



Recycling

International

March 2013, No.2



E-scrap

free trade or fair trade?

Integrating recycling software into the scrap yard

ISRI chair Jerry Simms: the philosophical peddler



It has been written that the purpose of punctuation is to 'tango the reader into pauses, inflections, continuities and connections that the spoken line would convey'. So please take our hand as we lead you in a dance through some of the small but potentially controversial language-related changes we are making to your magazine....

The hyphen's last tango?

I love the English language in all its quirkiness. For example, I have regularly debated the merits of Americans choosing to kill off the 'u' in words like 'rumour' and 'colour' as well as the final 'i' in 'aluminium'. Some would say it's an act of character assassination, pure and simple.

Spoken English can be even more of a minefield. It seems perverse, for example, that the letters 'ough' can be pronounced eight different ways in a single sentence: 'A rough-coated, dough-faced ploughman strode through the streets of Scarborough, coughing and hiccoughing thoughtfully.'

At Recycling International, we have tried to follow a decisive course with this occasionally exasperating but beautiful language. For example, we have refused to conform to emerging mainstream practice in a publishing industry that has chosen increasingly to omit the Mr, Mrs or Ms from people's names and that has declined to use initial capital letters with their job titles. Attitudes have certainly changed since my days as a junior reporter when anyone caught writing 'managing director' rather than 'Managing Director' would have been deemed guilty of, well, a capital offence.

But, grudgingly, we have come to accept that use of Mr/Mrs/Ms at every turn or excessive numbers of capital letters in long job titles can hamper the flow for a reader. We have been standing like that famous

'Believe me, I feel guilty about waging war on poor, defenceless hyphens.'

Dutch boy with his finger in the dyke - but we acknowledge that we cannot hold back the inevitable process of change for ever.

We have also been taking a long, hard look at the hyphen which, for many writers, has long been about as welcome as a journalist at a board meeting. Lynne Truss, who wrote the unofficial Bible for those wanting to understand and celebrate the finer points of the English language, blames emailing and 'txt msgs' for turning proper punctuation into an endangered species in her number-one best-seller

'Eats, Shoots & Leaves'; and in one of the later chapters of this hugely entertaining book, she borrows the following quotation from an old style guide of the Oxford University Press in New York: 'If you take hyphens too seriously, you will surely go mad.' Over the years, some illustrious individuals have complained about the demands imposed by the hyphen police. British prime minister Winston Churchill once described hyphens as 'a blemish, to be avoided wherever possible', while US president Woodrow Wilson argued that the hyphen was 'the most un-American thing in the world'. Punctuation can certainly stir the passions: back in 1905, for example, Bolshevik printers in St Petersburg demanded to be paid the same rate for setting punctuation marks as for letters - an event credited for precipitating the first Russian Revolution.

From now on, Recycling International intends to be a little more sparing in its deployment of hyphens so as to reflect common usage. It will no longer appear in such words as Eurozone, emails and online, and neither will it be used in words familiar to the recycling sector such as deinking and reuse. Believe me, I feel guilty about waging war on poor, defenceless hyphens but, to be fair, left untreated they can spread as widely as an industry rumour (or should that be 'rumor?').

Even Lynne Truss admits to sensing the hyphen is 'for the chop' - a victim of language evolution. But how can we possibly exile the hyphen altogether? There are some words, such as 'co-operate' and 'co-ordinate', in which the hyphen serves as a valuable pronunciation guide. And in certain circumstances, the hyphen would seem to be essential:

there is a chasm of difference in the meanings of, for example, 'the 20 odd members of the extended Recycling International team' and 'the 20-odd members of the extended Recycling International team'.

No doubt, the changes we are making will attract support from some, criticism from others and complete indifference from the vast majority of readers. But in the unlikely event we find ourselves on the receiving end of a backlash, I guess we could always re-vert to type.... □

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THIS ISSUE

Coverstory

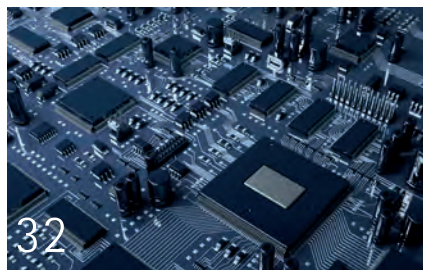
E-scrap - free trade or fair trade? / 26

One of the main debates at the latest International Electronics Recycling Congress, which took place in the Austrian city of Salzburg on January 18-20, concerned the concepts of free and fair trade in e-scrap. Global fair trade requires a level playing field with regard to legislation, environmental processing standards and work/safety measures, it was generally agreed.



Integrating recycling software into the scrap yard

With technology providing the seed for various innovations in rapid succession, it hasn't taken long for software to assume a major presence in the recycling market. Germany's RECY Systems laid the cornerstone for a quickly-maturing niche market that has proven its worth to the recycling industry.



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Shinier prospects for platinum and palladium prices

Based on a report prepared by US autocatalyst recycler A-1 Specialized Services & Supplies, this article offers a detailed examination of the platinum group metal markets and of related recycling activities.



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ISRI chair Jerry Simms: the philosophical peddler

Only a very small minority of people in the scrap industry can claim to have a degree in philosophy. But ISRI chair Jerry Simms' chosen major has stood him in good stead, providing him with analytical skills which have benefited many task forces within the US Institute of Scrap Recycling Industries.



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Aluminium: no future without recycling

The pivotal importance of recycling to the future of aluminium was laid bare at the latest International Aluminium Recycling Congress. The event touched on a number of the salient and sometimes contentious issues surrounding aluminium scrap, including international flows.



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<p>7-9 April Malmö (Sweden) Shiprec 2013 International conference on ship recycling World Maritime University Phone: +46 40 356 343 Email: shiprec2013@wmu.se www.wmu.se</p>	<p>25-26 April New Delhi (India) MRAI International Conference International conference of the Metal Recycling Association of India Phone: + 91 226575 4321 Fax: + 91 226725 9555 Email: mail@mrai.org.in www.mrai.org.in</p>	<p>9-13 April Orlando (USA) ISRI Convention and Expo 2013</p>	
<p>8-10 April New Delhi (India) WMR India 2013 Exhibition on waste management and recycling Mack Brooks Exhibitions Phone: +44 1727 814400 Fax: +44 1727 814401 Email: info@mackbrooks.co.uk www.mackbrooks.co.uk</p>	<p>19-21 May Nan'an (China) 6th China International Metal Recycling Conference Metallurgical Council of CCPIT phone: +86 10 6522 0754 fax: +86 10 6525 4154 inco@mc-ccpit.com www.mc-ccpit.com</p>	 <p>Walt Disney and Mickey Mouse in Disneyworld, Orlando.</p>	
<p>9-11 April Moscow (Russia) Aluminium-21/Recycling 6th international conference and exhibition on aluminium recycling Alusil Phone: +7 (495) 785 2005 Email: main@alusil.ru www.alusil.ru</p>	<p>23-25 May Hangzhou (China) China International Recycling Conference & Exhibition CRRRA phone: +86 10 5289 3970 fax: +86 10 5126 3773 carol@chinacrra.org www.chinairc.org</p>	<p>The Institute of Scrap Recycling Industries (ISRI) returns to the east coast of the USA for its largest-ever convention and exposition. This year's event will see more than 300 exhibitors promoting equipment, products and services specific to the recycling industry. There will be a record number of general sessions, spotlight programmes and workshops focusing on a broad range of industry topics, as well as market updates relating to ferrous, aluminium, copper, lead, zinc, nickel and stainless steel scrap, as well as electronics, plastics and recovered paper. The chair's General Session will feature a Democrat and a Republican. Haley Barbour and Ed Rendell have made careers of public service and politics; both have served two terms as governor of their state, have chaired a national political party and have featured as political commentators on major television networks. In Orlando, they will share their perspectives on governing in the present political climate and beyond. The chair-elect's General Session will be addressed by Tom Brokaw, former anchor and managing editor of NBC Nightly News. As a television news correspondent, Brokaw has won every major award in his craft, including Emmys and lifetime achievement recognition. He retired from the anchor desk following the 2004 elections but has remained with NBC as a special correspondent while embarking on new endeavours in writing. His first book, 'The Greatest Generation', has become one of the most popular non-fiction works of the 21st century. ISRI's Final Night Gala will be held at Universal Studios, providing unlimited access to all the attractions in The Wizarding World of Harry Potter.</p> <p><i>For more information, contact:</i> ISRI, Washington DC, USA, Phone: +1 202 662 8500, Fax: +1 202 626 0900 www.isri.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: +1 202 626 0900 www.isri.org</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>11 April Düsseldorf (Germany) 16th International Recovered Paper Conference BVSE Phone: +49 228 988 490 Fax: +49 228 988 4999 Email: info@bvse.de www.bvse.de</p>	<p>28-31 May Moscow (Russia) WasteTech 2013 Sibico International Phone: +7 495 225 59 86 Email: waste-tech@sibico.com www.waste-tech.ru</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>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 Email: office@viaexpo.com www.viaexpo.com</p>	<p>5-7 September Karlsruhe (Germany) Recycling Aktiv Outdoor recycling show Geoplan GmbH Phone: +49 72 29 6060 Fax: +49 72 29 60639 Email: info@geoplanGmbH.de www.recycling-aktiv.de</p>	<p>11-13 September Dubrovnik (Croatia) ICBR 2013 International Congress for Battery Recycling – ICM Phone: +41 62 785 1000 Fax: +41 62 785 1005 Email: info@icm.ch www.icm.ch</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 Email: k.lashkov@b-forum.ru www.b-forum.com</p>	<p>4-6 June Cologne (Germany) End Of Life Plastics International conference and exhibition on end-of-life plastics Applied Market Information Phone: +44 117 924 9442 Fax: +44 117 311 1534 Email: rmm@amiplastics.com www.amiconferences.com</p>	<p>10-12 September Birmingham (UK) RWM Exhibition EMAP Phone: +44 20 7728 3724 Fax: +44 20 7728 4200 www.rwmexhibition.com</p>	<p>17-19 September Gorinchem (The Netherlands) Recycling 2013 Evenementenhal Gorinchem Phone: +31 183 680 688 Fax: +31 183 680 600 Email: debbiedebruijn@evenementenhal.nl www.evenementenhal.nl</p>
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EuPR: Europe's PET recycling industry under threat

'The PET recycling industry is threatened by persistent structural market failures across Europe,' according to Brussels-based trade body Plastics Recyclers Europe (EuPR). On the one hand, the current collection infrastructures 'have reached their limit' and the collection of PET bottles is stagnating around 50% whereas the balance of the uncollected PET is still land-filled or incinerated. Europe is 'not maximising the sustainable use' of the valuable post-consumer PET resource, asserts Casper van den Dungen, chairman of the EuPR's PET working group. Intensive lightweighting and complex bottle design have caused the average costs of recycling to increase

substantially during the last few years. As a result, recycling plants have been forced to operate at 'well below 75% of their capacity', he says. He goes on to warn that the potential lifting of anti-dumping duties on virgin PET 'could further worsen the EU industry's position'. PET has been an 'undisputed success' and has long served as 'an example for sustainable development', according to Van den Dungen. This status can be maintained 'if the collection moves upwards to another level and the virgin PET is fairly marketed'. A well-managed and balanced value chain is an essential requirement within Europe, he argues.

www.plasticsrecyclers.eu

Circular economy approach could save US\$ 700 billion

By adopting a circular economy business model, consumer goods companies around the globe would stand to save US\$ 700 billion, according to a report released by the Ellen MacArthur Foundation.

The US\$ 3.2 trillion global market for clothing, food and drinks currently produces 35% of the products in the economy and creates 75% of all municipal waste, the foundation points out. 'Moving to this new model could be worth up to US\$ 630 billion for Europe alone,' it suggests. Apart from the notable goods material savings, additional benefits would include land productivity and supply chain stability.

The collection and processing of household food waste to generate biogas 'represents a huge opportunity', says the report. 'One tonne of food waste can create electricity worth US\$ 26, heat worth US\$ 18 and fertiliser worth US\$ 6. As an example, for the UK alone this could represent an income stream of US\$ 1.5 billion annually.'

Meanwhile, increasing the amount of clothing that is reused or remade could potentially cut up to US\$ 71 billion in material costs in the textiles sector. 'Beverage manufacturers could reduce material inputs and the price of packaging by moving to re-usable glass bottles,' it also states. 'This would enable a cost reduction of 20% per hectolitre of beer.' www.ellenmacarthurfoundation.org

EBRA reports decline in battery recycling

'The European battery recycling industry is facing some important challenges,' according to Alain Vassart, general secretary of the European Battery Recycling Association (EBRA). His comment follows the announcement that registered association members experienced a 5% fall in battery recycling during 2011.

The volume of batteries recycled in Europe dropped from 36 963 tonnes in 2010 to 34 997 tonnes the following year, new EBRA figures indicate. There had also been a slight drop of 1% in 2009 when 37 208 tonnes was recycled. 'These statistics cover all types of batteries and accumulators, primary or secondary, portable, industrial and automotive, with the exception of lead-acid batteries,' EBRA notes in a report.

'To make this new recycling industry attractive in the future, decent economic conditions and a fair level playing field should be granted to recyclers,' argues Vassart. The decline has been attributed in

part to the fact that growth in the consumer and portable collection market for both primary and secondary batteries was lower than anticipated. Health and safety issues are also said to have been a factor, particularly with regard to the recycling of primary and secondary lithium batteries. Nevertheless, Vassart insists EBRA members are anticipating a surge in future tonnages and are investing in recycling efficiency compliance requirements.

www.ebra-recycling.org



Recycling braves the cold

Over the last four years, the USA has seen evidence that recycling is an activity for all seasons, with the Snow Sports Recycling Program (SSRP) collecting and processing more than 350 tonnes of snowboards, skis, boots, poles and helmets within the Denver and Salt Lake City metropolitan areas, according to the Great Falls Tribune.



To prevent US residents from consigning snow sports gear to landfill, SnowSports Industries America (SIA) and Waste-Not Recycling set up an initiative that has gained momentum since its launch in 2009. To date, over 100 000 old skis and snowboards have been recycled - comprising an estimated 5% steel, 25% aluminium and 60% plastic, with the balance being wood and fiberglass. The materials have headed into construction or landscaping applications, or are manufactured into new products, including furniture.

Roughly 9000 cubic yards of landfill space was saved during the first year of the programme, according to the recycling partners. 'It is pretty clear our industry needs to be part of the solution for re-purposing old, broken and obsolete gear,' observes SIA president David Ingemie. www.snowsrp.org



Hong Kong raises stakes on glass recycling

The Chinese secretary for the environment Wong Kam-sing has announced plans to make glass recycling mandatory in Hong Kong. The proposed legislation would mainly target wine, beer and other beverage bottles, he has said.

An estimated 70 000 tonnes of glass waste is generated throughout Hong Kong every year. 'Glass accounts for 3% of all waste in the city, and only 5% of it is recycled,' Wong has observed. 'We can't say it's insignificant - we have to minimise waste in every aspect.' He believes a levy of HK\$ 1 on glass beverage bottles will cover recycling costs. Although Wong has not specified which parties would be required to treat the

glass, environmental groups have suggested importers or retailers would probably be handed this role. Further details regarding the legislation are due to be released in March and the minister expects new measures to be implemented towards the end of the year.

Given that the money raised would support local glass recyclers, they have responded to the new plan with enthusiasm, arguing the levy would potentially cancel out transportation costs. However, the food and beverage trade has pointed out that other forms of bottle would escape the levy and that it would be 'unfair to single out glass'.

Source: South China Morning Post

'Win-win-win' blueprint for UK plastics recycling



The UK can become a world leader in the plastics recycling sector - 'but we can only do that by changing some of our approach', MBA Polymers' chief executive Nigel Hunton told a recent recycling event at Westminster. He went on to suggest that the government should suspend VAT on recycled plastics 'to help stimulate consumer demand and encourage investment' in the UK recycling industry.

'We currently lie behind leading European countries in terms of the recycling rates of post-consumer plastic waste, and in 2011 the UK performance was just over 20%', Hunton observed. 'Sweden, Norway, Germany and France were all above us.' Though the challenge historically has been recycling plastics from complex waste streams, he pointed out technology enabling effective separation is already available on the UK market.

With only a few changes, such as switching the focus from burning for energy generation to 'full recovery', maximised recycling potential might be within the UK's grasp. 'We need auditing of "downstream" overseas plastic waste processors, similar to domestic processors,' asserted Hunton. 'We allow the export of plastics waste but it needs better and more vigorous enforcement and checking.' There is also a need for 'something to incentivise the market with legislation designed to encourage post-consumer recycled plastics content in new products, such as exemption or a reduced rate of VAT', he said.

Such changes would accelerate recycling across the nation, thus providing a 'win-win-win' for society, the environment and recycled plastics businesses in the UK.

www.mbapolymers.com

Joke of the Month



The missing blonde

An airline captain was breaking in a very pretty new blonde stewardess. The route they were flying had a stay-over in another city, so upon their arrival, the captain showed the stewardess the best place for airline personnel to eat, shop and stay overnight. The next morning as the pilot was preparing the crew for the day's route, he noticed the new stewardess was missing.

He knew which room she was in at the hotel and called her up wondering what happened to her. She answered the phone, sobbing, and said she couldn't get out of her room. 'You can't get out of your room?' the captain asked. 'Why not?' The stewardess cried: 'There are only three doors in here - one is the bathroom, one is the closet, and one has a sign on it that says "Do Not Disturb"!'

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People

Bernd Fleschenberg/Hermann Holstein

TSR Recycling, one of Europe's leading metals recyclers, has expanded its management team by installing Bernd Fleschenberg and Hermann Holstein as managing directors at the group's headquarters in Bottrop, Germany. The former was previously managing director of Region East at Remondis while the latter was a board member of ALBA, representing its Waste Operations segment in Germany and Eastern Europe.

www.tsr.eu

Roger Hynes

Top plastics recycling company MBA Polymers has installed Roger Hynes as its new commercial director. Previously, Hynes had been instrumental in delivering 'rapid global growth' for CMC Markets where he was a main board director, helping to grow the company from start-up to a business worth in excess of £1 billion (US\$ 1.58 billion) in just 10 years.

www.mbapolymers.com

Business

Toyota

In a bid to achieve more effective use of resources in batteries, Toyota Motor Corporation (TMC) has revealed plans to sell an electricity management system that uses recycled nickel-metal hydride batteries from hybrid vehicles. The system, which boasts an electricity storage capacity of 10 kWh, will make it possible to comprehensively control the consumption, storage and discharge of electricity as well as to increase usage efficiency, according to TMC.

www.toyota-global.com

BHS/Nihot

US recycling technology expert Bulk Handling Systems (BHS) has acquired Dutch company Nihot Recycling Technology, which designs and produces air sorting and separation equipment for the solid waste and recycling industries. Looking back on a long partnership with Amsterdam-based Nihot, BHS' ceo Steve Miller proclaims: 'They are the best at what they do.'

www.bulkhandlingsystems.com



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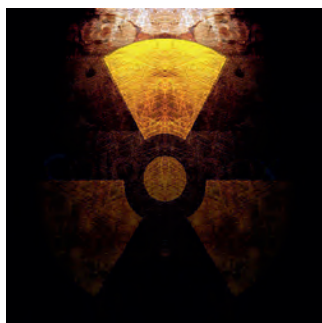


US recycling proposal raises radiation fears

The US Department of Energy is lobbying for the commercial recycling of tonnes of scrap metal from government nuclear sites such as the Los Alamos National Laboratory, according to the Wall Street Journal. Critics within the steel industry fear this move to reduce waste could result in radiation-tainted consumer products.

With a policy of 'reusing materials whenever possible', the US Department of Energy says the roughly 14 000 tonnes of metal under review for possible initial release represents 'only a fraction of the tens of millions of tonnes of metal recycled annually'. In its recent proposal, it suggests that selling the metals could bring in US\$ 10-40 million a year.

The proposal asserts that scrap metal exposed on its surface to radiation can be recycled if the metal is uncontaminated or if radiation levels are low enough to render it 'negligible'. This comprises metals from filing cabinets, tools, equipment and structural steel from demolished buildings. The annual radiation exposure



from a shipment of scrap metal would only be allowed to equal half or even less than that of a person flying cross-country, the document maintains.

However, the proposal has been greeted with fierce opposition and scepticism, mostly from the domestic steel sector. Citing the difficulty and expense of preventing the co-mingling of recycled metals, the president of the Steel Manufacturers Association, Thomas Danjczek, says contamination problems and subsequent clean-up efforts have been known to cost a recycling plant US\$ 15 million. www.energy.gov

Super Bowl success for the Ravens – and recycling

Recycling played its part in this year's Super Bowl, the American Football extravaganza. The synthetic turf installed at The Mercedes-Benz Super Dome in New Orleans was created with the help of recycled materials derived from end-of-life tyres.

'There is 9000 miles of fibre on that field, equalling half a million pounds of recycled rubber,' states Brad Morrison, the owner of its designer, the Ohio-based Maumee Bay Turf Center. Comprised of around 30 000 ground-up and cleaned car tyres,

the field took a dozen crew members three weeks to put together, he adds.

Following the victory by Baltimore Ravens over the San Francisco 49ers, the synthetic pitch - which boasts a lifespan of typically between eight and 10 years - will be donated to the New Orleans Development Foundation, a charity that supports inner-city children.

