November 2012 to 9.812 million tonnes, mainly as a result of year-on-year increases in apparent demand of 5.7% in China and 14.1% in India. Usage also improved in the USA (+1.5%) whereas demand in Europe fell 3.1%, the ILZSG notes. In Europe, trade in lead was lacklustre at the end of 2012 once many processors had closed for the holidays. At present, demand is improving only slowly because LME three-month prices have risen considerably. Many processors distrust these elevated price levels and are obviously delaying any moves to build up their stocks in the hope that prices will fall in the near future. Lead prices were volatile in 2012 and processors ordered only when the LME started to fall.

In Germany, spot prices for new soft lead stood recently at around US\$ 2570 per tonne while soft lead scrap (Paket) was yielding some US\$ 1960; according to reports, lead scrap demand has been rather slow in general. Meanwhile, latest figures show that US lead scrap export volumes fell 19% in the first 11 months of last year.

In November 2012, China's imports of primary lead tumbled 61% when compared to the same month in 2011 to just 210 tonnes. Total imports for the first 11 months of last year were 5.4% higher at 6465 tonnes while the country's exports of refined lead slumped 71% over the same period to 1759 tonnes. Between December 2012 and mid-January this year, the lead price on the Shanghai spot market fluctuated between Yuan 14 700 per tonne (US\$ 2352) and Yuan 14 800 (US\$ 2368). Since lead-acid battery producers were unable to operate at full capacity and real demand was exhibiting no signs of recovery, most lead smelters chose to reduce their stocks and showed little faith in the forward market.

Zinc

Worldwide, supply of refined zinc exceeded demand by 267 000 tonnes in the first 11 months of 2012, the International Lead & Zinc Study Group has reported, but the differential was still



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25–26 February 2013
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- The way to the Recycling Society
- Raw material shortage – fiction or realistic scenario?
- The contribution of the metal trade to the supply of the aluminium industry
- Better market performance by environmentally friendly production and products?
- Innovations on recycling technologies
- New sources of scrap and their potential
- The challenge of the recycled content approach
- Improvements in the recyclability and profitability of wrought Al alloys

Simultaneous interpretation services from and into the languages English and German.

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smaller than the 337 000 tonnes of January-November 2011. In the more recent period, European demand slumped 7.8% while China's apparent usage dropped 3.2% to contribute towards a 3% decline in world refined zinc consumption to 11.293 million tonnes. However, global output fell by an even steeper 3.4% to 11.56 million tonnes as a result of reductions in Brazil, Canada, China, India and South Africa. World zinc consumption is likely to have edged less than 1% lower in 2012 but will return to growth in 2013, Australia's Bureau of Resources and Energy Economics has predicted. An

increase in demand of around 4% to 13.2 million tonnes is envisaged, with China 'expected to generate the majority of this growth' through infrastructure projects and higher demand for consumer goods.

Refined zinc production, meanwhile, will climb around 5% this year to 13.5 million tonnes, the organisation contends. Although the European zinc market has been rather lacklustre in January, experts are predicting solid demand in 2013 on the back of sound fundamentals. Of late, old zinc scrap (Zebra) has been fetching around US\$ 1440 per tonne in Germany. Unlike several other forms of non-ferrous

scrap, meanwhile, America's overseas shipments of zinc increased some 3% in January-November last year.

China's refined zinc imports soared 50% year on year to 38 600 tonnes in November, pushing up the running total to 152 800 tonnes for an increase of 52% over the first 11 months of 2011. Also in November, China's refined zinc production totalled 453 000 tonnes - equivalent to a fall of 3% compared to the same month in the previous year but to an increase of 7% from the previous month. In last year's January-November period, total imports slid 26% to 260 900 tonnes.