Incorporating a recycled component into the field of play was one of various ways that New Orleans attempted to set a new mark in environmental sustainability when hosting the Super Bowl for the ninth time. As a result of the post-Katrina US\$ 336 million restoration programme, the stadium is now equipped with many energy-saving features, such as 26 000 LED lights which consume only 10 kW of electricity - the same as a small home.

www.maumeebaylandscape.com



Business

General Motors

General Motors (GM) intends to boost the automotive recycling infrastructure in the south-eastern United States through its new Suppliers' Partnership for the Environment Southern Network. The company aims to increase its number of non-landfill facilities from 104 to 125 by 2020, through sharing best practice in recycling and reuse. 'No one entity can solve this challenge; it will take many people to help transform how businesses manage their waste,' asserts GM. www.gm.com

EcoATM

So-called 'recycling kiosks' for personal electronic items, installed by San Diego-based ecoATM, have begun to appear in suburban US malls. The company hopes the new take-back alternative, which accepts devices such as smart phones and tablets, will 'make electronics recycling as accessible as a grocery shopping trip'. ecoATM has installed 305 robotic and camera-equipped recycling kiosks so far across 20 US states. It hopes to increase the total to several thousand by next year. www.ecoatm.com

Shanks/Machinex

The UK's Shanks Waste Management has signed a deal with Canadian recycling equipment specialist Machinex Industries to provide sorting technologies for its residual waste treatment venture in South Kirkby, Yorkshire. The custom-made facility is scheduled to be completed in 2015 and will enable Shanks to process around 230 000 tonnes a year of residual waste from homes in the Wakefield District. www.shanks.co.uk and www.machinexrecycling.com

Eldan Recycling

Eldan Recycling is preparing to deliver a complete plant to Papua New Guinea for converting all kinds of tyres - including truck and huge mining tyres - into rubber granulate. Eldan estimates production will average 4 tonnes per hour, yielding a 0-4 mm rubber granulate that is 99.9% free of textiles and steel. www.eldan-recycling.com

JMC/Vortex Depollution

Recycling equipment specialists JMC of the UK and Vortex Depollution have reached an agreement that means the former will market and manufacture all of the latter's car de-pollution technology destined for Europe. According to the new partners, Vortex will 'continue to operate as a stand-alone business in the USA'. The Vortex De-pollution System includes solutions for fluid extraction, refrigerant gas removal and spares and core part dismantling. www.vortexdepollution.com

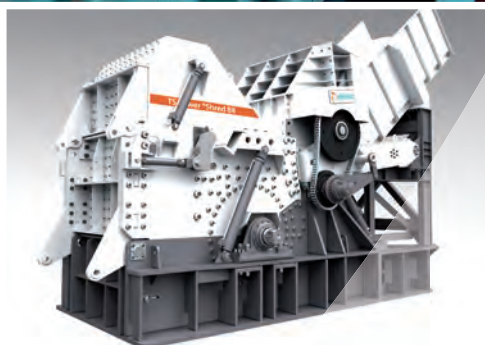
Glen Creston

Glen Creston, a UK specialist in size-reduction technology, has fine-tuned its existing roller crusher mill. Supplied with a modernised control box with PLC, it allows remote monitoring and control of the crusher in process applications. The machine is said to be 'particularly suitable' for de-agglomeration of materials from sacks or silos, for pre-crushing softer minerals and for granulating coarse, lumpy, caked or compacted materials such as plastic waste. www.glencreston.com

PUMA

Sportswear brand PUMA has released its first line of closed-loop footwear, apparel and accessories called InCycle. The new products are either biodegradable or recyclable and are '100% Cradle-to-Cradle Basic certified', says the company. Keen on taking the use of sustainable materials to the next level, the brand has ensured its new recyclable Track Jacket, for example, is made from 98% recycled polyester derived from used PET bottles. www.puma.com

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Western Australia's 'serious' recycling failure



Western Australia (WA) has been labelled the country's 'worst mainland state for recycling' in a report released by the Boomerang Alliance and the Conservation Council of West Australia. It recycles nearly 40% less than the national average while generating strikingly more waste per capita than any other mainland state, the groups conclude. Their report states: 'Perth is rapidly running out of landfill space. The state has an appalling and growing litter problem. Recyclers continue to go broke. The community continues to pay more for waste and recycling services for little or no result.' It also underlines that, according to 2011 data, only 686 861 of the 960 717 homes in Western Australia are covered by municipal recycling services - 'meaning that over a quarter (28.5%) of the WA population are denied access to recycling'. The two groups declare this

to be 'a serious failure', particularly because other parts of Australia boast almost 100% recycling service access. The Boomerang Alliance and the Conservation Council of West Australia are urging the government to adopt a container deposit scheme; citing poll results from January, they state that such a proposal met with 'overwhelming' public interest, with almost 90% of respondents voicing their support for such a scheme and 86.5% saying they would be willing to pay a 10 cents deposit refundable on the return of the container. According to the report, one of the major reasons why Western Australia's recycling performance 'lags behind' is the scarcity of 'conveniently located' collection facilities where consumers can drop off their problem wastes like paint tins, electronics, fridges, used tyres and batteries.

www.boomerangalliance.org.au

Ukraine prepares for waste treatment make-over

Around 36 billion tonnes of waste has been accumulated in Ukraine, with only around 30% of industrial waste and 4% of household refuse being recycled, according to the nation's Ecology and Natural Resources Ministry. Only 75% of households have access to waste collection services, thus allowing 'the formation of illegal landfills' which are frequently overloaded and deemed ecologically unsafe, it says. The ministry estimates that the volume of hazardous

waste present at these sites exceeds 1.5 billion tonnes. In response, the government has approved the concept of a state waste treatment programme for the period 2013-2020, with the elimination of the most environmentally unfriendly facilities containing toxic waste slated for 2013-2015. Pilot projects will also be established relating to the construction of landfills, while facilities will be created to recycle and sterilise waste.

Source: Kyiv Post

Business

Umicore/SimsMM

Belgian recycler Umicore has been heralded as the most sustainable company by Canadian media, research and financial products company Corporate Knights. Announcing its top 100 'green' businesses at the 2013 World Economic Forum in Switzerland, it also confirmed that Sims Metal Management (SimsMM) ranked 15th on its list. Umicore was recognised for its 'top-to-bottom transformation' from traditional mining company into innovative technology firm that 'operates at the frontier of metallurgy, chemistry and materials science'.

www.umicore.com and www.simsmm.com

MicroGREEN Polymers

What was intended as a quick visit to purchase some of MicroGREEN's recyclable cups for the Angel of the Winds Casino ended up with a US\$ 5 million investment in the Washington-based plastics recycling company, says Koran Andrews, ceo of the Stillaguamish Tribal Enterprise Corporation. The Indian tribe especially applauds that the InCycle cups comprise 50% PET derived from recycled water bottles.

www.microgreeninc.com

Recovinyl

Roughly 1.25 million PVC-U post-consumer window frames are being recycled in the UK every year through Recovinyl, the PVC industry's recycling scheme. Latest audited figures show that end-of-life windows and profiles comprised 25 480 tonnes (52%) of the total 48 544 tonnes of PVC recycled in 2011. The volume of frames recycled are enough to replace windows for around 122 000 houses and flats.

www.axionconsulting.co.uk

Textile Recycling Association

The UK's Textile Recycling Association (TRA) has celebrated its 100th anniversary at the Houses of Parliament in London. Member of Parliament Tracey Crouch hosted a special event at which she praised TRA for its efforts on many fronts, including moves to tackle the issue of theft from door-to-door and clothing bank collections - a scourge which 'costs charities millions of pounds' in lost revenue year after year and 'threatens the economic viability' of collection businesses.

www.textile-recycling.org.uk

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A new chapter for China's construction waste?

The Climate Group has teamed up with China's leading concrete manufacturer, the China Advanced Construction Materials Group (China ACM), in a bid to 'tackle one of the biggest side-effects of China's rapid growth and urbanisation', namely urban construction waste. China is currently producing some 275 million tonnes of construction waste per year, of which less than 5% is recycled, asserts the Climate Group. The root of the problem, states the international non-profit organisation, is the lack of a systematic nationwide effort and so it has engaged China ACM in a year-long project to 'bolster recycling of urban construction resources'.

Under the joint recycling project, an expert committee of government and business leaders, academics and representatives from international organisations will be formed, says the Climate Group. This will conduct tours of cities across China, holding panel discussions and exploring topics such as required policy mechanisms, the potential for government support and worldwide best practice.

According to China ACM's chairman Han Xianfu, the initiative will 'make construction waste resources directly into quality concrete for market use, rather than into simple recycled brick to solve construction wastes'.

www.theclimategroup.org

French specialists join forces in MTB Engineering

Four French companies have teamed up to establish MTB Engineering, with the objective of offering customised solutions in all areas of metal processing and waste.

The companies involved in the new venture are MTB, known internationally for its shredders and facilities for cables, tyres, e-scrap, and automotive shredder residue; Turbé, which manufactures conveyors and transport systems; NEO ECO, a research and engineering company; and Ressor, a supplier of recycling equipment and with know-how in refuse-derived fuel.

The partners aim to work in tandem to

provide innovative solutions for processing e-scrap, automotive shredder residue, cables, hazardous waste, plastics, metals and other materials. Towards this end, they plan an 80 000 square metre test centre for trialling new products on an industrial scale.

Since each member of MTB Engineering brings its own network, there are a total of a dozen companies involved in the project, including special stainless steel systems specialist Auger, windsifter company WESTERIA, and electrostatic separation manufacturer HAMOS.

www.mtb-engineering.com

China targets green growth

The Chinese government is looking to expand the annual output value of its resource recycling industry to Yuan 1.8 trillion (US\$ 287 billion) by 2015. Resource productivity will be increased by 15% under current proposals, according to the National Development and Reform Commission (NDRC).

Main targets of the new plan include the setting-up of nationwide industrial and agricultural systems which are 'cleaner and allow more recycling of renewable resources' and 'promoting green consumption', it

is confirmed in a document released by China's cabinet. By focusing on higher resource efficiency, it is hoped to make the country's growth pattern more sustainable. The NDRC has applauded this move, saying it is 'imperative' for China to speed up its development of a circular economy because the country is witnessing ever-higher energy and resource demand, as well as a growing waste burden and increasing difficulty in overcoming climate change effects.

Source: People's Daily Online

ISRI urges South Africa to reconsider scrap export 'intervention'

The Institute of Scrap Recycling Industries (ISRI) has expressed 'grave concern' that South Africa is considering imposing restrictions on the export of scrap metals. In an open letter to the South African government, ISRI vice president & general counsel Scott Horne said the country's new draft policy directive was conceived 'with the stated intent to increase the supply of scrap metals available to domestic industry while also making the price of those scrap metals more affordable for the domestic industry'.

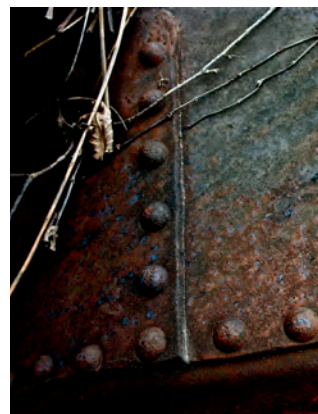
Although he acknowledged it may be 'hard to appreciate', Horne pointed out that domestic scrap prices in most countries are driven by the global marketplace for the scrap materials and not by

the local economy. He cited scrap metals as a 'one of the purest examples of supply and demand economics' and warned that the sector is 'extraordinarily sensitive to even the slightest outside intervention'.

There were abundant examples of artificial intervention in the scrap markets – virtually all of them resulting in 'disastrous consequences', Horne wrote. He recalled that restrictions were placed on the amount of scrap exported from the USA during 1973-74. Despite the imposition of export controls, the price of scrap continued to rise at such a rate that the US steel industry was forced to spend as much as US\$ 2 billion more for ferrous scrap than it would have done without the drastic changes in legislation.

Should South Africa's Economic Development Department succeed in limiting the supply of scrap available for export, the purchase prices would be driven up, causing a 'wild scramble' for scrap metal. The fact that South Africa's move is in violation of its obligations under the World Trade Organization's international trade agreements presents yet another problem. The ISRI vice president argued that the country must 'seriously reconsider any notion it may have of restricting the export of scrap metals'.

www.isri.org



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Task force pursues electronics recycling breakthrough

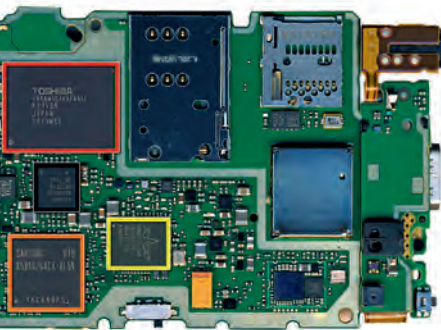
Armed with a US\$ 3.2 million grant from the National Science Foundation, researchers at the universities of Purdue and Tuskegee in the USA have initiated an international campaign to make electronics more environmentally friendly without compromising their quality. The researchers have united behind the Global Traineeship in Sustainable Electronics programme, which will run for five years. By joining forces and involving

the International Electronics Manufacturing Initiative, they hope to 'create materials that will allow computer components to be disassembled, recycled and reused,' says Purdue's professor Carol Handwerker.

Developing nano-composites made of natural materials for structural applications in casings and circuit boards is the group's main mission. 'Being naturally derived and plentiful, these materials may offer an opportunity for low-cost, non-fossil-fuel-derived materials for high-performance structural applications,' she notes.

The 'targeted workforce' will include engineers, scientists, economists, anthropologists, managers and political scientists as people from all of these disciplines are needed 'to address the complex set of issues related to sustainable electronics', says professor Handwerker.

www.purdue.edu



A research team at NASA's Kennedy Space Center in Florida is carefully assessing small tiles made of space trash to explore the potential for storing them safely aboard spacecraft or using them for radiation shielding during a 'deep-space mission'.

Produced at California's Ames Research Center, the so-called circular 'space tiles' contain plastic water bottles, scraps of clothing, duct tape and foil drink pouches - all remnants from an astronaut's time spent 'living in space'. The Ames engineers have built a special compactor to treat the material by melting instead of incinerating it. This process transforms about 'a day's worth of garbage' into a disc of 20 cm in diameter and just over 1 cm thickness - a reduction of at least

10 times from the original size, according to NASA.

'One of the ways these discs could be reused is as a radiation shield because there's a lot of plastic packaging in the trash,' notes Dr Mary Hummerick, a microbiologist at Kennedy. For example, it is possible that astronauts' sleeping quarters could be set up as a 'storm shelter' to keep the crew safe from solar flares.

The compactor heats the trash for over three hours to between 150 and 250 degC so as to kill any micro-organisms. Eliminating bacteria is vital, asserts Dr Hummerick, adding that incorporating the recycled content prematurely might endanger life on another planet. Also, NASA policy dictates avoiding contaminating other worlds. www.nasa.gov

'Dramatic jump' in US bottle recycling

Recycling of single-serve PET water bottles has 'jumped dramatically' in the USA, rising almost 20% in 2011, according to new data released by the National Association for PET Container Resources (NAPCOR) and the Beverage Marketing Corporation (BMC).

While just over 32% of plastic water bottles were recycled in 2010, the figure grew to nearly 39% in 2011 - 'and more than double the plastic water bottle recycling rate of seven years ago', NAPCOR announced. This translates into 250 000 tonnes of recycled material out of the 650 000 tonnes available on the market. The recycling success can be partly attributed to the fact that PET bottles are the most recycled beverage container in kerbside recycling programmes, the organisation said.

Further raw material savings have come through bottle design. Over the last 11 years, the average weight of a half-litre PET container has fallen by almost 48% to 9.9 grams, the BMC pointed out, saving 1.65 million tonnes of PET resin since 2000. www.napcor.com and www.beveragemarketing.com



Consortium focuses on PET-wrap stream

In order to 'identify solutions to the recent issues surrounding polyethylene terephthalate (PET) bottles and full-wrap labels in the recycle stream', US-based Eastman Chemical Company has established a consortium that will 'dig further' into the matter.

Approximately 80% of full-wrap labels in North America are found on PET containers - the most recycled plastic on the market, Eastman states. 'As full-wrap labels are becoming more popular because they offer increased shelf appeal, many PET bottles also have been down-gauged,' it explains. 'The combination of these two elements has exacerbated the challenge recyclers

face in processing these PET containers.' While some US recyclers are able successfully to process the PET containers with full-wrap labels, the so-called 'full-wrap label consortium' - which comprises more than 30 members across the value chain - will focus on finding a 'holistic recycling solution' that provides a 'win-win' scenario for everyone in the industry. According to Eastman, a combination of multiple solutions is the most likely outcome, such as: floatable labels; label perforation; higher availability of de-labelling equipment; and consumers removing the label leading up to collection. www.eastman.com

Quote ~ Unquote

'Anytime four New Yorkers get into a cab together without arguing, a bank robbery has just taken place.'

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NGO attacks Europe over shipbreaking record

'A record-breaking number of 365 toxics-laden ships were sent for breaking by European ship owners to the beaches of South Asia in 2012,' according to the NGO Shipbreaking Platform. This represents a 75% increase from 2011 when a total of 210 EU-owned ships were sent for breaking in India, Bangladesh and Pakistan, it states.

According to the NGO, Greece once again led the way in 2012 by shipping 167 vessels to South Asian beaches. 'That's nearly half of all ships sent by European ship owners in 2012,' the platform underlines. Germany was next on 48 vessels, followed by ship owners

from the UK (30 vessels), Norway (23 vessels), Cyprus (13 vessels), Bulgaria (8 vessels), Denmark (6 vessels) and the Netherlands (5 vessels). Italian ship owners sent three times more ships in 2012 than the year before while MSC, the main Swiss containership and cruise ship company, consigned 23 vessels in 2012 compared to only five in 2011.

'Despite the possibility of proper disposal in Europe or other developed countries, the vast majority of European shipping companies continue to profit by having their ships broken cheaply and dangerously on the beaches of South Asia,' observes Patrizia Heidegger,



executive director of the NGO Shipbreaking Platform. The EU must adopt mechanisms to prevent European ship owners from exporting toxic ships for breaking in developing countries, she insists.

www.shipbreakingplatform.org

'Frantic' scrapping of younger vessels

'Cash-strapped ship owners will scrap younger and younger ships this year as the dry bulk market wallows in the doldrums,' the UK's Drewry Maritime Research has stated in its latest report. A vessel as young as 15 years of age has already been sold for scrap in recent months while the average scrapping age of Chinese-built Capesizes was 21 years in 2012, it notes.

Drewry does not expect an improvement in the freight market in 2013, predicting that the number of bulk shipping companies getting into financial difficulty will only rise over the course of the year. 'Demolitions in 2013 are expected to be above 36 million dwt, more than what was seen in 2012, and the average scrapping age will fall even further as middle-aged vessels struggle to find employment,' the report elaborates. Driven by increasing obsolescence owing to expanding ports, the average scrapping age of Handysize ships dropped from 32.4 to 30.1 years in 2012. It is thought they will be scrapped well before the 30-year mark this year.

According to preliminary data concerning the Panamax segment, shows that as much as 32.7 million dwt of dry bulk tonnage was sold for demolition in 2012, including 6.8 million dwt in the fourth quarter - 'more than double what it was in the last quarter of 2011'. 'But even this frantic level of scrapping will not push freight rates up because the dry bulk fleet is growing even faster,' notes Drewry, pointing out that two-thirds of the 28 million dwt that is due for delivery this year relates to fleets that are 'already very young'.

www.drewry.co.uk

Commission resolute over copper scrap criteria

Despite not receiving the required majority from member states last year, the European Commission is declining to drop its end-of-waste proposal for a 2% limit on foreign materials in copper scrap.

The Commission is continuing to suggest the same threshold in a proposal to the Council of Ministers and European Parliament. Based on a technical report by the Joint Research Centre (JRC), the proposal is currently in the hands of European legislators. The draft underlines that the JRC 'concluded that 2% represents a safe environmental limit value on foreign materials for copper scrap to cease to be waste'.

The BIR world recycling organisation has estimated that upwards of 95% of the copper scrap processed and traded by its members would continue to fall under the 'waste' classification if the 2% threshold were to be adopted. And a



recent Italian study has asserted that copper with 2-5% impurities represents a 'valuable material for producers, especially smelters and refiners, often with no pre-treatment needed'. As noted by ENDS Europe, it also raised the concern that scrap failing to meet the proposed criteria is most likely to end up on foreign markets with more lax environmental standards, thus potentially putting pressure on the European copper scrap industry.

According to Robert Voss, president of the European Metal Trade and Recycling Federation (Eurometrec), his organisation fully supports that the Council of the European Union come to an agreement on the proposed Council Regulation establishing criteria determining when copper scrap ceases to be waste, and he thanks those members states which have raised the issue of a 5% threshold rather than 2%.

www.eurometrec.org

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/ Counter-blade shredder system from Satrind

Guided by the aim of developing a machine that 'guarantees a small and uniform shred size from a two-shaft shredder', Italian recycling equipment specialist Satrind Spa has devised the patented CL system.

This counter-blade size-selection set-up can be retrofitted to all of the company's existing two-shaft shredders.