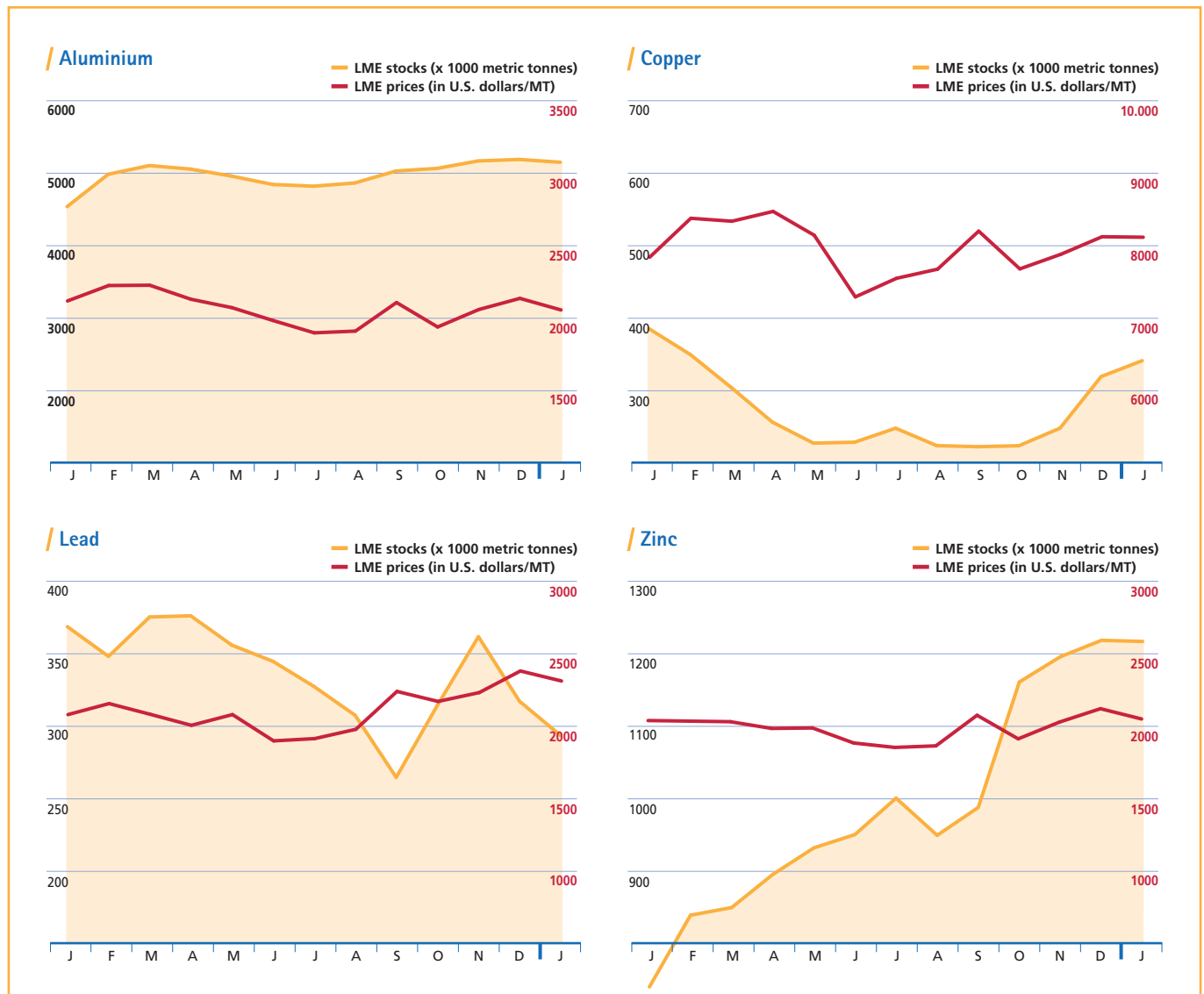
During the final month of last year, the zinc price in China was relatively stable at around Yuan 15 000 per tonne (US\$ 2400). As demand from downstream industry remained flat and the global economy continued to be weak, trading activity was muted and stocks continued to grow. □