A focus of the design process was to ensure that output material has the same dimensions as that treated by bulkier and more expensive three- or four-shaft shredders fitted with selection screens. Owing to the fact that the CL system has selection screens positioned beneath the

blades, the machine can be operated without residue building up and causing damage to the screen and bearings, Satrind explains. The manufacturer goes on to note that the CL shredder can handle anything from metal scrap and plastic bottles to textiles, glass and car bumpers. It is available in four different versions of 15 HP, 25 HP, 30 HP and 50HP.

*Satrind Spa, Via F. Baracca, Italy,
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Email: marketing@satrind.it
www.satrind.it*

/ Eriez releases series of suspended electromagnets

International recycling technology specialist Eriez has expanded its product portfolio by adding Series 7000 Suspended Electromagnets, which have been designed to ensure that damaging tramp iron is removed from materials conveyed in heavy burden depths.

When using these magnets, says Eriez, operators can safely and automatically remove tramp iron from heavy product flows such as wood or rock

being conveyed on belts, vibratory feeders or chutes.

The CSA-approved, air-cooled, dry-type electromagnets require no coolant fluids and are available in manual and self-cleaning versions. 'UL-listed construction is available on units for use in hazardous and dusty locations,' the developer also observes.

The magnets come with a five-year coil warranty and are said to reduce power consumption by up to 50%.

*Eriez, Erie, USA,
Phone: +1 814 835 6000,
Fax: +1 800 345 4946,
Email: eriez@eriez.com
www.eriez.com*



/ Radio control boosts recycling safety

France's JAY Electronique has developed a new generation of radio control solutions for recycling equipment such as iron and steel scrap presses, chippers, baling presses and also sorting machinery.

Acknowledging that it is catering to a 'challenging market', the company states that the new devices enable recycling equipment operators to control several machines both simply and safely, and to intervene quickly if necessary. 'For example, it is possible to control a scrap press from the loading crane, and it is also possible to test a conveyor or a baling press without running around between the fixed panel control and the machine,' it notes.

JAY adds: 'As our systems are bi-directional, it is possible to get an information feedback from the equipment, which enables the worker to receive real-time information on working conditions and so avoid any

accidents.' Transparent navigation menus facilitate use of these modern tools, it is also noted.

*JAY Electronique, Saint-Ismier, France,
Phone: +33 04 7641 4400,
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www.jay-electronique.fr



/ Sennebogen pursues 'equilibrium principle'

The 8130 EQ balance material handler is the newest creation from German equipment manufacturer Sennebogen. In contrast to conventional hydraulic material handling machines, the 8130 EQ is electrically driven and is claimed to save up to 75% in energy and running costs.

Owing to its use of the 'equilibrium principle' via an adjustable counterweight, the machine remains constantly balanced in any position, with its centre of gravity staying central. Furthermore, the counterweight is said to result in minimal energy usage and sufficient drive even for long reaches and high loads in scrap handling and port material handling environments.

'The whole machine can be controlled using just two cylinders,' explains the manufacturer. Almost 'no time at all' is required to move the EQ which can run on just 25% of the energy consumed by similar diesel-powered machinery, it adds. The 8130 EQ material handler is said to be suited to unloading goods 'from ships

to handysize-class vessels', and is capable of bearing loads of up to 10 tonnes.

*Sennebogen, Straubing, Germany,
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/ Steinert improves on non-ferrous recycling offer

In order to achieve better separation of finer materials, German equipment manufacturer Steinert has enhanced its non-ferrous metals separator to incorporate the FinesMaster concept.

A new feature of the Steinert NES is the ability to set rotational speed according to the actual application. Its updated pole drum allows for a speed of 3000 revolutions per minute and 'can achieve even better results when processing slag', says the manufacturer. The pole system's adjustment capability also ensures the force exerted by the neodymium magnets can be altered according to the grain size of the material. The compact linking of proven modular solutions such as the magnet drum or the

magnetic belt roller helps make the NES suitable for sorting fine-grained non-ferrous materials, according to the developer. Meanwhile, the particular requirements associated with sorting larger aluminium fractions are covered by the CanMaster product variants, notes Steinert.

The separator can be used to treat virtually all non-ferrous metals, including shredder material, household refuse, incineration slag, electronic scrap, wood chips, glass, batteries and foundry sand, the German company maintains.

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www.steinert.de*

/ CP Group targets single stream market

In response to demand for smaller sorting systems in communities that do not need a full-scale material recycling facility or MRF, the CP Group has reintro-

duced its McMRF system for the handling, processing and separation of single-stream materials.

According to the US technology company, many smaller communities transport waste and recyclables beyond their borders. 'This system now gives them the option to keep them within their towns, creating an opportunity for business while decreasing transportation costs,' the CP Group explains.

The energy-efficient McMRF boasts a 95-98% recovery rate, can handle approximately 10 tons per hour, and can fit into a 20 000-square-foot building, according to the CP Group.

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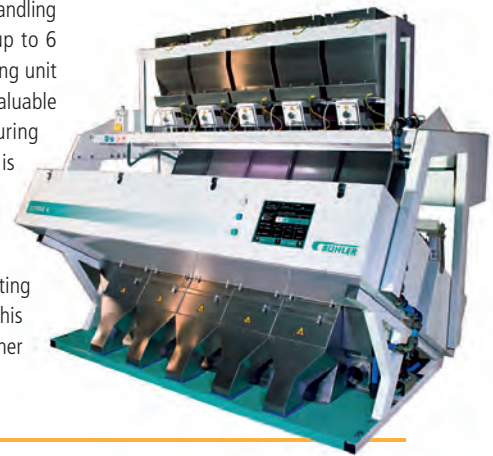
/ Bühler releases 'premium' PET recycling solution

Asserting that optical sorting technologies are increasingly helping PET recyclers to achieve top-quality products, Swiss equipment provider Bühler has upgraded its SORTEX A optical sorter. In addition to featuring five 300 mm-wide chutes for higher-capacity sorting, the machine is equipped with custom-made, high-definition cameras for efficient colour sorting and foreign material removal in relation to PET flakes

The optical sorter is capable of handling large volumes of PET flake - up to 6 tonnes per hour per single sorting unit - without taking up too much valuable floor space in the plant; measuring less than 5 m², the SORTEX A is said by Bühler to be ideal for recyclers who process high volumes but have limited space at their disposal. Apart from targeting unwanted coloured PET flakes, this 'premium' tool can also treat other polymer flakes and aluminium.

The equipment views product from both the front and the rear using high-definition cameras on each of five input modules, ensuring the detection of 'critical defects' such as labels mostly found on only one side of the shred - 'something which is not possible using single-sided technology', the manufacturer points out.

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Fax: +41 71 955 3379,
Email: buhler.uzwil@buhlergroup.com
www.buhlergroup.com*



/ Success only seconds away with SPECTRO

Germany's SPECTRO Analytical Instruments has added a special application package for precious metals analysis to its xSORT hand-held XRF spectrometer, thus enabling it to identify 'within seconds' the gold and silver content in many jewellery alloys. Although the precious metal content of typical gold alloys can be determined with traditional touchstone testing, such as acid tests, this procedure requires employee expertise and experience -

and the seller has to believe the collector, remarks SPECTRO. The spectrometer's new application offers security for both the buyer and the seller, it maintains. 'Best of all,' it adds, 'the pieces of precious metal do not need to be ground and scratched for measurements with the XRF instrument. This is important if its value is to be determined or if the metal is to be further marketed and not just thrown into the recycling bin.'

The device is said to be suitable for positive material identification and environmental screening, recycling of alloys, precious metals and aluminium, plus mining and compliance screening.

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E-scrap free trade or

One of the main debates at the latest International Electronics Recycling Congress, which took place in the Austrian city of Salzburg on 18–20 January, concerned the concepts of free and fair trade in e-scrap. Global fair trade requires a level playing field with regard to legislation, environmental processing standards and work/safety measures, it was generally agreed.

The latest International Electronics Recycling Congress (IERC) to be organised by ICM of Switzerland featured a panel discussion entitled 'Free trade, fair trade or no trade'. In a poll of delegates, two voted for free trade, five for no trade (or rather, 'localised trade') and the rest for fair trade. This outcome led the session's moderator Mike Biddle, the founder of MBA Polymers, to comment with irony: 'Obviously, there are not many Americans in this room; otherwise, free trade would have gotten many more votes.'

There was animated discussion as to whether free trade would be acceptable if e-scrap could be processed in an environmentally sound way in developing countries. 'Our industry lives from free trade,' insisted Stefan-Georg Fuchs of German copper processor Aurubis. 'We like to advocate free and fair trade. But for fair trade, we need a global level playing field for environmental processes, work and safety measures, but currently there is no level playing field.'

For instance, he described as 'unfair' the fact that the Chinese government 'is issuing import subsidies which allow companies in China to purchase material at prices above the LME levels'. And he underlined: 'To achieve a level playing field, we need global standards. Fortunately, many organisations are currently working on this issue.'

The panel agreed with the senior Aurubis representative that fair trade requires an even global application of environmental processing standards, as well as comparable work and safety conditions.

Free trade a 'myth'

Jim Puckett, the founder of the Basel Action Network (BAN) toxic trade watchdog, told delegates that he considered free trade to be 'a myth' which comes with tremendous hidden costs such as those relating to air, water and soil pollution. He continued: 'Although it is legal, we should not



fair trade?



Stefan-Georg Fuchs: 'For fair trade, we need a global level playing field.'



Professor Oladele Osibanjo: 'In Nigeria, most imported e-waste ends up in dump sites.'



According to a study by Dr Jaco Huisman, in 2012 a total of 51.3 million tonnes of e-scrap was generated worldwide.



Jean Cox-Kearns: 'It is not the collection that is hazardous; treatment is what needs to change.'

externalise our e-waste costs by dumping materials in developing countries. Instead, we should internalise our costs by processing e-scrap where it arises. Of course we have the "polluter-pays principle", but it is my belief that OEMs should not pollute in the first place.'

On the issue of fair trade, Puckett asked: 'Who determines what fair trade is? Who has got the definition of "fair"? Is it fair when both the buyer and the seller are happy with a deal? I don't think so.'

Professor Oladele Osibanjo of the Federal Ministry of Environment in Nigeria, who is also heading up the Basel Coordination Centre for Training & Technology Transfer for the African region, noted that 'free trade means that there are no rules and no limits'. As a result of globalisation, he added, 'developed countries are dumping e-waste in developing countries. This e-waste usually consists of used ICT (information and communication technology) equipment mixed with e-waste. In Nigeria, most imported e-waste ends up in dump sites, where it constitutes 15-20% of all waste in dump sites.'

'By 2017, Africa might generate more e-waste than the EU'

According to Osibanjo, Europe should help African countries to build state-of-the-art e-scrap processing plants. If that does not happen, Africa runs the risk of being characterised for many more years to come as 'economic boom, environmental doom'.

The panellists agreed on the need for more law enforcement and controls at ports in both exporting and importing countries in order to prevent e-scrap from being illegally shipped or received. Fuchs underlined: 'Controls in the port of Hamburg have revealed that most illegal shipments of e-waste were carried out by Africans. We should also regulate the receiving side.'

Accelerating consumption

A study by Dr Jaco Huisman of Delft University of Technology in the Netherlands has found that, in 2012, a total of 51.3 million tonnes of e-scrap was generated worldwide compared to 14 million tonnes in 1992 and 24 million tonnes a decade later - and the volumes are still growing. Considerable quantities end up in

developing countries in Africa and also Asia (notably China and India).

A study carried out under the auspices of the Basel Convention in 2011 and entitled 'Where are WEEE in Africa' revealed that, in the previous year, 50-85% of the e-scrap in Africa was generated domestically - equating to between 650 000 and 1 million tonnes of e-scrap. In that same year, the collection rate in Ghana was reportedly 95%.

Another important factor to consider when assessing the e-scrap challenge is that Africa's population is growing at a very fast pace: cur-

Swiss Cowbell Award for Jim Puckett

This year's IERC Swiss Cowbell Award was presented to Jim Puckett of the Basel Action Network (BAN), the international toxic waste trade watchdog based in the US city of Seattle.

According to the citation from the IERC jury, the award was made to Puckett 'in recognition of his pioneering and breathless work to prevent the globalisation of toxic wastes'. The IERC's Steering Committee also acknowledged his strenuous efforts to contribute comprehensive strategies for proper treatment of e-scrap across the globe. In thanking the Steering Committee for this tangible appreciation of his work within BAN, Puckett said: 'I created BAN and we bark and we bite, also against your industry. But with this award, you have given us recognition. What you basically say is that messengers are appreciated. I thank you from the bottom of my heart.'



IERC chairman Viktor Haefeli (right) presents the Swiss Cowbell Award to Jim Puckett.



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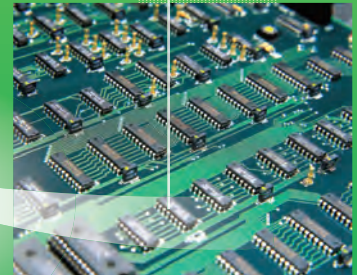
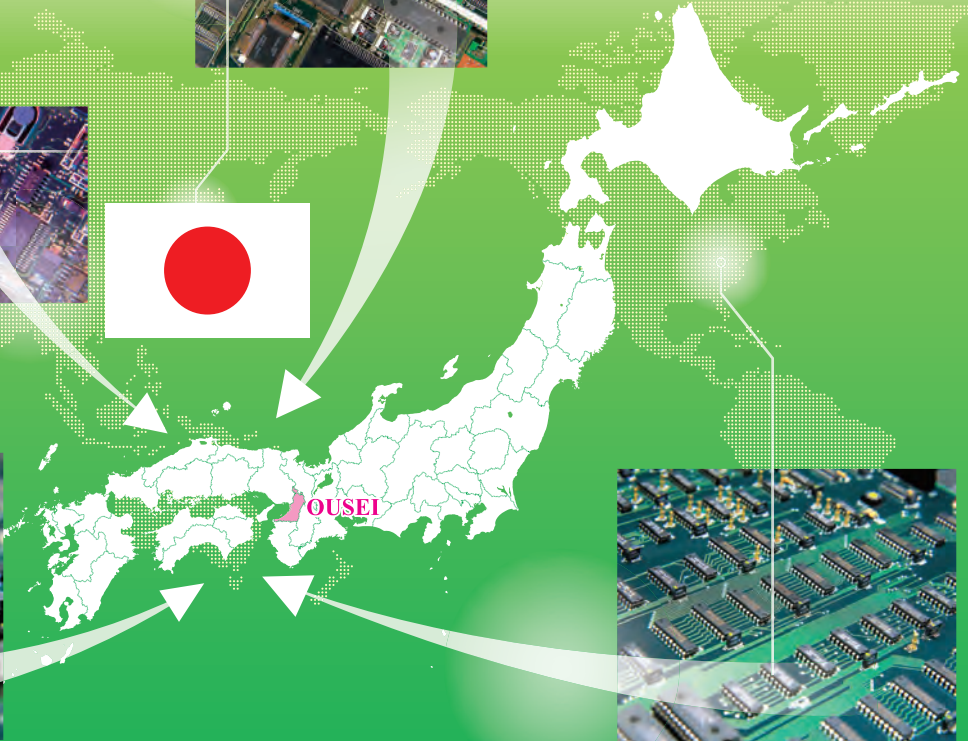
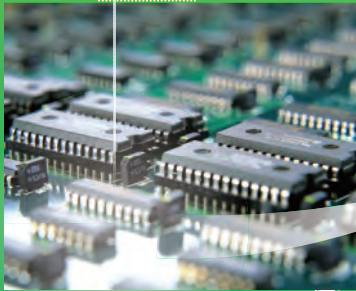
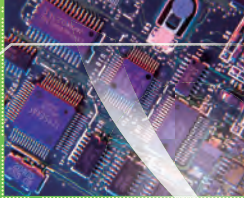
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In general, Africa's e-scrap business is dominated by the informal sector. Connecting the informal collectors to a formal recycling structure is pivotal.

rently estimated to be around 990 million, the total is expected to grow to 1.7 billion by 2020. In line with the economic boom in a number of African countries such as Algeria, Angola, Congo, Equatorial Guinea, Gabon and Nigeria, the standard of living - and therefore consumerism - is on the increase.

According to a study by consultants at McKinsey, Africa's long-term growth will increasingly reflect interrelated social and demographic

changes, creating new domestic engines of growth. Key among these will be: urbanisation; an expanding labour force; and the rise of the middle-class African consumer. Just 28% of Africans lived in cities in 1980 compared to nearer 40% today - a proportion similar to that in China and larger than that recorded by India. By the year 2030, this share is projected to rise to 50%, with Africa's top 18 cities expected to boast a combined spending power of US\$ 1.3 trillion. The economic boom also means accelerating consumption for the electronics business, resulting in high growth rates for new products and a high market share for second-hand products.

'To achieve a level playing field, we need global standards.'

Although Africa is generally characterised as 'the dumping ground for e-waste', there are initiatives in place to create a structured and environmentally sound e-scrap processing sector on the continent.

One of these is the E-Waste Solutions Alliance for Africa, in which leading OEMs such as Dell, Hewlett-Packard, Nokia, Philips and Reclaimed Appliances have joined forces, working with and supported by the United Nations Environmental Programme (UNEP). Jean Cox-Kearns, director of compliance at Dell Global Takeback, commented in Salzburg: 'No matter how well designed, eventually all devices will become e-waste. By 2017, Africa might generate more e-waste than the EU.' But although awareness of e-scrap is accelerating, larger processing plants operating at environmentally acceptable standards exist at present in only a few African countries such as South Africa and Kenya.

In general, Africa's e-scrap business is dominated by the informal sector. 'Connecting the informal collectors to a formal recycling structure is pivotal,' Cox-Kearns insisted. 'Currently, there is no connection between the OEMs, the producers and the material flows. With our Alliance, we are trying to change that. We aim to leverage existing infrastructure and raise the standards so that fractions, especially the non-valuable fractions, do not end up at local dump sites.'

The E-Waste Solutions Alliance for Africa is currently trying to encourage the private sector to establish facilities and infrastructure such as e-scrap collection and treatment centres, and is also attempting to involve the informal sector. The producers support the recycling efforts through a so-called Producer Responsibility Safety Net.

In addition, it was noted, regional infrastructure solutions will become viable as volumes of e-scrap continue to grow.

Call to action

'To achieve a closed loop on material sources in Africa, supporting regulation and enforcement are required,' Cox-Kearns underlined. Currently, a form of e-scrap legislation is in place only in Nigeria and Cameroon. Among the key considerations for achieving this closed loop, recovery should be maximised, official (legal) waste streams should be used, priority should be given to reuse, and care should be taken to align legislation with the scarcity of resources. 'It is not the collection that is hazardous; the informal sector in Africa does it very well,' she noted. 'Treatment is what needs to change. E-scrap recyclers in Europe and the USA need to be considering Africa as their opportunity for growth,' she insisted. □



Most e-scrap that ends up in dump sites in Africa consists of used ICT equipment mixed with e-waste.

Record-breaking IERC 2013

This year's 12th International Electronics Recycling Congress (IERC), organised by Swiss company ICM (International Congress & Marketing), attracted a record attendance of more than 500 delegates from 37 countries. In addition, 53 exhibitors were drawn to the trade show which ran in parallel with the conference; these included a mix of equipment manufacturers and service providers.

Over the years, the IERC has become a major international platform for discussion of the latest developments and challenges relating to worldwide waste electrical and electronic equipment (WEEE). The 13th edition of the IERC is scheduled to take place from 22-24 January next year, once again in Salzburg. Further information on the event can be obtained by visiting the ICM website at: www.icm.ch



The IERC 2013 attracted more than 500 delegates from 37 countries.

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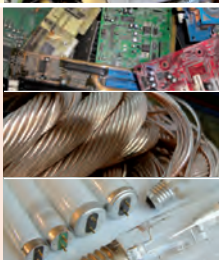
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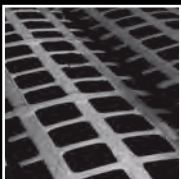
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Software in the scrap yard

With technology providing the seed for various innovations in rapid succession, it hasn't taken long for software to assume a major presence in the recycling market. A great number of the solutions available today have been updated, 'pimped' and otherwise tailored to suit the needs of users around the globe, but Germany's RECY Systems still stands apart as an industry pioneer. The company developed the first integrated recycling software solution back in the 1980s; in so doing, it laid the cornerstone for a quickly-maturing niche market that has proven its worth to the recycling industry.

It was in 1984 that German software specialist RECY Systems designed the first version of its system for a glass mill. 'This first customer came to us asking for an efficient logistic solution to collect the glass from some 3000 containers in the city of Munich which had been filled with bottles by recycle-friendly citizens,' recalls RECY's founder and ceo Bernd Klarmann. Compared with the software's hugely-increased capabilities of today, this was an easy task. 'However, the technology of that time wasn't advanced enough and there was no automated software solution available,' he says. 'So we had to come up with a new approach.' On creating a solution for the recycling industry, Klarmann & Partner - as the company was known at that time - identified and examined the three main problem areas for recyclers: logistics; material handling at the site; and material pricing. 'The recyclers we worked with on the system told us that the main issue for them is buying and collecting recyclable material from companies and public locations, not

'Recycling is an expensive enterprise; thus, it must be efficiently organised.'

the selling of the recycled products,' Klarmann explains. 'The transport side involves a lot of factors, ranging from fleets of trucks and hundreds of containers and bins to a lot of scheduling and dispatching. After all, a single truck, equipped with loading gear and such, has a value well over Euro 250 000. Overall, recycling is an expensive enterprise; thus, it must be efficiently organised.'

Pressure to track

By bundling the required solutions as integrated modules, RECY was able to tackle the domestic recycling industry and then, increasingly, an international customer base. Over the last 15 years, the market for recycled material has been dominated by international trade, observes Klarmann, whereas previously German scrap companies had dealt mostly with German steel mills, for example. In a complete change, containers are being sent routinely to



far-away destinations like India, China and Vietnam. This development put extra pressure on the contribution of software to recycling, calling for solutions to ship containers to the other side of the globe and to track them.

'Yes, tracking - we're going to keep coming back to tracking,' agrees George Kane, president of US software specialist 21st Century Programming, which is located in California. 'Put it this way, if you don't know what you have, how can you sell it? You will get caught up in chaos. Our in-depth inventory control grants up-to-the-minute visibility so scrap yards and recyclers can make buying and selling decisions on the fly.'

Streamlining operations

Founding the company jointly with his brother in the year 2000, Kane was the first to bring touch-screen technology to the scene. Growing up in the recycling sector, he witnessed firsthand that the toughest challenge facing recyclers, besides uncertainty, is time. 'Whether you're talking about the time it takes to get a seller in and out of your gate, the time it takes to pay a dealer, or the time it takes to prepare a

booking and get your materials on a ship so you can get paid - time is never on the recycler's side,' he says. 'A lot can change in an hour or a day and it can affect your bottom line. So the faster you can move your material, the better.' He emphasises that 'streamlining operations' from point-of-scale to international shipping is the only route to success.

This has been the vision RECY Systems has pursued from the start, according to Klarmann, who notes that electronic scale interfaces are just as vital to recycling yards as robotics to the automotive industry. 'One of the key functionalities of any recycling software is the one that operates the scale systems because it records the entire physical flow of material that goes in and out of the scrap yard - what the tonnage is, what kind of commodities have been received and in which quality,' says the ceo.

The software is a particular requirement for large scrap yards which are dependent on a controlled and transparent way of handling their high-traffic daily operations, he notes. There is a need for mobile devices for grading and for cameras to establish controls and safeguards - and these are duly provided by RECY's software solutions.

The threat of fraud

'Naturally, an automated system is the way towards efficiency, but what about mistakes? Or worse yet, fraud?' asks Kane. He argues that the hand-writing of weigh-and-pay tickets



RECY's founder and ceo Bernd Klarmann.

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opens the door to a host of problems that ‘threaten your livelihood’, explaining: ‘It’s very simple to turn a US\$ 14 ticket into a US\$ 114 ticket. It’s also very easy to “accidentally” misplace a decimal point and go from 6.0 lb of aluminium to 60 lb of aluminium. And then there’s that employee who’s helping out a friend of his by placing a little extra weight on the scale with his foot to bump up the poundage.’

Today, ‘13 lucky years later’, his own-design Recycling Operations Manager (ROM) has turned out to be a useful tool in proving guilt in several cases of Employee Dishonesty Insurance Claims. On three separate occasions, recyclers received a monetary award or were successful in putting employees who had been stealing from them in jail, according to Kane. ‘This was possible because ROM requires each user to unlock workstation machines with a unique user and password,’ he continues. ‘And because certified scales and cameras are part of every purchase transaction, it makes it virtually impossible for an employee to, say, hand his buddy a ticket for far more than what he’s actually owed for a box of copper wire.’

In response to the recent upheaval caused by metal thefts, many US recyclers have approached 21st Century Programming to assist them with their compliance needs. ‘State or local legislature requires them to keep detailed records of transactions involving certain commodities,’ Kane explains. ‘Our system enables them to collect and compile a seller’s full contact info, DL, address, photo, thumb print, digital signature and photos of their material, and report this to the police with the touch of a single button. Not only has our software improved the relationship between recyclers and the local metal theft police, the police stay out of the yards that have ROM installed.’



Besides the basic data, tegos also provides ‘fillgree information’.

New challenge

With metal scrap and other recycled materials generally witnessing a rise in value over recent years, ‘market fluctuations also grew into a more notable concern’, remarks Klarmann. ‘While you might have purchased a ton of copper for only US\$ 4000 ten years back, you need to pay around US\$ 8000 on today’s market. For some commodities, price increases have been even steeper.’ If you buy scrap for that kind of money, you need to know that you are making the right call; after all, you have to sell it again, notes Klarmann. ‘The fact is that many scrap yards buy mostly in bulk, resulting in huge risks,’ he points out. ‘This means they must be prepared; they must have their risk covered. They noticed this all too well when the market dropped in 2008 and copper went down almost 40% in a very short period. All of a sudden, they were very vulnerable, especially the big yards with a lot left in stock.’

Such steep rises and falls created an altogether new challenge for recycling software: control

‘The police stay out of the yards that have ROM installed.’

of metal positions and hedging. ‘Today, this is a requirement for every metal recycler whereas, once, the London Metal Exchange and COMEX were the domain of large metal traders and banks,’ states Recy’s ceo. ‘First, for our large customers we had to add elements of professional commodity trading. Today, even smaller guys use this complex functionality. Naturally, sound and reliable inventory management is another key element. This differentiates this industry from hedge and investment funds.’

Though Klarmann realises that many smaller players still operate using several different systems all at once, this can have painful consequences, he believes. ‘Imagine if your financial module doesn’t talk to your scale system. You could deliver metals to a consumer which is almost bankrupt. You could lose millions of Euros with no hope of getting it back - and all because there is no integrated control for the guy at the scale who has no clue that there might be a problem.’ To prevent this from happening, RECY provides a ‘credit limit control’ which



21st Century Programming’s founders Dave and George Kane.

closely monitors such sensitive data with the help of its integrated financial package.

Recyclers get their life back

Apart from a wide variety of interconnected options, recycling software has come to be characterised by the ease and efficiency it brings to a site, according to Kane. The president of 21st Century Programming explains: ‘Let’s say John pulls in with an entire truckload of mixed steel. He doesn’t need to drop his container; he just simply pulls his rig onto the scale, ROM opens a ticket, weighs and photographs the load, and then John is off to the mixed steel bin where yard employees help separate the load and account for contamination.’

‘Meanwhile, Mack, another trucker, hauling old washing machines, pulls his load onto the scale and ROM opens another ticket. Both return barely 30 minutes later. The great thing is that they never have to exit their vehicle, there’s never any line or back-up of trucks waiting to weigh. Instead, tickets can be opened, saved, closed and reopened as often as needed until the transaction is completed.’

‘The best thing, or so we’ve been told, is that our software has given many recyclers their life back,’ states Kane, because they no longer have to slave over writing out and reconciling weigh slips for, say, 300 customers a day before closing time. ‘Our clients tell us that they went from spending two to three hours trying to balance the books to 10-15 minutes running a report using ROM. This means they get to go home, be with their families, enjoy sports - all because they are not stuck at the office generating an end-of-day report for hours on end.’



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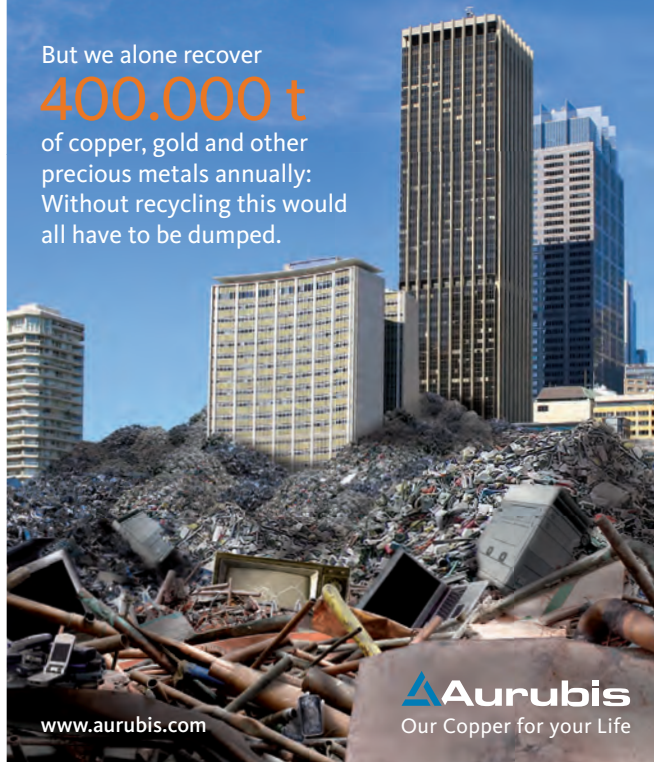
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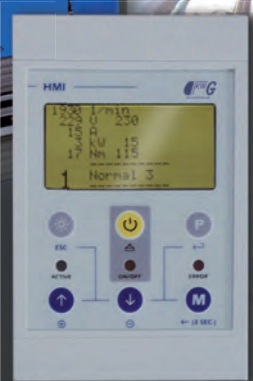
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Ralf Linnemann: 'We ensure no data ever gets lost.'

Profit potential

'Without a doubt, all recycling players stand to profit from implementing industry-specific software,' confirms Ralf Linnemann, ceo of German software leader tegos whose "enwis" and "comotor" have been designed to aid waste disposal companies as well as metal traders. 'Recycling software guarantees data can be available at any workstation in the company, making the work processes much clearer,' he says.

'Last but not least; no data ever gets lost,' adds Linneman. He calls this total package a game-changer for scrap yards as the workstations of the drivers, the weigh men, the people in the

'Recyclers need solutions that fit today and can fit tomorrow.'

back office and the managers are spread quite widely across the site – all in need of real answers in real time. Not just the basic data, he emphasises, but 'filigree information' to procure solid insight that encompasses the complete value chain.

Klarmann highlights the remarkable results that can be achieved. 'We serve one customer in the north of Germany which handles up to 30 big overseas containers every day,' he says. 'The number of transactions resulted in so many manual tasks that, at one point, the company had to employ a whole team to handle all the paperwork, certificates, container bookings and communication with the customs and harbour authorities, and to keep up with the data

flow. Thanks to our software, these tasks are automated with electronic interfaces to the authorities within the country and the ports of destination. This frees up time to spend on high-priority tasks. Recyclers use these functionalities more and more.'

'Out in the open'

However, Klarmann also points to a very strong driver from outside the industry that keeps up the pressure for further recycling software innovation. 'Environmental laws are getting stricter with the passing of every year - largely because governments classify metal scrap as waste,' he notes. 'Many countries, most of them members of the EU, have introduced new regulations to enforce control over recycling data at a mind-blowing rate, all to bring the details out in the open. These are so tough; they impact almost every deal revolving around secondary materials.' According to Klarmann, the company's engineers have made sure the software is on par with the environmental legislation put forward by governments.

Today and tomorrow

To meet the ever-growing demands placed on them, recyclers need solutions that 'fit today and can fit tomorrow,' concludes Linnemann. 'We regularly provide add-ons for the full spectrum of our services, ranging from telematics, document management systems, computer telephony integration, business intelligence and more.' A popular feature designed by the Dortmund-based company is the workflow add-on. 'It allows you to track back any steps you made in the system to localise a mistake and helps you to map the whole process - deciding what actions should take place next, who is responsible, what should be the result and what happens afterwards,' he explains.

Though the focus on continuous progress is healthy, this doesn't mean every trend has to be followed, reflects Kane. He hails cloud computing as a prime example of a new yet very internet-unfriendly development, warning that opting for such a method at a large location like a scrap yard could cause 'a data bottleneck' and slow down - if not shut down - an entire operation.

'Our system is currently compatible with iPhone and the iPad - just like the other guys - but communicates locally with a server that's

less than 100 metres away from any given workstation at the recycler's yard,' he says. 'Because the data are close by, the communication is much faster and doesn't necessarily require the recycler to install a T1 line (high-performance fibre optic telephone line).'

An absolute must

'It's a new world out there,' Klarmann agrees. 'Everyone is walking around with modern devices, playing with smart phones, tablets, etc, so reinventing software is an absolute must. Still, we try to implement new functionalities that actually make sense; (we are) aware that we shouldn't add them for the sake of a new, shiny look and feel.' He remarks that not all enhancements are a 'dream of the future,' saying that 'interactivity' sums up the central vision of RECY's soon-to-be-released version 6.

Convinced of the paramount importance of having a system that keeps you informed while you work, Klarmann states the new system will include 'intelligent interactivity'. He explains: 'High-powered managers, controllers, dispatchers and auditors haven't the leisure time today to study reports, no matter how well they are presented. They want to be informed about exceptions, critical issues and imminent hazards automatically by intelligent software. Technology like smart phones and tablets just provides the means to get this information to these people. If a metal position reaches a critical limit or if a major customer has not shown up at the yard in the last 10 days, they need to know right away.'



ROM grants scrap yards 'up-to-the-minute visibility'.

Shelly Li Founder of Smart Metals

As the founder of Smart Metals, Shelly Li is responsible for running the e-scrap division of First America Metal, one of the five largest exporters in the US Midwest. She has also been active as an award-winning science fiction author for the last four years and hopes her role at Smart Metals will allow her to translate her sustainability vision from fiction into reality.

What first made you decide to get involved in recycling?

'My father is a former commodities trader turned scrap metal exporter, so I spent the great majority of my childhood rummaging through his scrap yard. Through his company's ups and downs - and eventually, First America Metal's public offering through a reverse merger with Golden Oasis, an alternate energy group - I learned a lot about the worth of different materials. And I realised that I really want to help the generation under me understand how important it is to take care of the environment that breeds you, and always to strive to protect rather than to destroy.'

Considering that you are such a creative individual, did you expect your future to lie in the e-scrap business?

'Despite growing up in the industry, I never necessarily thought that I would



'Always strive to protect rather than to destroy.'

follow in my father's footsteps - not as a child, anyway. So it was quite a surprise to me when I did. Yet I gradually began to see and fully appreciate the beauty of an ongoing cycle and, today, turning unwanted materials into a variety of products that will be reused somewhere in the world has become something that still drives me further and further into this industry.'

What are the main challenges you have encountered in the US recycling industry?

'I would say the US sector's biggest problem lies in maintaining trade relationships with its current greatest trade partner, namely China, while at the

same time pivoting to find other partners in other Asian/African countries. Essentially, we are trading with a country that has a need for our recyclable materials at the present, but doesn't really want to be a manufacturing country that needs a great majority of our materials any longer. The US recycling industry needs to look at other opportunities, diversify its offerings, so that if something strikes China economically, we can minimise our risk.'

To date, what has been your most rewarding experience in recycling?

'Knowing that the humanitarian aspect is very much present in recycling, that

it's not all about the bottom line. This is an industry that really grows your heart because my job allows me to wake up every day knowing that our results help other people - whether it's through something most industries accomplish, like providing jobs, or something specific to the recycling sector, like minimising waste. I also love walking into client meetings, talking about the environmental results that our company has achieved overseas, and watching the domestic wholesaler's outlook on what we do change completely within the span of 10 minutes. Their attitude can switch from sceptical or even suspicious to welcoming and eager to co-operate. Witnessing that change is amazing.'

Do you have any specific ambitions?

'I think there is lots of potential to develop e-scrap recycling at colleges due to a lack of awareness among students. Smart Metals is located near Duke University - where I am studying economics and philosophy - and has access to two other large universities as well. Spanning students and employees, we're talking about a quarter of a million people. I really want to reach this market, because though there are recycling bins on campus, there is nowhere to discard items with a metallic content. That is quite disheartening to me. Right now, we are installing some e-scrap kiosks to give people a sustainable solution for their batteries, wires, etc.'

How do you think Smart Metals will impact the US market in the near future?

'Like anyone in the industry, I would like to say immediately or tomorrow. It will take a while to tackle the existing info-gap and to finally see more players pay more attention to the e-scrap sector, but I am sure our efforts will catch

on. I suspect that through innovative projects, such as our work at colleges, Smart Metals will be able to become a significant force in the US industry in the next 10 years. In order to achieve this, I would ideally like to move Smart Metals to the US west coast - specifically San Francisco, which is an excellent location for start-up ventures.'

The scrap industry is largely a man's world. Is having a so-called 'woman's touch' an advantage when leading a company?

'Personally, I don't think women in the scrap industry should highlight any supposed strengths - to succeed in this environment, women need to strive to

be competent, professional and honest people, just like the men in this industry. Basically, I just want to be the best that I can in this industry, and let other people judge me for what I have done and who I actually am through our business interactions, rather than who I appear to be at face value.'

As part of the next generation of recycling minds, do you think you handle things differently?

Yes, you could say that, as a 20-year-old, I have a less traditional view on recycling. Instead of doing what everyone else has been doing, I want to explore new opportunities, like leveraging subsidies from the government, and iden-

tify the partnerships that will take us to the next level. More than anything, I want to put a creative spin on things.'

'This is an industry that really grows your heart.'

What do you do to relax in your spare time?

'My interests mostly take place outdoors and include golf, travelling, hiking and swimming. I think fresh air does so much for one's state of mind! I also enjoy attending musicals and, of

course, I love reading and writing. Luckily, recycling gave me lots of fodder for my stories, which contain sustainable elements like zero waste.'

Do you have a personal motto?

'My motto comes from my favourite book "Invisible Monsters" by Chuck Palahniuk: "Nothing of me is original. I am the combined effort of everyone I've ever known." At the surface, it's a very sad quote. But I actually think it's one of the most powerful lines I've ever read. It speaks to the idea of debt, in my mind. I'm indebted to my parents - to my father, for example, because he gave me the tools to be a part of this industry.'

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ISRI chair Jerry Simms the philosophical peddler



Only a very small minority of people in the scrap industry can claim to have a degree in philosophy. But Jerry Simms' chosen major has stood him in good stead, providing him with analytical skills which have benefited many committees and task forces within the US Institute of Scrap Recycling Industries. Now he is bringing those same talents to the top role of chair of the organisation.

You majored in philosophy, so what led you to make that choice?

'I went to Miami University in Oxford, Ohio, and during my freshman year, I took an elective course called Epistemology 101. Epistemology concerns itself with questions such as how exactly do we know anything and whether things are true or not - like with the proverbial question "If a tree falls in the forest and nobody is around to hear it, does it still make a noise?" Such questions intrigued me and I took more philosophy classes until it became my major. I ended up liking to be a reader of philosophy and it gave me good analytical and cognitive skills. I think I was most fascinated with the free will versus determinism argument.'

How and why did you get involved in the recycling industry?

'Initially for the money! During high school and college, I worked during summer vacations for Miles Alloy, our family friend's scrap company. After graduation, I moved to Colorado and I wanted to get a job to make some money. Me, my brother Bob and our cousin started a scrap business. We had a little flatbed pick-up truck and a scale and we would do a route, visiting electricians and plumbers and buying scrap that we would haul back to our garage to sort it. We sold the material to larger scrap yards in the area, usually to Atlas Metal & Iron in Denver. One day, Don Rosen, then Atlas' president, said: "I like you guys a lot, but stop calling me every day for prices. I guarantee I'll be fair and pay you the top price." That was the start of Mile High Metals and my tremendous relationship with Atlas and the Rosen family.'

Later, I got a part-time job at Atlas Metal and, one day, the owner offered me a full-time job which sounded very attractive to me, so I took his offer and quit law school, and I have been working with Atlas and the Rosen family for the 35 years since then.

I learned the business from the ground up, spending the first few months in the warehouse identifying and sorting metals - basic scrap stuff - and then progressed to buying at the scale, which I did for about a year. I moved on to trading and administration, brokering truckloads of scrap, organising transportation and negotiating export letters of credit. Around 1988, the manager of Atlas Metal Sales - the company's non-ferrous service centre and new-metal sales

division - fell ill, and Mike Rosen, then the firm's secretary/treasurer, asked me to fill in. I knew nothing about that niche, but Rosen encouraged me to take on the new challenge. Although my heart was in scrap, I took the new-metal reins and have led the division ever since, now as executive vice president. I've spent a lot of time learning that niche, and I've come to like it a lot.'

What do you like most about the scrap industry?

'My real like is actually something I don't really do in the industry: I'm an equipment guy. I am amazed at the processes. I love watching shredders, cranes, shears and choppers. I also like the fact that recycling is good for sustainability, it saves energy, it prevents the depletion of our natural resources, it preserves precious raw materials, and it greatly reduces emissions

'I love watching shredders, cranes, shears and choppers.'

of carbon dioxide and other greenhouse gases. Another thing is that the people in the industry are incredible. ISRI (the Institute of Scrap Recycling Industries), for instance, has a great staff and volunteers working for the industry. We work on so many issues that determine the future of our industry, and it's so much more enjoyable working with good people.'

How did you get involved in ISRI?

'While I was working for Atlas Metals, the company had me go to meetings of the Institute of Scrap Iron and Steel (ISIS), the predecessor of ISRI, where I got information about the trade, transportation and legislative and regulatory issues. I must admit that, in the beginning, I was not an active guy. Up to 1991, I was more a sit-in-the-back-of-a-meeting-room person. In that year, Atlas first got named as a defendant in a Superfund lawsuit. Superfund was a federal programme of the US Environmental Protection Agency (EPA) to clean up the nation's uncontrolled hazardous waste sites, which included scrap yards. I wrote letters to ISRI arguing against its Superfund policy and that's how I drew the attention of ISRI officers. The best thing, of

course, was the 1999 passage of the federal Superfund Recycling Equity Act, which secured Superfund liability relief for scrap companies.