Contributing to the Non-Ferrous Metals Market Analysis:

- Ralf Schmitz, German non-ferrous trade association VDM, Europe
- Lili Shi, journalist and consultant, China

Non-Ferrous Scrap Prices

Reference date: January 22, 2013



Paper

Closed: January 22 2013

Trade monitors US port strike threat

Not least because of strong demand from China ahead of the country's New Year celebrations in February, OCC export prices have traced an upward path in the early weeks of 2013. However, all eyes are focused on the potential for disruption to recovered fibre shipments from the USA given that, at the time of writing, dock workers on the East Coast and Gulf of Mexico are locked in contract negotiations with the various port authorities.



Europe Slow flow

Difficult winter weather conditions across many parts of Europe and persistently slow economic activity have conspired to limit the flow of the lower grades of recovered fibre into merchant processors' facilities. There is not much OCC available and stocks are not very high. Demand in Europe was slow in the final month of 2012 owing to the year-end

holidays, and the continent's mills basically kept their prices stable in December and January. There was an improvement in the OCC price for the Far East at the beginning of January, but a fall then ensued as a result of the US dollar exchange rate. Mixed papers have followed the same pattern. In addition to dollar movements, demand has also been influenced by the approach of Chinese New Year.

Furthermore, some Chinese mills experienced import licence problems at the end of 2012 - but this situation has apparently been resolved. For the deinking grades too, incoming volumes in Europe have been slow of late; demand is healthy at home and some interest has been shown in Asia - albeit at very low prices. Meanwhile, demand within Europe is described as reasonable to good for

most of the middle grades, with India and other destinations in Asia also in the market at slightly lower prices. Prices in Europe have tended to stabilise or rise slightly. In common with most forms of recovered fibre, incoming volumes of the middle grades have been rather laboured owing to generally muted economic activity. As for the higher grades, there is not much material available, demand is good and prices are quite stable - but with a tendency to go a little higher. For exports to China and elsewhere in the Far East, shipping rates have held steady and the pressure to obtain space on vessels has eased slightly. Also for India, freight rates have been stable and container availability is becoming less tense.

North America Gradual increase

At the very beginning of 2013, recovered fibre prices seemed to be holding steady; however, OCC levels have gradually increased with each new week. The strongest activity has come

China hinting at recovered paper standards

National standards for recovered paper could well be on the horizon in China, recycling experts announced at the China International Recycled Fiber Conference held in Beijing last month.

'Chinese recovered paper consumption was only 7.6 million tonnes in 1994 before exploding to 71 million tonnes in 2011,' notes market specialist RISI, which sponsored the event together with the Chinese Resources Recycling Association. Over the last ten years, China has registered a 260% increase in recovered paper demand.

'But China's recovered paper industry is still in an early stage,' underlined the association's President, Jiang Xingsan. According to China Daily, Mr Xingsan told the 400 delegates in his keynote speech that low-level competition and the lack of market regulation and industry standards 'are problems that need to be dealt with in the future'.





from mills in China as they have continued with their buying prior to the Chinese New Year celebrations in February. Domestically, OCC prices have been maintaining a steady level. There has also been improved demand for DLK given reports of slow generation from corrugated box plant producers - a normal situation after the holiday season. Woodfree deink grades have continued to hold firm both in the domestic and export markets, and no drastic changes are reported for the pulp substitute grades.

Other than the possibility of further OCC price increases for exports to China, the overall market appears likely to remain steady through February at least. However, export shipments could be heavily impacted if dock workers go through with a strike at the major East Coast and Gulf of Mexico ports. Their contract ended at the close of 2012 but the dock workers' union and the various port authorities have subscribed to a 30-day cooling-off period while they continue to work towards an agreement. This period is

scheduled to end at midnight on January 28 but could be extended to enable negotiations to continue.

The ports involved reportedly handle more than 40% of the container cargo entering and leaving the USA.