ISRI then asked me to become more strongly involved in association matters, which I did. Over the years, I worked my way up in the ISRI organisation. I chaired some important committees such as the government affairs committee; I was a member of the stormwater steering committee, non-ferrous division director, director-at-large, chair of the ISRI PAC Leadership Council, member of the national board of directors, and head of task forces that have addressed the Superfund Recycling Equity Act (SREA), automotive mercury switches and other issues. In 1999, ISRI first approached me for a position with their national office, but that was not a good time for me to take on that commitment because my children were still too young. In 2005, I was approached by past ISRI chair Cricket Williams asking me to run for national secretary/treasurer. This time I knew I wanted to do it. Atlas' ceo Mike Rosen was more than supportive, so we said "yes". In 2006, I was elected as secretary/treasurer at ISRI's first convention at the Mandalay Bay Resort and Casino in Las Vegas and last year I was voted ISRI chair.'

Now you are chair of ISRI, how does it feel to be 'the most powerful recycler in the USA'?

'I am certainly not powerful. I am a volunteer who occupies the highest volunteer position with ISRI. I feel it is a fantastic honour and privilege. Being an ISRI national officer is basically a 10-year commitment. I think that both as an individual and as a company you have to be prepared to donate much time to the industry. I devote many, many hours per week to my ISRI work. What I like most about being ISRI chair is being a part of the process. I don't feel different. I feel like working as an equal among all my peers, and that's a privilege. The bottom line is, I've gone from a peddler to an industry chairman, and I think that's pretty cool.'

What are the current threats to recycling in the USA?

'We've got a boatload of problems out there. There's a myriad of minefields we have to navigate through. If I had to name the three biggest threats, the first would be the EPA's definition of solid waste - what we call the DSW. This has

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critical importance. It has been brought about as a result of a relatively recent lawsuit settlement between the EPA and an environmental group called the Sierra Club. As a result, the EPA has proposed a new definition of solid waste that, if passed, would treat scrap as solid and hazardous waste. That would push back scrap into the waste category. Scrap is not waste. We trade a commodity according to internationally-recognised specs and grades. We have issued very strong comments on this proposal and have asked the EPA not to adopt this new definition, and we hope that the EPA will recognise the validity of our arguments. The second threat is material theft. Since 2006 when copper prices started going through the roof, metal theft has increased tremendously. The problem is that, in the USA, we have to deal with a myriad of different state laws instead of having one federal law. ISRI has promoted what it calls ScrapTheftAlert.com so that law enforcers can put out announcements about stolen materials in a 150-mile radius. I think one of the solutions to theft is to educate law enforcement officials and other stakeholders about our industry and

'There's a myriad of minefields we have to navigate through.'

develop outreach and training programmes. The last top-three threat is the issue of free and fair trade. ISRI has a long history of supporting free and fair trade, allowing scrap to flow to its highest markets, and we oppose the imposition of export controls on scrap. Now we face legislation that would impose a ban on some electronic scrap and would require any exports to go to OECD countries only, and not to any non-OECD countries. We believe that these geographic distinctions are wrong. ISRI, of course, shares the concern about illegal dumping and sham recycling, but we should not preclude shipments to non-OECD countries. Rather, we should give companies in non-OECD countries the opportunity to process this scrap so long as they are willing and able to do so in an environmentally safe fashion. Assurance of this can be done by investigating downstream customers to ensure that they have

effective environmental health and safety management systems. We don't want export controls on our scrap. We believe that scrap should move freely from where it is on economic considerations, so long as - and I emphasise that - the shipments go to companies that are both able and willing to handle and process that scrap in an environmentally sound fashion.'

What would you like to change during your ISRI chairmanship?

'In general, I would like to be a motivating factor in increasing volunteerism and reducing apathy in the industry. But there are two specific things I would most like to change. First of all, safety. We are currently the fourth deadliest industry in the USA and we must change that. We must establish in our yards a culture of doing things safely or not at all. We must also have much greater buy-in from senior management. We have a moral and ethical duty to take care of our employees and customers.

The second issue is image. We have spent a lot of money on public relations and have even had focus groups make assessments of us, but we too often continue to be seen as the polluters and the people who buy stolen materials just to get rich.'

What do you see as opportunities for US recyclers?

'The opportunities that we have are that we are a sustainable industry. We create energy savings and preserve natural resources by using secondary feedstock - scrap - as opposed to primary feedstock, or virgin ores. We have the opportunity to show the world what good we do and to hopefully change their impression of what they may think of us.'

How and in what direction will the recycling industry develop in the years up to 2025 and who will be the drivers?

'It is hard to see that far into the future, but I believe that we will always be facing environmental concerns such as those to preserve clean water and clean air, and how we process huge volumes of scrap while maintaining our environmental obligations. As to the structure of the industry, I envision continued consolidation through mergers and acquisitions, as well as further increases in the number of companies that become vertically integrated. I think that the increase in stringent regulations will create



an environment in which only the very large players may be able to manoeuvre and comply while still being able to remain profitable.'

Any 'words of wisdom' for the recycling world?

'Always honour your word and your commitments.'

If you had not become a 'scrappy', what career would you have pursued?

'When I moved to Boulder near Denver in Colorado, I spent my first couple of years working in restaurants as a cook and bartender. Although I enjoyed the work, I realised ultimately that road wasn't going to lead anywhere. But I would still like to own a jazz bar or perhaps be a lawyer. I've always loved the restaurant and bar business, and I love all kinds of music, especially jazz.'

What are your favourite hobbies?

'I like to bike, hike and ski in the Boulder Mountains and I love to read. In high school, I was a real sports jock. My whole family were avid sports players and I played sports 12 months a year, mainly American football, baseball and wrestling. But to be honest, I'm probably the worst basketball player on the face of the earth.'

Would you tell us something nobody knows about you?

'Well, I actually tried out for the Denver Broncos professional football team. There was an opportunity on a "walk-on/free agency" day. There were a lot of really big and fast guys. At the end of the day, the coaches pretty much said to me: "Next time, don't call us, we'll call you." It was probably a pretty silly thing to do, but it was a fun day for me.' □

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Packaging as a 'second layer' of meaning

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Ornate collars, elegant puff-sleeve blouses and semi-transparent caplets – probably not first on the list of products that enter your mind when you think of insulation foam. Yet these are exactly the types of item meticulously crafted by Dutch artist Suzanne Jongmans, whose initial spark of inspiration was transmitted when she stumbled across the packaging for a new computer screen.

By Kirstin Linnenkoper

A good description for my work is “art trouvé” - a genre in art that revolves around incidentally found objects,’ observes Dutch designer and photographer Suzanne Jongmans. When she first got a hold of the foam packaging, she was ‘tempted’ to create a prototype artwork on the spot because of the material’s pleasing appearance. ‘Despite its prior purpose, I noticed its sheer, nearly lace-like and even silky look,’ she explains. ‘I knew it would be a terrible waste to just throw it away.’ Although her series of designs came to life ‘by chance’, each of the costumes and accessories that followed ultimately took a lot of hours to produce, especially the more elaborate creations such as the Renaissance collars carefully pleated and sewn together with gold thread. She says: ‘The dress I made for the portrait “Princess Eva” is a fully-customised outfit and took me several weeks to complete. It wasn’t an easy process, as the plastic proved to be quite prone to tearing and was anything but flexible.’ In fact, the foam was so rigid, it actually ‘stood upright’ on its own, with the young model wearing it like a suit of armour.

‘Different view of reality’

‘On the other hand,’ continues Jongmans, ‘the “Woman with the headdress” features a more spontaneous design, made using only a long sheet of insulation material that

I modelled and pleated to fit her scalp moments before the shoot.’ But then the complexity of designing something isn’t a key concern for the artist. ‘I never explicitly set out to prove that “raw” materials can be beautiful,’ she says. ‘Perhaps this was a by-product of the series. What matters most to me is the act of inventing and, more importantly, adding value to something others would simply put in the trash.’ And she adds: ‘I also found that the packaging foam lends the same protective characteristics to the models as it did to the products it once helped preserve. This grants the person portrayed a pure, even vulnerable appeal.’ Jongmans hopes that the incorporation of organic material and alternative resources will compel the audience to ‘take on a different view of reality’ and challenge how we perceive every-day life and the objects that surround us.

‘Time-cruX’

According to Jongmans, an interesting effect of her series is that, at first glance, it might appear a more traditional homage to the old Dutch masters like Johannes Vermeer or Rembrandt van Rijn. ‘It is when people stop and stare that they discover that it’s something different; a blend, or rather, a contrast between the old and the new, resulting in a sort of time-cruX,’ she elaborates. The modern packaging materials are

FOAM CREATIONS MASTERS

often rich in symbols and printed texts, and thus hint at a message hidden beneath the surface, she suggests. 'You could say that working with foam allowed me to add a second layer of meaning - one I could not have come up with beforehand,' reasons Jongmans. This isn't to say she lets herself rely too much on the material alone, being intensely driven to have her art 'exude both a strong sense of attention to detail and patience'. She explains: 'We live in a world so crowded, full of chaos and impressions. And so I want people to experience peace and quiet when looking at my work, to take a moment to stand still and really interpret and look at something.'

Her series ultimately is a way to encourage people to reflect not on beauty or what is familiar to their eyes and other senses, but on what they think represents 'serenity and craftsmanship'. This was also the atmosphere Jongmans wanted to establish for the various men, women and children featured in her portraits. 'The pictures might look carefully staged - and they are - but, if anything, I've tried to capture my models at ease, absent-minded, nearly forgetting the camera was there,' says the designer. □



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World Recycling E-market

The screenshot displays a complex web interface for a recycling e-market. It features several navigation tabs at the top: International trade, Delivery yard management, Delivery management, Cash management, Self-help management, and Credit management. The main content area is divided into sections for warehouse management, including a grid of camera views for different warehouse sections (e.g., Camera 1 01, Camera 1 02, etc.). Below this, there are detailed data tables for 'List of Offers' and a flowchart illustrating the business process from 'Deal' to 'Export'.

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CL_201107200002	EU Used motor	0004	2	1.50	2011-07-07	2011-07-08	kg
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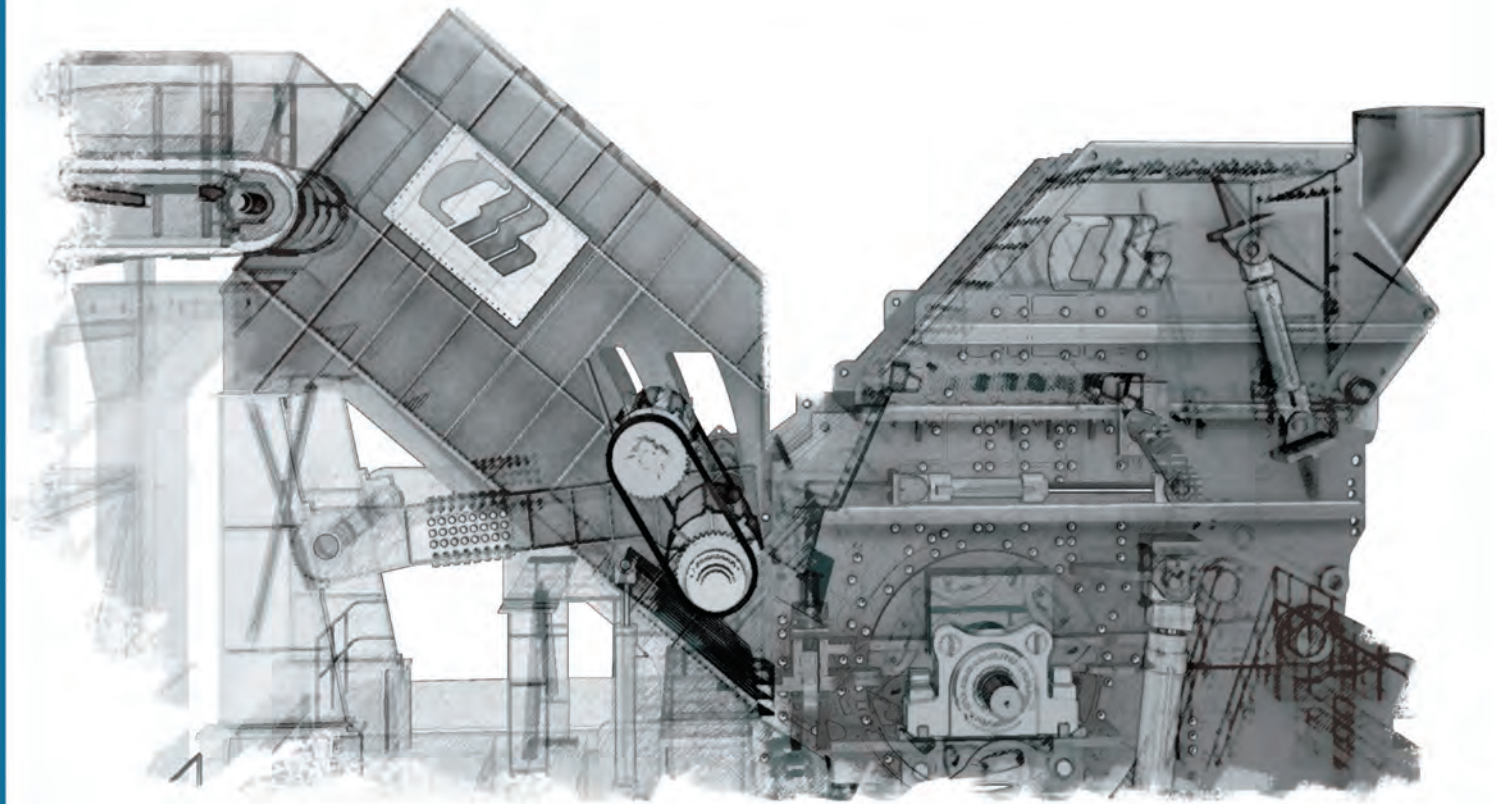
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Shinier prospects for platinum and palladium prices

This article is based on a report prepared by Patrick Magilligan, Ashok Kumar, Suresh Khoksla and Rajesh Seth of US autocatalyst recycler A-1 Specialized Services & Supplies. Released in January this year, the document offers a detailed examination of the platinum group metal (PGM) markets and of related recycling activities, while also analysing prospects for the three metals, including price projections. To a significant extent, values in 2013 will depend on the strength of the recovery in the Chinese economy.



If last year's 14%-plus gain in US vehicle sales can be sustained into the first half of 2013, then the number of retired vehicles should also grow and availability of scrap autocatalysts - or autocats - should rise proportionately. And if platinum group metal (PGM) prices can continue to trend higher over the same period, then improved scrap prices could promote greater recycling totals in 2013. Continued steady growth in the USA and a more discernible economic recovery in China should also support metal values this year.

Taking these factors into account, the volume of platinum recycled from automotive converters is expected to increase by 5% in 2013 to 1.05 million ounces, with a similar 5% gain for rhodium to 250 000 ounces. For palladium, the volume of metal recovered from spent autocats could rise by 10% this year to 1.65 million ounces, reflecting the greater volume of metal entering the system that was used in the manufacture of catalytic converters prior to 2001.

Approaching the latter half of this decade, a larger number of platinum-rich gasoline and diesel converters should begin to flow to market, and recycled platinum and rhodium volumes ought to grow. By the end of this decade, PGMs obtained from recycled autocats could climb as high as 5 million ounces per year - or enough to satisfy about half of the total annual demand for these metals within the automotive sector.

Slower flow

Looking back on 2012, the sharp depreciation in PGM prices from the end of February through to mid-August resulted in a marked slowing of the flow of salvage autocats as scrap dealers and collectors apparently kept material from the market, awaiting a return to higher prices. The platinum price averaged just over US\$ 1500 an ounce during this six-month period, 5% below the average of the first two months of 2012 and 12.7% beneath the 2011 mean of US\$ 1722. For palladium, the average price for last year's March-August period of US\$ 625 an ounce was 8.2% lower than the US\$ 681 of January and February, and 14.9% under the 2011 average of US\$ 734. The subsequent price recovery, prompted principally by production deficits in South Africa, led to some increases in shipments for recycling over the latter months of 2012.

By the middle of last year, earlier growth projections for recycled converters were reduced to reflect the lower volumes of reclaimed metal.



Platinum demand rose 2% to hit 8.88 million ounces last year, while global supplies grew by 7% last year to 7.11 million ounces.



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Revised forecasts called for a more modest increase in the volumes of recycled PGMs from automotive converters in 2012 to around 1 million ounces of platinum (broadly the same as in 2011), 1.5 million ounces of palladium (+10% year on year) and 240 000 ounces of rhodium (+7%).

Clearly, the fortunes of the automotive sector are particularly important for the PGM markets and for recycling of these metals. Industry consultant IHS Automotive is projecting 85 million vehicles will be produced globally in 2013, rising to over 100 million by 2017. The greatest gains will continue to be made in China and other Asian countries, as well as across South America. Production in these major growth markets is likely to remain focused on smaller-engine vehicles that can meet local emission standards with higher relative loadings of palladium.

The double-digit production increases recorded over recent years in China and elsewhere may have passed into the realms of history, but global output should continue to attain record levels. Rising vehicle manufacturing totals and tighter emission regulations will sustain the growing demand for PGMs, particularly palladium.

Almost tenfold increase

US vehicle sales climbed to more than 14.3 million units in 2012 from 12.8 million in the pre-

vious year. Industry experts are projecting US vehicle sales will increase by some 4-5% this year to exceed 15 million. Chinese vehicle sales jumped 4.3% from 18.52 million units in 2011 to a record 19.3 million units last year - an almost tenfold increase over the past decade; the Chinese Association of Automobile Manufacturers is predicting domestic vehicle sales will increase a further 7% to 20.65 million units in 2013. Japanese vehicle sales soared 26% from 2.69 million units in 2011 to 3.39 million in the following year - a reflection of the dearth of new purchases in the period immediately following the country's catastrophic earthquake and tsunami in March 2011. And vehicle sales in Brazil surged 4.6% in 2012 to a record 3.8 million units - up from 3.63 million in the previous year and 3.51 million in 2010.

On the downside, new vehicle registrations in the EU-27 slumped 8.2% in 2012 to 12.05 million units from 13.34 million in the previous year. Meanwhile, the Society of Indian Automobile Manufacturers has reduced its sales growth estimate for the financial year through to March 2013 to zero to 1%, considerably lower than the 9-11% increase forecast earlier last year; however, car sales in India could still top 3 million units.

Supply falls in 2012

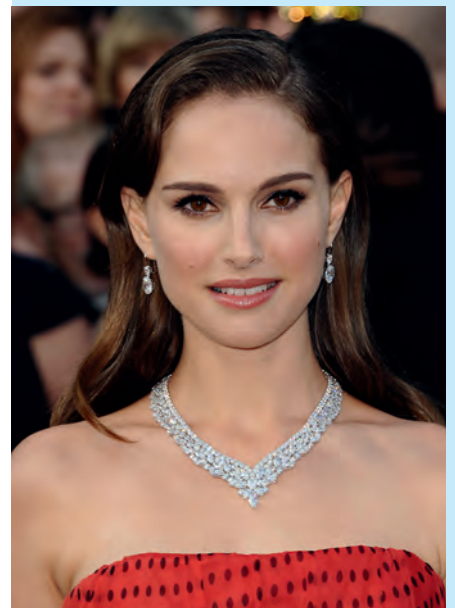
Among the major South African platinum producers, Anglo Platinum has taken the decision to restructure its Rustenburg mines, ostensibly mothballing its higher-cost shaft systems and limiting production at other areas with the overall aim of reducing annual platinum output by 400 000 ounces. Consequently, full-year production guidance has again been reduced to between 2.1 and 2.3 million ounces, down from earlier projections of 2.6 million refined ounces; Anglo produced a total of 2.53 million ounces of refined platinum in its fiscal year ending December 2011. Meanwhile, Impala reportedly produced 750 100 ounces of platinum at Rustenburg in fiscal 2012, with management forecasting production could improve by as much as 80 000-100 000 ounces in fiscal 2013. In Russia, PGM production at Norilsk was marginally lower in the first nine months of 2012. The total of 2.077 million ounces of palladium was 1.2% below the 2.1 million ounces of the same period in 2011, while platinum output showed a similar proportional decline to 527 000 ounces from 531 000 ounces in the

'Modest' jewellery demand growth for platinum

With China accounting for around two-thirds of total world platinum requirements for jewellery, the slowdown in the country's economy over the past year has had an adverse effect on usage of the metal in jewellery manufacture. As a result, total consumption for this application is thought to have grown only marginally in 2012.

Platinum's price discount relative to gold is likely to have appealed to value investors. Additionally, consumer preferences for platinum jewellery at the expense of both gold and palladium may have also supported platinum demand despite the consequences of reduced economic growth in China and flat-to-negative growth across Europe. Estimates of total global demand for platinum consumed in jewellery were as high as 2.5 million ounces for 2012, with only modest growth at best anticipated for 2013.

Demand for palladium in jewellery applications continues to decline, with offtake in 2012 likely to have fallen to just under 500 000 ounces - less than half the global consumption total of just five years earlier. Its increasing cost relative to platinum, an overall change in consumer preferences and a global economic slowdown, particularly in China which accounts for about half of total annual demand, have impacted palladium offtake for jewellery manufacture - a trend which is expected to continue in 2013.



Platinum, the precious metal that never changes colour nor fades, ruled the red carpet at the 2012 Academy Awards. Natalie Portman, who won an Oscar in 2011 for her leading part in the film *Black Swan*, was wearing a platinum and diamond v-shaped cluster necklace and platinum and oval diamond drop earrings by Harry Winston.



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previous year. Palladium output at Norilsk is expected to have recorded a modest decline last year to 2.7-2.8 million ounces while platinum production appears likely to have been in line with the 695 000 ounces of the previous year.

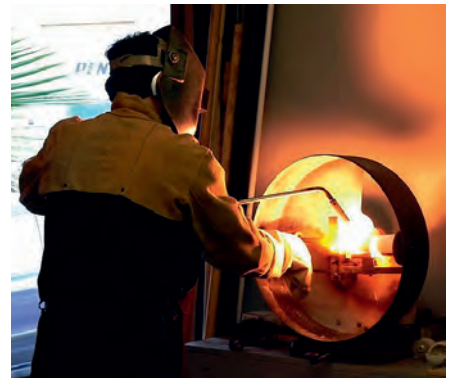
Depressed sales from collectors

Canada-headquartered Stillwater has announced PGM production for 2012 of 513 700 ounces, marginally below the 2011 total of 517 900 ounces; the company is maintaining its forecast of 500 000 ounces of PGMs for fiscal 2013. Stillwater’s recycling operation posted an 8.5% decline in fiscal 2012 to 445 200 ounces as lower PGM prices in the middle months of the year depressed sales from collectors. Stillwater purchases and recycles autocatalyst and oil catalyst scrap for its own account and toll refines on behalf of third parties at its smelting and refining complex in Montana. Meanwhile, Vale’s palladium production increased by 6.7% to 196 000 ounces in the first nine months of 2012, while its platinum output fell 15.4% to 113 000 ounces. And North American Palladium’s Lac des Iles mine in north Ontario, Canada, produced almost 120 000 ounces of palladium in the first three quarters of fiscal 2012 to fall into line with its full-year guidance of 150 000-160 000 ounces; the same company reported palladium output of 146 624 ounces in fiscal 2011. The loss of significant volumes of primary PGM supply from South African producers owing to a series of strikes that began nearly a year ago seems likely to have put the platinum market

into deficit in late 2012 and possibly again in 2013. It is estimated that more than 500 000 ounces of platinum may have been lost last year, with a further 200 000 ounces jeopardised by cuts already projected for this year. Additionally, the cost of these labour disruptions in added wage hikes, lost productivity and reduced profits will cause miners to reduce capital expenditure and expansion plans, making recovery efforts difficult or even unattainable for some time. Therefore, there is potential for a deficit in the platinum market in subsequent years.

Platinum price boost

The platinum price has climbed more than 23%, or by US\$ 327 per ounce, from the lows of last summer to a recent high of US\$ 1705 an ounce as a consequence of these growing supply deficits. Palladium prices recorded an even more impressive gain from the lows of 2012, rising 35% to a recent high of US\$ 749 an ounce. This fairly rapid rise in values over the past six months would appear justified given the sharp drop on the supply side of the equation. Moreover, the solid - albeit moderate - pace of growth of the US economy and, perhaps more importantly, the likelihood of an improving Chinese economy could support further metal value progress through 2013. Platinum prices have risen sharply since the start of this year, gaining nearly US\$ 200 per ounce essentially on the back of a number of recent events in South Africa including, most importantly, the announcement from Anglo Platinum of its decision to reduce its annual output of platinum by 400 000 ounces starting this year in an effort to control escalating costs. But in the absence of any additional supply shocks from South Africa, existing demand for platinum may not be sufficient to propel prices significantly higher than current levels. Nevertheless, platinum prices could continue to trend somewhat higher - perhaps by 5-10% through the first few months of 2013. If platinum prices can sustain a move above US\$ 1700 per ounce, then they could be expected to continue heading higher at least through the first two quarters, thus repeating the trend established over recent years. Overall, however, a high of US\$ 1800-1850 an ounce is anticipated in 2013. A combination of supply deficits and a slightly more promising global economic outlook has restored the platinum price to a premium over that of gold for the first time in 15 months. And



Platinum is melted in the crucible during the lost wax casting process.



The volume of platinum recycled from automotive converters is expected to increase by 5% in 2013 to 1.05 million ounces, with a similar 5% gain for rhodium to 250 000 ounces. Pictured is a VWR Polo GTI 1.4 TSI front exhaust system with high flow catalyst.



Type R and Type S platinum - rhodium thermocouple wire.

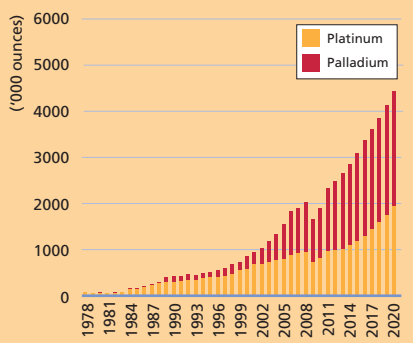
should the world economy continue to show an improvement in the months ahead, gold prices are likely to continue to fall to a steeper discount in relation to platinum as speculative interest fades in the former and investors abandon the yellow metal for more conventional securities.

Improvement for palladium

Initially in 2013, palladium prices struggled to break above US\$ 700 an ounce but have since climbed to a high of US\$ 749 with support from further supply deficits and solid growth in global car sales. Anglo Platinum’s decision to put certain high-cost shaft systems on care and maintenance, thereby reducing annual production by some 400 000 ounces, would equate to the loss of

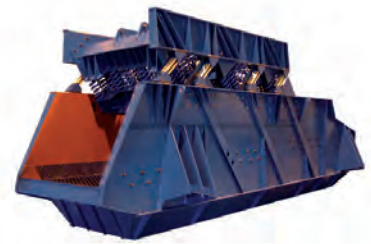
Platinum and palladium usage in the automotive sector

Since 1974, an estimated 140 million-plus ounces of platinum and palladium has been consumed globally in the manufacture of automotive converters. Currently, some 9 million ounces of both platinum and palladium - around two-thirds of total new primary supply of the metals - is used in pollution control applications each year.





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Platinum ore on the conveyor belt at the Impala Platinum mine at Rustenburg, South Africa.

perhaps more than 200 000 ounces of output this year given its current mining profile. South African supplies of palladium may have already declined by as much as 250 000 ounces as a result of the industry-wide strikes last year and a number of other mine closures owing to prohibitive cost escalation.

In addition to the loss of primary supplies from South Africa, recent comments from Norilsk in Russia have again highlighted the fact that the offloading of state stocks of palladium may finally be nearing completion following several years of speculation that sales were coming to an end. Norilsk estimates that perhaps as little as 100 000 ounces of palladium remains for possible sale to the market this year. Moreover, at 2.7-2.8 million ounces, primary supplies of palladium from the company are projected to show only flat to modest growth for 2013.

The palladium price can be expected to increase still further in the months ahead, particularly with the loss of supply from Russian stocks and the potential for more unrest in South Africa. If the recovery in the Chinese and wider global economy continues, this would support an appreciation in the price to US\$ 800-825 per ounce.

In common with platinum, palladium is attracting a high level of speculative interest which will continue to overhang the markets.

Weak rhodium demand

Recently, rhodium has traded up to US\$ 1175 an ounce, gaining more than US\$ 100 in January - apparently in response to the announcement from Anglo Platinum that it would be reducing its PGM production. At current production rates, this cut in output could equate to as much as 40 000 ounces of rhodium each year, or about 5% of current primary supplies. In addition, other mine closures in South Africa resulting from the series of strike actions that affected the platinum sector in 2012 could reduce rhodium supplies by a further 30 000 ounces annually.

The implementation of Euro 6 standards for cars and light trucks and Euro VI standards for heavier trucks in 2013/14 is expected to have a positive impact on rhodium consumption. Scheduled to come into effect on September 1 2014, Euro 6 regulations stipulate a 50% reduc-

tion in emissions of nitrogen oxides to 80 mg per kilometre; meanwhile, the Euro VI standards which came into force in January this year call for an 80% cut in nitrogen oxide emissions and a 66% reduction in particulate matter emissions in heavy-duty vehicles. Rhodium is essential in the control of nitrogen oxide emissions. A market surplus continues to limit any significant recovery in rhodium. Prices have traded either side of US\$ 1100 an ounce for most of the past six months in response to continued low volumes, finding support above the 2008 lows of just under US\$ 1000 an ounce which may also prove to be the nadir for 2013. Despite a possible deficit this year in rhodium supply, physical demand for the metal remains weak. And with the continued decline in European vehicle sales, particularly in the diesel market, rhodium offtake is not expected to show any significant improvement in the near term at least. □

For more information:

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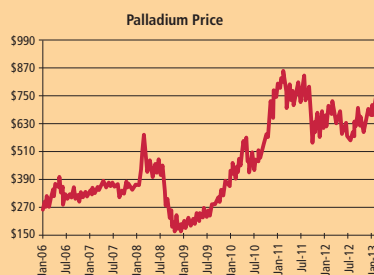
Highlights for platinum

- Production losses in South Africa owing to labour disruptions and mine closures push the platinum market into deficit, supporting higher prices.
- Positive economic data flowing from China and the USA bode well for global recovery and demand for commodities.
- Continued weakness in European car sales and mediocre growth in prospective jewellery sales could temper physical demand.
- A price high of US\$ 1800-1850 an ounce is anticipated in 2013



Highlights for palladium

- Sizeable decreases in primary supplies from South Africa and stable output from Norilsk should keep the palladium market in deficit this year and move prices higher.
- Reports of further declines in Russian stock sales support firmer prices.
- Continued strength in global vehicle sales should sustain the greater demand for palladium.
- With help from the global economy, the metal's price could reach US\$ 800-825 per ounce this year.



Highlights for rhodium

- Loss of primary supplies could spur further speculative interest in rhodium.
- Implementation of Euro 6 and Euro VI standards should bolster rhodium demand.
- The lack of any noticeable improvement in industrial demand could limit rhodium price gains.
- Recent low prices may prove to be a trough for 2013.



Adam Weitsman: ever

A self-confessed 'hermit' who is 'just looking to build my business and take care of my employees', Adam Weitsman of Upstate Shredding/Ben Weitsman & Son acknowledges that he is unlikely to win a popularity contest among US shredder operators. 'I love the competition as much as I love the profitability,' he cheerfully concedes. Nevertheless, even his staunchest critics can't deny that the road he and his company have travelled since the late 1990s is nothing short of extraordinary.

On the surface it may look like a Cinderella story. A 29-year-old fine arts major with no business experience opens an auto shredding plant in Owego, New York, with US\$ 3 million in sales and 30 employees. Fifteen years later, Adam Weitsman has 12 additional feeder yards, 300 employees and annual revenues of US\$ 650 million, and is completing



Adam Weitsman: 'So as long as I stay profitable, I will continue to acquire feeder yards.'

construction of a US\$ 15 million shipping centre on the Hudson River at Port Albany, New York. When his port facility opens in April, he will add 100 employees.

In 2013, Upstate Shredding/Ben Weitsman & Son is expected to generate more than one million tonnes of ferrous and more than 90 000 tonnes of non-ferrous scrap, with revenues anticipated to reach US\$ 750 million. The ultimate goal is US\$ 1 billion.

Impressive as it may sound, Weitsman will be the first to tell you that his is not a Cinderella story. 'When I opened the shredder in 1998, I borrowed a lot of money and I didn't know what I was doing,' he says. 'I got destroyed in the beginning. I was definitely up against the wall and got my head handed to me. Basically, I had a long, seven-year education on how to make zero money.'

Hard times

He adds remorsefully: 'I've had a lot of bad years. Shortly after opening the shredder, I got

in trouble with the federal government and went to prison for a year. I learned my lesson.' Weitsman feels he was lucky not to go bankrupt in those early years. 'They were hard times, but my suppliers stuck by me,' he says. In order to raise cash, he divested himself of all his other business assets. 'Instead of trying to do several things good,' he explains, 'I wanted to try and

'It's not my job to feel sorry for other shredders.'

do one thing really well and so I sold everything else in order to focus all of my attention and resources on the scrap metal recycling business.' The major growth of Upstate Shredding has been in the past seven years, according to Weitsman. Historically, his grandfather founded Ben Weitsman & Son in Owego in 1938 and the company continued under his father, Fred,

up for the battle



The shredder operations are open 24 hours a day, seven days a week, to receive scrap.

until his retirement in 2005. 'It was a small retail operation,' Weitsman says. 'My father never wanted to be in the wholesale business. He gave me the chance to buy the company and I needed feeder yards to make the shredder feasible, so I bought it and merged it with Upstate Shredding although it continues to operate as Ben Weitsman & Son.'

In addition to its corporate headquarters and feeder yards in Owego, there are retail feeder yards in Buffalo, Binghamton, Ithaca, Jamestown, Liberty, Rochester and Syracuse in the state of New York, and New Castle and Scranton in Pennsylvania.

Bold move

Weitsman's most recent acquisition was in mid-December when he purchased the Ferromet facility at auction for US\$ 2.2 million - his second foothold in Pennsylvania. The existing buildings are being demolished and a new feeder yard will be operational in mid-2013. Although some might argue that an over-abun-



Currently, 90% of Upstate Shredding's scrap is sold in the domestic market, but in future, 75% will be exported.



Loading a shredder at one of Upstate's yards.

dance of shredders in the USA has made acquiring feedstock problematic, that has not been an issue for Upstate and its 10 000 HP, 122-inch mega shredder from Riverside Engineering which is capable of producing 450 tonnes an hour. 'We've worked really hard to build up our flow through our feeder yard system and our network of dealers,' says Weitsman. 'We have not seen any decrease, and in fact our flow has been increasing as we acquire more yards. Being a remote buying shredder, we have to go into other shredders' areas to increase our feedstock and have invested substantially in the trucking part of the business.' The company runs 40 tractors, 70 trailers and 1400 roll-off containers of various sizes.

In what could be considered a bold move on its competitors, Upstate increased its across-the-scale buying price by US\$ 37 a tonne in November. 'Our buying prices are higher than our competitors,' he explains, 'but being in upstate New York, and having no debt, our operating costs are lower. Our suppliers are happy, but my

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competitors don't love me. But that doesn't matter since I'm not trying to be a social guy. I'm a hermit just looking to build my business and take care of my employees. If that means we have to go toe-to-toe with the big guys, so be it. I love the competition as much as I love the profitability. I want to win.'

Weitsman says he puts in a 90-hour week to make it all work. 'It's not an easy business,' he says. 'Our shredder operation is open 24 hours a day, seven days a week, to receive scrap. That means we're open three times as long as the other shredders. It's one of the reasons we get the flow. When the other shredder guys are home on the weekend, I want them to know that I'm open and fighting the fight every day as well as when they're sleeping. It's not my job to feel sorry for other shredders.'

Perfect timing

Accompanying Upstate's mega shredder in Owego is a state-of-the-art downstream heavy media separation system housed in a 20 0 00-square-metre complex. To make the shredder profitable, you have to maximise the non-ferrous return, says Weitsman. Additionally, Upstate is in the process of installing a new US\$ 6-8 million wire chopping facility along with a 10 000-square-metre non-ferrous warehouse at its Owego headquarters. The MTB Recycling system, being installed by the Wendt Corp., is designed to handle low-grade wire from the shredding process. 'We're not going out into the market to buy insulated wire from dealers,' Weitsman says. 'There was a time when this material went to the landfill or was sold to others. Now, with this latest technology, we can upgrade that material and add to our profitability.' The wire chopping system is expected to be operational this spring. In December, Upstate signed a 15-year lease with



The company's retail feeder yard in Scranton, Pennsylvania.

options for two five-year extensions on a 7-hectare site at the Port of Albany. 'It was the perfect time for us,' Weitsman explains. 'Albany was a full port - most companies never leave - but when Cargill Salt left, it was our opportunity. I'm glad it didn't happen a long time ago because we wouldn't have been ready and it wouldn't have gone well. To make the port work, you need the volume and we have the tonnage now. I got lucky on this one.' The shipping centre will handle bulk and container shipments served by truck and rail lines from Upstate feeder yards.

This January, a 5-hectare site at the port, operated by Sims Metal Management, came up for lease. Adjacent to the Upstate site, Weitsman is bidding on the property and expects to know the outcome in March. If successful, he says: 'I'll throw Sims out and build a US\$ 35 million auto shredding operation on the property with a second 10 000 HP, 122-inch mega shredder.'

Dramatic shift

Prior to acquiring the port lease, Upstate had exported 70% of its overseas tonnage through Sims, Schnitzer and European Metal Recycling. Until his port facility is complete, 90% of his

scrap is going domestic - a dramatic shift. 'The other exporters are upset that we're building the dock, so it's not a friendly situation,' he says. 'It's mutual. I'm not willing to sell to them and they're not willing to handle my material.' Upstate found domestic homes for the material. 'It's easier to go export,' he explains, 'because

'If I can't throw off cash, the acquisitions will stop.'

you can go by truck to the port. It became more of a transportation issue since I didn't have enough rail cars for domestic shipments, so I had to lease them.' When his port facility is operating, Weitsman expects 25% of his tonnage will stay in domestic markets while 75% will be exported. He anticipates his overseas destinations will be primarily Turkey and India, but he adds that China will also be a possibility. While Upstate is reputed to be the largest privately-held scrap company on the US east coast, three of its major competitors - Sims Metal Management, Schnitzer Steel Industries and Metalico - are public companies. 'You want to be challenged in life,' Weitsman says, 'so you have to go against the biggest guys. They have deeper pockets and experienced staff, but there are so many layers for them to go through to make a decision. Since they have to deal with shareholders, a lot of their decisions are based on their quarterly results, not on what's right or best for the company. I like to compete with everyone, but I would definitely rather compete with the big guys. Going after the small guy is no fun; it's



Upstate Shredding runs 40 tractors, 70 trailers and 1400 roll-off containers of various sizes.



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In December last year, Upstate signed a 15-year lease with options for two five-year extensions on an 7-hectare site at the Port of Albany. The shipping centre will handle bulk and container shipments served by truck and rail lines from Upstate feeder yards.

more fun to go after the biggest guy in the room.' So how big does Weitsman want to be? 'I want to keep expanding and I think we can, doing what we're doing,' he responds. 'Of course, we can only do it if we're making money; 2012 was a very profitable year and I expect a 29% rev-

'Our suppliers are happy, but my competitors don't love me.'

enue growth in 2013. Since we're not a public company, we don't have to pay dividends to shareholders. I just have to treat my employees well, keep some to live on, and invest the rest back into the company. I'm looking to have

long-term success here; I need to reinvest the money to achieve that success. To protect ourselves, we have to grow and build feeder yards that surround our shredder like a moat. If we can work on, say, 9% net, there's a lot of free cash-flow that we can reinvest in acquisitions and equipment. So as long as I stay profitable, I will continue to acquire feeder yards. If I can't throw off cash, the acquisitions will stop.'

When asked if he would ever have Upstate become a public company, Weitsman doesn't hesitate. 'No, never.' Would he ever sell? 'Never,' he says emphatically. 'I will never sell. I'm not interested in selling. We've been approached by Nucor, Sims, Schnitzer and Metalico, and my answer is always the same - no.'

Weitsman says his greatest problem at the moment is staffing. 'I would open 100 yards if I could find the right people,' he says.

He is also concerned about laws such as tag-and-hold and their impact on the ability of scrap processors to do business. 'Environmentally we're at the top of our game,' he says confidently. 'I've poured a ton of money into our yards for storm water treatment plants, detention ponds and fully-concreted facilities, and I think it will pay off business-wise. The Owego shredder plant has a storm sewer system that pipes run off to an on-site water treatment plant.

Facebook fan

Upstate has a comprehensive website (www.upstateshredding.com) which, Weitsman says,



In November 2012, Upstate increased its across-the-scale buying price by US\$ 37 a tonne.



Upstate has invested heavily in storm water treatment plants, detention ponds and fully-concreted facilities.

is continually being updated and improved. He is also a big fan of Facebook and sees it as an important part of his marketing strategy. 'A lot of my customers are on my personal Facebook page and I hear back from them all of the time,' he says. 'It gives a face to the name and people can see your story and know what you're doing. I don't just print the good stuff, I print my life. It's like a diary so people will know if I'm having a good day at work or a bad day at work. Recently, my posting on Facebook let Sims, Schnitzer and Metalico know that our team would be coming to New Jersey this year to do battle on their home turf.'

Weitsman says: 'I wasn't born in this business. I had a totally different career and a long learning curve to get to this point in the scrap industry. What I've found is that I really love this business - I love doing this. I'm not a really smart guy, but I've been able to surround myself with some amazing people. I just want to die having been able to do one thing really well, and they're helping me do this really well.' And he adds with a note of satisfaction in his voice: 'I think everything is going in just the direction I've always dreamed of.' □



The Upstate Shredding/Ben Weitsman & Son team at the company's headquarters in Owego, New York.