Asia

No guarantees

January has brought a big increase in the OCC price. Whereas values kept on dropping in December, they have now recovered to their end-November levels as most Chinese mills have finally received their new import licences and have thus been able to buy on the international market. Prices appear to have become more stable of late, with demand slowing again ahead of the Chinese New Year celebrations.

The big question for February is what will happen when the Chinese come back from their holidays. In previous years, their return has had a substantial impact on demand and prices, but a repeat cannot necessarily be guaranteed in the current economic climate.

To a large extent, price increases have been limited to OCC; all the other lower and middle grades of recovered fibre are showing no signs of an improvement in the near term.

Demand from India appears to be picking up slowly. Most mills have been trying to buy at previous levels but, as a result of the weaker US dollar, prices need to be improved within the coming weeks or packers are likely to sell on the local market.

Ocean freight rates to the Far East are under pressure and are likely to fall by US\$ 50-75 per container, it is reported. Meanwhile, latest figures reveal that Chinese imports of recovered fibre surged from 2.076 million tons in October last year to 2.57 million tons the following month. This means the country bought in approaching 27.4 million tons in the first 11 months of last year for an increase of 11.5% over the corresponding period of 2011. Its imports of OCC and mixed papers were higher year on year by, respectively, 12.1% and 16.1%. □

Catalyst sells Snowflake paper mill assets

Canada's Catalyst Paper has accepted a binding bid from Hackman Capital and its affiliates to purchase the assets of its closed recycled content newsprint facility in Snowflake, Arizona. Expectations are that the sale will be completed in the first quarter of this year.

The transaction, which is subject to US court approval, also includes Catalyst's shares in Apache Railway and was struck for a sum of more than US\$ 13.4 million plus other 'non-monetary considerations'. The buyer intends to continue to operate the Apache Railway as a going concern, and the business move is supported by the town of Snowflake and various local interests, says Catalyst.

'While paper manufacturing is part of Snowflake's past, this transaction puts the asset on a path to a new future that can continue to bring value to the region,' observes Catalyst's President and Chief Executive Officer Kevin J. Clarke. 'We are pleased that this transaction has progressed efficiently and that the community's interests have been considered through the process and in the successful bid.'

Catalyst Paper manufactures diverse specialty mechanical printing papers, newsprint and pulp. Its three mills in British Columbia boast a combined annual production capacity of roughly 1.5 million tonnes.



Contributing to the Recovered Paper Market Analysis:

- Melvin de Groot (Van Gelder Recycling, the Netherlands)
- Mariëlle Gommans (Bel Fibres, Belgium)
- Steve Vento (Vipa Lausanne SA, Switzerland)

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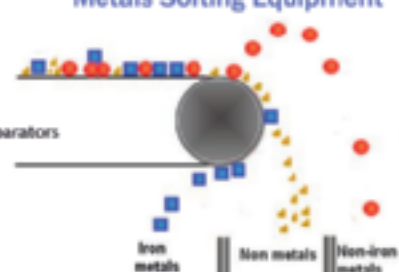
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RESEARCH Precious/rare earth metals recovery
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The 'serendipitous discovery' of Magpie Polymers is hoped to change the future of metals recovery.

From water to gold

Spurred on by a world market growing ever more hungry for rare earth and precious metals, as well as by the emerging material shortage of recent years, France-based Magpie Polymers has developed a recycling solution that borders on alchemy – turning waste water into gold.

The wet chemistry technology was first developed by Dutch synthetic chemist Steve van Zutphen at the renowned l'École Polytechnique in 2007 and centres around a patented process that is capable of synthesising polymers in just one step. The 'serendipitous discovery' resulted in tiny pellets of plastic resin that carry different functionalities - neutral phosphine, phosphine oxide and phosphine sulfide - through which waste water can then be pumped.