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Supporters: China Non-ferrous Metals Industry Association (CNIA)
Bureau of International Recycling (BIR)
Institute of Scrap Recycling Industries, Inc. (ISRI)
Korea Iron & Steel Association (KOSA)

May 19-21, 2013 Le Meridien Chongqing, Nan'an, Chongqing, China

Overview

2012 is definitely a difficult year for metal recyclers with the falling demand, depressed prices and shrinking profit. Although the world economic woes are still yet to disappear, it is expected that the ferrous & non-ferrous metals recycling industries will be better in 2013 with the slow but steady recovery of the steel & non-ferrous markets, stimulus packages gradually taking effect and more favorable development policies issued to cope with the pressing climate change challenge.

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American Pulverizer: listening and learning from customers



Early in the 21st century, American Pulverizer responded to a call from many of its small-to-medium-sized customers for a smaller shredder. The company subsequently wowed its clientele with a streamlined system to slash on-site installation times for its shredders. With its reputation for customer-focused innovation and ingenuity duly assured, the company is continuing to eye yet more equipment developments - including possibly a lighter, portable vehicle shredder.

For more than a century, American Pulverizer has been manufacturing size-reduction equipment - machines that crush, grind and shred a host of materials. With its beginnings in the coal industry, the company also designed machines for handling various other materials, including crushing hops for the brewery business. It was in the 1940s that the company began producing equipment for the scrap processing industry that included shredders for steel turnings and factory clips.

Today, nearly 50% of the company's sales orig-

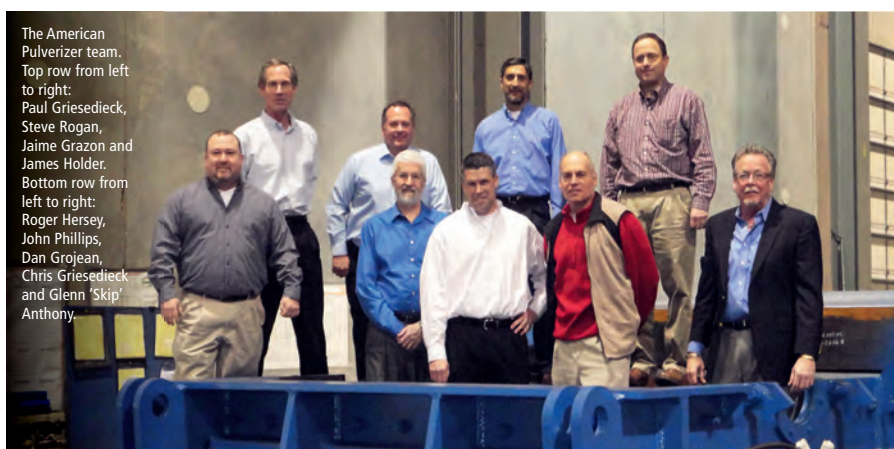
inate in an array of equipment for processing ferrous and non-ferrous scrap, according to the company's president Chris Griesedieck and his brother and vice president Paul, who are the fourth generation to run this family-owned company headquartered in St Louis, Missouri. American Pulverizer made its first automobile shredder in the 1960s - a top-feed 6000 HP machine. Its first side-feed or compression-feed machine came in the 1970s and the company continues today with a complete line of shredders (see www.ampulverizer.com). In 1979, the

company purchased Iron Hustler Co., now known as the Hustler Conveyor Co. In separate locations, but nearby, the two companies work together closely, offering their customers completely integrated scrap processing systems.

Demand for smaller shredders

'Processors that put in our equipment are totally amazed at our installations,' Chris Griesedieck notes, 'because our systems go in so much better, and faster, thus saving the customer time and money. We assemble as much of our shredders as possible before we ship them. They don't arrive on site unassembled. The liners and grates have been put together, the piping done and the hinge lugs welded on at our plant so the field fit is minimal. Our traffic/logistics department at both companies co-ordinates with the end user or installer the weight and dimensions of each shipment as well as the time of arrival. While this means our lead times in the plant may be extended by 350 to 400 field hours, it saves more time in the field. When a customer gets one of our 4000 HP shredders, it goes together in a week. A competitor could take two to three months for a similar installation.'

Until the end of the 20th century, big shredders not only ruled in the USA but continued to get bigger. It was at the beginning of the 21st century that American Pulverizer became aware of the need for a change. 'We had so many customers - mid-to-small-size operations - come to us asking for a smaller shredder,' says Glenn 'Skip' Anthony, vice president of sales and service. 'They said they couldn't afford a US\$ 10 million shredding system and their area didn't have the tonnage to support that size machine. At that time, there was nothing on the market that



The American Pulverizer team.
Top row from left to right:
Paul Griesedieck, Steve Rogan, Jaime Grazon and James Holder.
Bottom row from left to right:
Roger Hersey, John Phillips, Dan Grojean, Chris Griesedieck and Glenn 'Skip' Anthony.



American Pulverizer and the Hustler Conveyor Co. work together closely in offering their customers completely integrated scrap processing systems.

could handle the stress and strain of infeed materials such as whole automobiles, logs and lighter bales in a more moderate price range, so we went to work to design our 60x85 shredder. A smaller shredder can process up to 8000

'We expect international growth to continue.'

tonnes per month of scrap. These machines have been sold not only in the USA, but also to Canada, Mexico, Brazil, the Republic of Korea, New Zealand and Australia for both ferrous and non-ferrous applications.

The driver behind the popularity of the smaller shredder is the value of the non-ferrous metals recovered. Anthony explains: 'For years, the smaller yards were feeding the large shredder operations and only realising the price difference between what they were paying for the material and the buying price on the other end.'

'Team concept'

With the ever-improving technology in downstream systems to separate and recover non-ferrous metals, the smaller yards saw the return on investment for a complete shredding system, thus bypassing the larger shredder operator and going direct for their upgraded product, ferrous and non-ferrous.' And he adds: 'When we know the type of material and tonnage, we can determine what size machine the customer needs. We have customers that can support a small shredder with as little as 1500 tonnes a month.' A complete shredding system can run to as lit-

tle as US\$ 2.2 million. The system selection is determined by what the customer wants to process, as well as by the density.

'With Hustler (see: www.hustler-conveyor.com) as our subsidiary company,' Anthony adds, 'we are a true single source for a complete system including conveyors, magnetic separation, eddy currents and non-ferrous separation. Having the complete package in-house gives us a competitive advantage.'

American Pulverizer has developed a 'team concept' when working with a customer on a new shredding system. Anthony describes it thus: 'We involve our controls people, our hydraulics people, the motor manufacturer - everyone who has a stake in the system is a part of the team. We want the customer to know that with the team concept they can meet the experts that they will be dealing with in each area. Our goal is to be able to answer every question the customer may have at that first meeting. Once we get the system rolling, this allows for open communication between all the players and the customer is not locked in to just one or two people when there is a question.'

'Kick-off' meeting

Recognising that most small- to mid-size operations have never dealt with a project as big as a shredder system, Anthony says, American Pulverizer holds a 'kick-off' meeting. 'Since they typically don't have an in-house person to run the project, we become their partner,' he notes. 'We meet all of their contractors and go through expectations and who is going to do what, so the lines of communication are open. Rather than going through us, they are free to contact the major suppliers directly. It's all wide open and easy to access. By the time we're ready to put the equipment in, the team has developed a checklist to make sure that everybody and everything is ready for the installation. When the customer is ready, we come in and three or four days later the shredder is running.' American Pulverizer is also highly active in aluminium processing equipment, much of which is outside the USA. 'Shredding will clean up contaminated aluminium products such as irony aluminium, aluminium transmissions and engines,' notes Chris Griesedieck. 'The company has also developed aluminium beverage container recycling systems which have the flexibility to process siding and sheet, as well as UBC material.'

Although shredder inquiries have slowed a little, Paul Griesedieck - who runs Hustler Conveyor - says that an increasing number of customers are upgrading components in their non-ferrous systems to recover more metals from the fluff. Eddy currents, metal sorters and separators are non-ferrous money-makers for shredder operators, he considers.

International sales up

On the feasibility horizon for American Pulverizer is a lighter, portable automobile shredder. 'We've been asked to look into such a machine,' Chris Griesedieck says. 'I think it's possible,' he adds with caution, 'but it's not going to be a high-throughput machine. We're studying it.' The company has a portable, high-torque shredder designed for use at demolition clean-up sites and landfills. One has been used in Iraq to process military material.

Although American Pulverizer's overall equipment sales to the scrap industry may be down slightly in 2013, Chris Griesedieck expects international sales to be up. 'Our international business has grown tremendously,' he notes. 'Twenty years ago, our international scrap sales were 10% while today they are approaching 25%, and we expect international growth to continue.'

American Pulverizer and Hustler have 110 employees. Both companies have recently expanded and upgraded their office, manufacturing and warehouse complexes. State-of-the-art CAD (computer-aided design) and CNC (computer numerically controlled) equipment are the norm throughout both companies. Ideas for equipment improvements and for new equipment originate from customers and the companies' 12 engineers. 'We listen to our customers,' Chris Griesedieck says. 'Getting customer feedback from our installations is very important to us.' □



A spider rotor of a 98-inch diameter mill in the assembly hall. The spiders and discs are capped with cast steel.

Aluminium: no future without recycling



The pivotal importance of recycling to the future of aluminium was laid bare at the latest International Aluminium Recycling Congress to be hosted by the Organisation of the European Aluminium Recycling Industry (OEA). Attracting around 120 delegates to Düsseldorf, the event touched on a number of the salient and sometimes contentious issues surrounding aluminium scrap, including international flows.

The aluminium industry is facing a twin challenge: it has to satisfy ever-growing global demand; and by 2020, it must have dramatically reduced overall greenhouse gas emissions. Hopes are fixed on recycling to deliver on both of these fronts.

'Without recycling, the aluminium sector will have no future,' declared Roland Scharf-Bergmann, senior vice president and head of recycling at leading producer Norsk Hydro, in getting straight to the heart of the issue at the recent International Aluminium Recycling Congress hosted in the Germany city of Düsseldorf by the Organisation of the European Aluminium Recycling Industry (OEA). He continued to say: 'But - and this is a big but - recycling cannot be the game-changer to the upstream aluminium value chain because the availability of scrap is limited.'



Roland Scharf-Bergmann:
'Without recycling, the aluminium sector will have no future.'



Günter Kirchner: optimistic about future progress in R&D.

It has already become clear that there is a strong competition for scrap, as OEA's secretary general Günter Kirchner pointed out.

Success story

The success of aluminium in its many applications and global demand-side trends in raw materials affect the supply side significantly. Demand for the light metal has increased steadily over recent years - from around 24 million tonnes in the year 2000 to nearer 45 million tonnes in 2011. This growth has been propelled not only by industrialisation in emerging markets but also by the metal's expanded use in a number of industries, including notably transportation and aerospace.

And the success story appears set to continue. The increasing diversity of aluminium applications means that global demand for the metal is expected to almost double by the end of this decade. 'In 2030, global demand will probably increase to 130 million tonnes,' forecast Scharf-Bergmann, who served as president of the OEA from 2005 to 2008 and who was elected chairperson in 2010 of the Global Aluminium Recycling Committee at the International Aluminium Institute (IAI).

As an effect of rising post-consumer scrap collection volumes, recycling production is expected to grow faster than primary aluminium production over the next 20 years. According

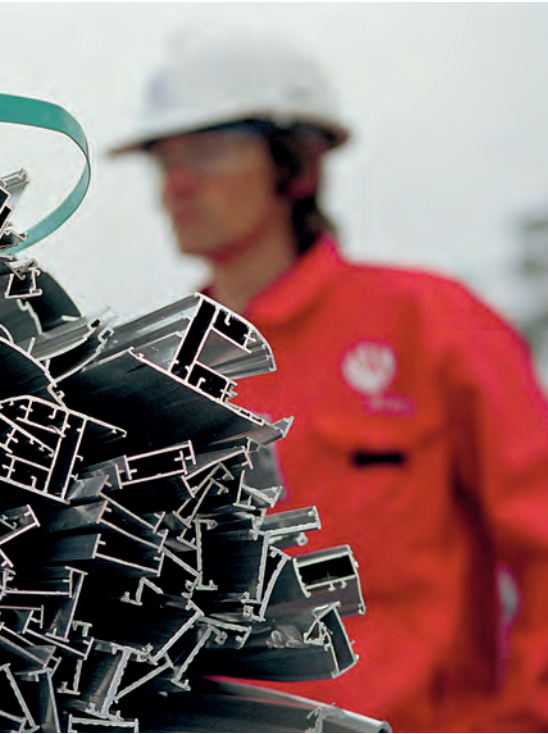
to Scharf-Bergmann, collection of post-consumer scrap will see steep growth from around 10 million tonnes in 2010 to more than 20 million tonnes by 2030. He estimates the annual growth rate for recycling production at 4.2% whereas primary production will climb by 3.9%. 'However, due to the forecast growth of aluminium demand, global recycling content of post-consumer scrap in products is not expected to exceed 25% until 2030,' he stated. His assessment matched the figures presented

'China simply offers guaranteed markets and better pricing than other countries.'

to the congress by Katy Tsesmelis, manager - materials stewardship at the IAI. The institute is assuming that around two-thirds of demand will be satisfied from primary sources for the foreseeable future - up from 40 million tonnes in 2010 to over 70 million tonnes by 2020.

China tops the class

There can be no doubt that China will top the class when it comes to domestic scrap genera-



tion; indeed, the country is expected to generate volumes of new and old aluminium scrap of which developed countries in the western hemisphere can only dream. By 2022, China's domestic scrap supply will hit the 20 million tonnes mark, according to Scharf-Bergmann. But even these epic domestic scrap volumes will not satisfy China's fast-growing domestic appetite for aluminium.

'While China consumed around 2.9 million tonnes in 2000, it accounted for around 19.4 million tonnes in 2011,' the approximately 120 congress participants in Düsseldorf were told by Dr Peter Dahmen, managing director of Schoof & Haslacher in Germany and senior vice president of the BIR world recycling organisation's Non-Ferrous Metals Division. 'In other words, China increased its share of global aluminium consumption within a decade from 17.7% to 43.2%.'

New report from BIR

Quoting from a soon-to-be-published report prepared for BIR by CRU Strategies, he added: 'Along with the increase in demand, global scrap consumption went up by around 7.4 million tonnes per year between 2000 and 2011. Six million tonnes of this increase were coming from China.' The aim of the study, he said, had been to achieve a better understanding of global scrap flows, concentrating initially on alumin-

ium and copper. He emphasised that the study would be an ongoing process which would lead to refreshed statistics over the coming years.

The BIR data confirm China as the undisputed king of scrap imports. Or as Dr Dahmen put it: 'If you talk about scrap flows around the world, you are talking about China.' This is most likely to remain the case for a long time to come. 'It is not foreseeable today if or when China will generate sufficient of its own scrap so that the pressure to import might be reduced,' he said. CRU had attempted to identify this tipping point for steel scrap and foresaw this would occur in the late 2020s; however, the analyst has made no such guess in relation to aluminium scrap.

Astonishingly low

'China's main suppliers are North America and Europe,' Dr Dahmen continued. 'Since 2005, when Europe accounted for 25% of China's total import volume, Europe's importance has been reduced to 18% of total import volume in 2011.' The lion's share of China's aluminium scrap today comes from North America, which accounted for 27% of its total import volume in 2000, rising to 48% in 2005 and to a massive 68% in 2011. 'We can clearly see that North America prefers to sell to China, while exports to India, for example, are astonishingly low,' observed Dr Dahmen from the BIR data.

The explanation for this clear preference was provided by Nicholas Adams, vice president of The Aluminium Association. 'The Institute of Scrap Recycling Industries (ISRI) has been working hard for many years to develop markets in China,' explained the man who manages the association's statistics programmes and is also responsible for its membership development. 'China simply offers guaranteed markets and better pricing than other countries,' he contended. 'In fact, 91% of North America's total exports are destined for East Asia.'

Regarding a comparison of Europe and North America as the two most important export regions of the world, Dr Dahmen noted: 'It is amazing to see the increase in export volumes from North America during the last decade.' In the year 2000, North America exported less tonnage than Europe; scrap was mainly used within the region. 'From 2000 onwards, you see a tremendous increase,' he pointed out. 'Export figures tripled between 2000 and 2005, and more than doubled between 2005 and 2011.' But last year, according to Adams, US scrap exports

fell by 3.9% to 2 million tonnes - possibly the result of higher domestic prices for aluminium scrap and increased domestic consumption.

Automotive drives the markets

Preliminary estimates indicate that aluminium consumption in the USA and Canada totalled 8.8 million tonnes in 2012, an increase of 6.1% compared to the previous year. 'Since reaching a low of 6.8 million tonnes in 2009, consumption has grown by 27%,' said Adams. The main drivers of this rising consumption are the car and light truck markets, as well as the construction sector. Scrap is critical to aluminium supply in North America, the speaker stressed. Compared to 2011, consumption of scrap was up 10.1% last year to an estimated 4.4 million tonnes such that secondary aluminium accounts for almost 40% of light metal supply.

Unlike Adams, who appears not to regard exports of aluminium scrap as a big issue, consumers in Europe are greatly concerned about shipments to emerging markets. Between 2000 and 2005, exports jumped 88% from 379 000 to 713 000 tonnes, Dr Dahmen noted in his presentation. But since then, export growth has slowed to give a total of 936 000 tonnes for 2011 - 'which still is a lot of material,' he said. That was also the opinion of session chairman Christian Wellner, managing director of the German Aluminium Industry Association (GDA), whose comment on the BIR data was: 'Apparently, we are talking about huge scrap tourism.'

Reassuring conclusion

But Dr Dahmen drew another picture, saying that Europe is still consuming much more of its own scrap. 'We have 2.87 million tonnes of volume traded inside Europe,' he pointed out. This means that 75% of generated aluminium scrap is traded and remelted within the continent.



Remelting aluminium scrap at the Hydro plant in Clervaux, Luxembourg.

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Mattia Pellegrini: 'The aluminium industry is to undergo a sectoral fitness check.'



Nicholas Adams: '91% of North America's total exports are destined for East Asia.'

Figures provided by the OEA speak a similar language: scrap consumption in Europe increased from 3.5 million tonnes in the year 2000 to 4.2 million tonnes in 2005 and thence to 4.5 million tonnes in 2011. In the meantime, scrap exports increased from around 10% of total scrap availability in 2000 to 15% in 2005 and to 17% in 2011. Dr Dahmen offered the reassuring conclusion: 'We have a considerable

'If you talk about scrap flows around the world, you are talking about China.'

export quantity, but we still can state a slow-down of exports in recent years.' In spite of these data, there is continuing unease within industrial and political circles about the outflow of raw material resources and the problems relating to commodity dependence. 'Europe exports more and more aluminium scrap,' insisted Mattia Pellegrini, the European Commission's special adviser on raw materials. Focusing on the sustainable supply of raw materials from European sources, the Commission has charged consultants with the task of investigating this matter and the results will be published very shortly, he announced. But Pellegrini also revealed the main finding of the upcoming study: 'The consultants recommended the EU Commission to establish a certification system because not all third parties outside Europe are operating environmentally soundly.'

Raw materials partnership

Pellegrini also announced three other items of news from Brussels, including firstly a partnership on raw materials. 'One big item in this

partnership is how to improve recycling,' he explained. Part of this project involves building pilot plants covering the whole value chain. Secondly, there is to be a new strategy for sustainable construction, and finally the aluminium industry is to undergo a sectoral fitness check - in effect, an assessment of the cumulative impacts of different regulations on the industry. 'You have the privilege of being one of the first industries (to be checked in this way),' Pellegrini told the audience.

But Pellegrini's words drew instant criticism. Maarten Labberton, director of the Packaging Group of the European Aluminium Association (EAA), said: 'The EU Commission should better work on achieving higher recycling rates and on better reporting by the member states, to measure the real recycling rates.'

Advances in technology

Increasing fuel costs, the requirements to increase productivity and strong competition are encouraging - or rather compelling - aluminium recyclers to use ever more efficient technologies. 'We have to invest time and money to improve recycling, and scrap quality must also improve through better sorting processes,' urged Scharf-Bergmann. 'The transport sector, which is a large consumer of secondary foundry alloys, will not be able to consume downcycled scrap from other markets long term.'

In order to ensure that all collected scrap will be recycled, the aluminium industry is already developing more recycling-friendly alloys and products. And at a technical session arranged for the OEA congress, details of some state-of-the-art recycling technologies were also presented. For example, Air Liquide outlined its BoostAL concept - a new oxyfuel technology linking an advanced process control system with high-performance oxy burners. This combustion technology provides secondary aluminium recyclers with the scope to reduce energy consumption and to optimise their manufacturing processes through implementation of fully-integrated clean technologies, the company said. BoostAL can address the needs of recyclers who are melting various qualities of scraps - even those with high organic material content, it was said.

For more than a decade, Hertwich Engineering has been developing melting solutions for different types of scrap and has introduced the Ecomelt range of furnaces. 'Our multi-chamber

furnaces are designed to accept a wide range of post-consumer and light-gauge scrap, and to efficiently recycle the product into molten metal,' explained Hertwich's managing director Franz Niedermair. The Ecomelt PS is the third and latest generation of this furnace family; in addition, Hertwich has developed the co-flow drier for small pieces of scrap and swarf.