Custom-fit recovery

A few years later Steve van Zutphen joined forces with his former colleague Etienne Almorice to found Magpie Polymers in 2011. Conceived as a custom-fit for the recovery of rare earths as well as precious metals, the solution from Magpie Polymers, founded by French scientist Etienne Almorice, can be applied to anything from platinum, palladium and rhodium to gold, uranium and cadmium. The metals gradually stick to the pellets, effectively separating them from the waste water. According to Dr Van Zutphen, who has been appointed the position of CEO at Magpie Polymers, the polymers can be

modified if needed so as to adapt to the unique characteristics of each specific metal. Such a tailored approach ensures that nearly 100% of the metal can be recovered, coming with a guarantee of high purity.

A matter of microgrammes

After being subjected to a rudimentary acid wash, the metals are finally released from the resins. According to Dr Van Zutphen, no more than a microgramme per litre is left behind – comparable to a single sugar cube in an Olympic size swimming pool.

Operating from a facility just outside of Paris, Magpie Polymers has the capacity to produce over 1 tonne of polymer per month. Currently this material is able to treat up to 10 cubic metres of waste water using just one litre of specialised resin. This leads to the recovery of 50 to 100 grammes of precious metal which is worth typically between Euro 3000 and 5000 (US\$ 3900-6500). With these figures in mind, the team behind the venture asserts that water incorporating a metallic content 'presents a problem yet also an opportunity'.

Dr Van Zutphen claims this new approach could become a valuable weapon in the battle for improved resource efficiency. At the same time, the technology can also be used to remove unwanted, harmful metals such as mercury. The chemist comments: 'There is an incredible amount of water available to us all over the world. Sadly, a substantial part of this is too tainted to be of any use. Magpie Polymers aims to clean up the water while simultaneously harvesting much-needed raw materials.'

The scarcity issue could be easily resolved if the precious and rare earth metals stored in a wide array of modern-day electronic devices could be just as easily extracted, continues Dr Van Zutphen. However, mobile phones and lap-tops contain only slight amounts of these much sought-after metals, rendering them virtually impossible to recover in a viable way.

'Very last traces'

He adds that a great number of recycling technologies aimed at extracting metals from water have been devised since the beginning of the 19th cen-

tury, yet 'their performance limit' is becoming a problem for today's industry. The Dutch chemist explains: 'These earlier technologies can remove the bulk of dissolved metals but they aren't able to remove the very last traces with the required level of selectivity.'

The two entrepreneurs behind Magpie Polymers do not expect that the concept's comeback will suffer the same fate. Instead they foresee that their innovation will play an important role on an industrial scale, with large international mining companies and refining companies specialising in the recovery of precious metals at the core of its clientele.

In 2011, Magpie Polymers won the Young Entrepreneur Award conferred by the Dutch Financial Daily Newspaper. Supported by France's Fonds Lorraine des Matériaux among others, the venture has garnered more than Euro 500 000 worth of investments and subsidies. □

For more information:

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Every month, Recycling International highlights a promising recycling-related research project with a global, technical, economic or social impact. If you know of an interesting project which meets these criteria, contact our editorial team at info@recyclinginternational.com

Closing dates

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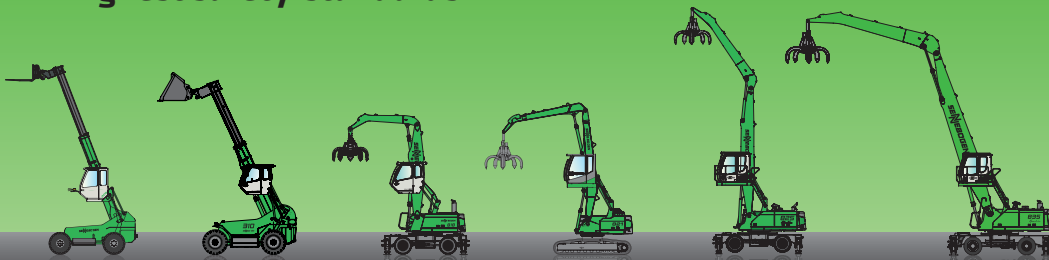
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