Sorting developments

Tomra Sorting and Thermo Fisher Scientific are particularly active in the field of sorting technologies. The former develops and supplies a variety of sensor-based sorting options, such as near-infrared or X-ray systems designed for a range of separation applications in the recycling sector. 'In the aluminium recycling business, the main target is the delivery of aluminium from recycled aluminium for smelters,' explained Christian Pak, sales engineer for the German and Nordic countries at Tomra Sorting. The main applications for Tomra Sorting's TiTech sorting systems are reduction of contaminants such as heavy metals, including zinc, copper, brass and lead, alloys with heavy metals and organics such as plastics or wood. The exact composition of post-consumer scrap is often unknown. Therefore, additional characterisation steps are needed at the beginning of the sorting process in order to prevent undesired elements from entering the melt. Thermo Fisher Scientific has developed hand-held devices offering the potential for portable X-ray fluorescence (XRF) testing and analysis. 'Hand-held XRF is currently used by aluminium manufacturers and scrap yard operators to



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Schoof & Haslacher's Dr Peter Dahmen: 'China increased its share of global aluminium consumption within a decade from 17.7% to 43.2%.'



Jonathan Margalit: 'Thanks to technological advancements in hand-held XRF, light element measurement capabilities have improved significantly.'

determine alloy grade and chemical composition,' reported Jonathan Margalit, business development manager for Thermo Scientific Portable Analytical Instruments. 'Thanks to technological advancements in hand-held XRF, light element measurement capabilities such as for magnesium, aluminium, silicon, phosphorus or sulphur have improved significantly.'

Limits yet to be reached

Listening to details of all the efforts currently being made to improve recycling efficiency, OEA secretary general Günter Kirchner expressed the optimistic view that research and development would continue to yield progress.

'Aluminium recycling has by no means yet reached the limits,' he declared.

With 30 years of experience as secretary general of the OEA and as managing director of Germany's VAR aluminium recycling industry organisation, perhaps no-one is better placed to make such a statement than Kirchner, who will retire on April 1 this year. Former head of global public affairs at Philips, Dr Gerd Götz, will become the OEA's new secretary general on that date and has already begun his work as director general of the EAA.

Kirchner is also convinced the striving of EU member states and of the European Commission towards optimised resource efficiency and towards establishing a recycling society will place additional pressure on the aluminium industry to improve recycling beyond existing levels - 'especially because aluminium scrap is not growing on trees,' he observed

As regards how much aluminium is theoretically available for recycling, around 2.7 million tonnes of light metal is used for deoxidation purposes and as such is becoming lost, Kirchner noted. Additional losses cannot be avoided because, for example, the aluminium scrap in space or deep in the sea is beyond the reach of

been conducted, a large pool of knowledge exists about aluminium in applications such as the automotive or construction industries. However, far less is known about how much aluminium is used in households, offices or small companies, and how much of this material is actually recycled. Therefore, the OEA has initiated a study entitled 'Comprehensive recycling of end-of-life aluminium products.'

'Aluminium recycling has by no means yet reached the limits.'

'Due to the great number of aluminium products in households and the difficulties of investigating the inside of households, we examined the efficiency of existing collection systems for municipal waste,' explained Kirchner. Three case studies in three different countries have shown that aluminium in households can only be recycled to a high level through a sophisticated collection system and the willingness of householders, office managers and small companies to provide active support for the recycling of this metal.

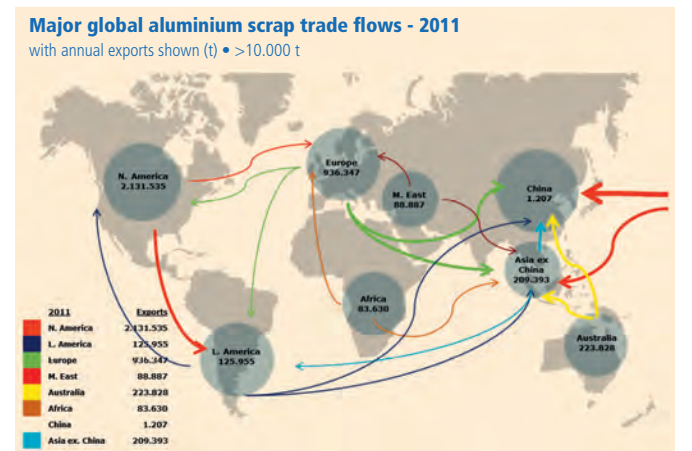
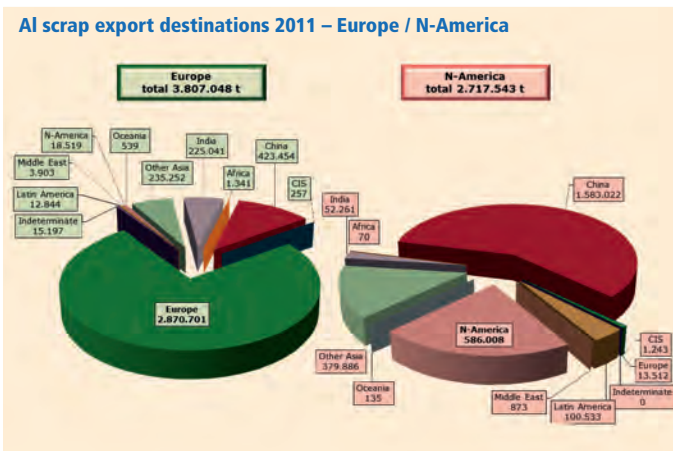
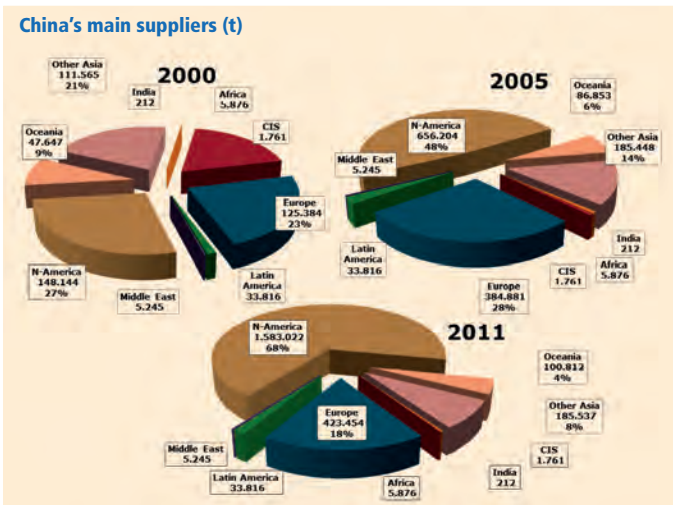
the recycling industry. 'Besides these special cases of unavoidable metal loss, the recycling potential of all other applications of aluminium and the recycled volumes needs to be examined,' stressed the OEA's secretary general.

OEA study

Owing to the many related studies to have

Currently, efforts are being undertaken by a large number of market players to ensure the supply of secondary raw materials to the aluminium industry. But all the evidence tends to suggest that scrap consumers in Europe and North America will compete increasingly with consumers in China and the Far East. Another element could tilt the balance in favour of developing countries, namely the rising cost of producing primary aluminium in the developed world.

But whatever the future holds in this regard, it can be stated with certainty that aluminium scrap will become an ever more desirable, useful and strategic raw material. □



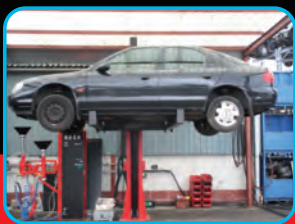
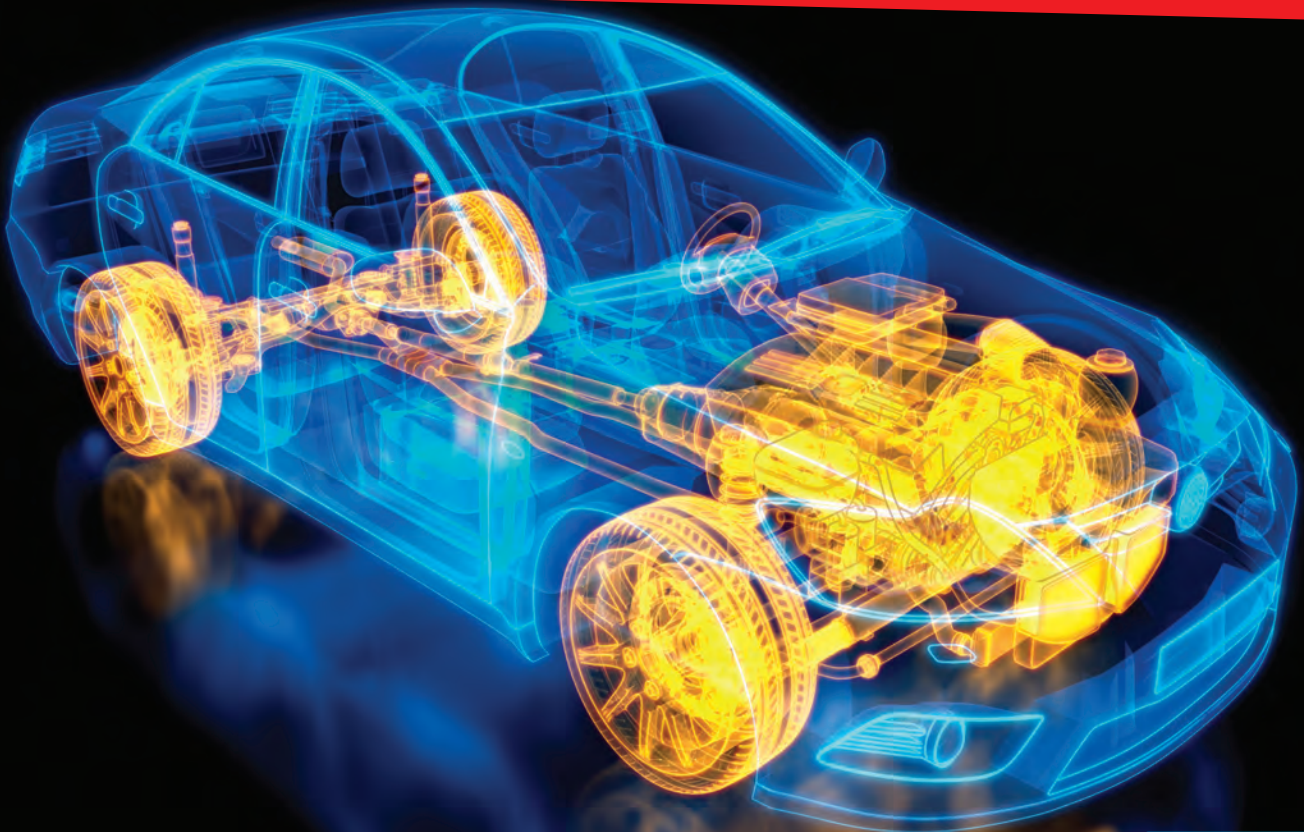


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Ferrous

Closed: March 5 2013

Supply under strain

All the talk at the time of writing is about how strained scrap availability could or should affect prices in the immediate future. For the moment, however, latest cfr indications for shipments from Europe to Turkey are unchanged from our previous report at: 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.



With regard to the key Turkish market, spates of steel scrap buying activity in February have helped broadly to preserve the price levels discussed in our previous report. At the time of writing, the most recent US sales were concluded above US\$ 400 per tonne for both HMS I/II 80/20 and shredded scrap, with European suppli-

ers following a few dollars off this pace. Without doubt, concerns over availability have bolstered price expectations among scrap sellers. Animated trading activity had seen Turkish mills secure around two dozen scrap cargoes from US and European suppliers in the early weeks of January. However, buying interest waned, lead-

ing to lower prices when subsequent trades were completed around the turn of the month. For example, a US exporter recouped US\$ 397 per tonne on a cif basis for a sale of HMS I/II 80/20 scrap compared to values some US\$ 10 higher earlier in January. February brought further price weakness as the same grade from the USA found buyers in Turkey at either side of US\$ 390 per tonne while shredded scrap was commanding around the US\$ 395 mark. Meanwhile, HMS I/II 80/20 out of Northern Europe was reportedly finding a home in Turkey at only around US\$ 380 per tonne on a cfr basis - at least US\$ 10 shy of the values noted in our report of late January.

Slow to recover

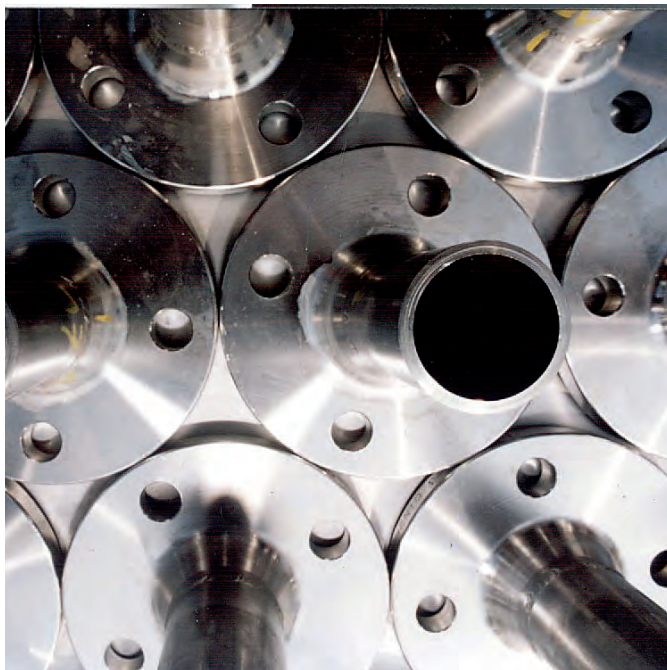
Turkey's purchasing momentum began to return as February progressed, with more than a dozen deals concluded towards the end of the first full week of the month. European exporters were handed a slight advantage by the fact that the Euro had been weakening in relation to the US dollar. Values were slow to recover despite the widespread belief that upward price progress was

inevitable owing to, in part, the strengthening iron ore market and more encouraging news from China's steel sector.

At around mid-month, the HMS I/II 80/20 scrap mix from European sources was once again said to be attracting US\$ 390 per tonne on a cfr Turkey basis. And shortly afterwards, US sellers obtained prices from Turkish mills of between US\$ 400 and US\$ 405 per tonne cfr for the same grade.

At the time of writing, bookings by Turkish mills have slowed significantly although the most recent deals suggest HMS I/II 80/20 scrap out of the USA is maintaining its price level just above the US\$ 400 per tonne threshold. The most recent transaction involving a Turkish buyer, however, has been for A3 scrap from Romania at a price of around US\$ 387 per tonne on a cfr basis. Chinese mill buyers did not make an immediate splash in the international scrap market following the end of their New Year holidays, with many considering prices to be too high.

Around the turn of the month, shipments of shredded scrap in containers to India were commanding typically





Mexican steel scrap imports to surge

Mexico will become a far bigger player on the international scrap market over the next few years if an assessment aired at AMM's late-January Mexican Steel Forum in Monterrey proves to be correct.

Claudio Gonzalez Carrillo, a mechanical engineer at Toluca-based recycling company Reciclacentro, contended that the country's scrap imports could rise from around 700 000 tonnes last year to nearer 4 million tonnes by 2016 in response to rapid growth in domestic steel production. The momentum will take time to develop, however, with the main spike expected to occur in 2015 and 2016.

According to World Steel Association data, Mexico's crude steel output climbed 0.4% last year to 18.18 million tonnes, following on from a year-on-year increase of almost 8% in 2011; however, the total is predicted to surge beyond 24 million tonnes by 2016. Carrillo argued that domestic generation of obsolete and prime scrap would record only small gains over the next three to four years, thus creating a substantially higher demand for imports.

The vast majority of Mexico's steel scrap imports originate from the USA: in its recent statistical review, the BIR world recycling organisation noted that trade along this route soared 30.7% in the first nine months of last year to 566 000 tonnes.

US\$ 420-425 per tonne cfr Nhava Sheva. On the domestic front in the USA, HMS and shredded scrap prices fell between US\$ 10-20 per gross ton in early February as a consequence of patchy export demand and a more sluggish performance by the home steel mills. But by early March, hopes were fixed firmly on a return to the higher price levels witnessed in the first month of the year, with some bolder experts even predicting new highs for the year as hikes of up to US\$ 50 per ton were being sought in some quarters.

US exports fall

Crunching the numbers, monthly US exports of ferrous scrap headed higher in December for the first time since August - although the total of 1.605 million tonnes was still more than 3% lower than the 1.661 million tonnes shipped overseas in the final month of 2011. US Commerce Department statistics have revealed that leading buyer Turkey purchased 415 514 tonnes in December 2012 for a year-on-year decline of around 12% whereas Chinese purchases of US ferrous scrap soared from 102 807 tonnes in November last year

to 198 856 tonnes the following month; in the concluding month of 2011, US exports to China had totalled 188 371 tonnes. Also in December, Taiwan took 270 646 tonnes of US ferrous scrap for a 17.5% increase over the November figure whereas South Korea's purchases slid almost 15% month on month to 94 468 tonnes. US exports of all ferrous scrap, including stainless steel and alloy steel scrap, fell 12% to 21.4 million tonnes last year, with overseas shipments of shredded declining 22%; meanwhile, the value of these exports tumbled 17% to US\$ 9.4 billion. The USA supplied China with approaching 2.3 million tonnes less ferrous scrap last year when compared to 2011 whereas its shipments to Turkey soared by more than three quarters of a million tonnes to 6.4 million tonnes. Returning to 2013, latest customs data reveal that China imported 489 919 tonnes of ferrous scrap in January for a 16.4% increase over the opening month of 2012 but a decline of approaching 1% month on month. Japan was the top supplier although its shipment volume of 262 724 tonnes represented a drop

of more than 36% from the same month last year. Using the same comparison, exports to China from the USA leapt 420% to 78 960 tonnes while supplies from Australia climbed even more sharply to 83 312 tonnes.

Competing commodities

In early February, iron ore prices maintained their strong start to 2013, with prices for 63.5% Fe Indian fines once again hitting US\$ 160 per tonne on a cfr China basis around the middle of the month. Latterly, however, a fall-off in the equities markets and generally weaker sentiment within China has prompted a fall to around US\$ 150 per tonne at the time of writing. Sentiment will not have been improved by the suggestion from UBS analyst Tom Price that spot iron ore prices could slump as low as US\$ 70 per tonne cfr China in the third quarter of this year, partly on the back of increased supply. However, he also insisted to Steel First that, spot pricing aside, his bank's prediction for average iron ore prices in the third quarter remains unchanged at US\$ 113 per tonne fob.

The interrelation between ferrous scrap and iron ore was highlighted at the Mining Indaba conference in Cape Town, South Africa, in early February. Diedrik Tas of consulting firm McKinsey predicted that an increase in Chinese ferrous scrap consumption would cap growth in the iron ore market from the year 2020.

In this same context, CRU Strategies' managing consultant Christopher Stobart told the BIR world recycling organisation's 2012 Autumn Convention that, during the next decade, China was likely to reach a point on its growth curve where it would begin to become more self-sufficient in ferrous scrap,



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Turkey bucks the scrap use downtrend

China produced an all-conquering 716.5 million tonnes of crude steel last year, and yet statistics covering the first nine months of 2012 have revealed a steep downturn in Chinese mills' usage of steel scrap.

In his latest 'World Steel Recycling in Figures' report for the BIR Ferrous Division, Rolf Willeke highlights the fact that China's steel scrap consumption tumbled 16.9% to 60.6 million tonnes when comparing January-September 2012 with the corresponding period of the previous year - and yet the country's crude steel production was 1.7% higher at 542.34 million tonnes over the same period. Chinese imports of steel scrap fell an even sharper 18.4% to 3.896 million tonnes.

Making the same nine-month comparison, steel scrap usage recorded falls of 6.7% to 72.012 million tonnes in the EU-27, 3.2% to 27.189 million tonnes in Japan, and 3.4% to 15.596 million tonnes in Russia even though its crude steel production climbed some 4.3% to 53.777 million tonnes.

Not for the first time, Turkey bucked this generally downward trend by recording steel scrap consumption growth of 9.7% to 24.735 million tonnes in January-September last year - an increase which was greater than the growth in domestic crude steel production (+8.4% to 27.153 million tonnes). The country's overseas purchases of steel scrap surged 7.7% to 16.856 million tonnes in the first three quarters of last year.

US steel scrap usage also increased over the period - by 2.2% to 42.5 million tonnes. The same nation's exports slid 10.7% 'from the high figure of the first nine months of 2011' to 16.938 million tonnes, notes Willeke. However, the USA remained the world's leading exporter of steel scrap despite the 7.3% increase registered by the EU to 14.791 million tonnes. Japan's steel scrap export volumes jumped 64.4% to 6.173 million tonnes in the first nine months of 2012.

experiencing a considerable acceleration in domestic supply and perhaps even developing into a scrap exporter. Back in Cape Town, Tas forecast that the steel industry would require 800 million tonnes of new iron ore supply by 2020 but that iron ore overcapacity will persist as new projects come on stream. He predicted that long-term iron ore prices would occupy the range of US\$ 105-145 per tonne cif China. After achieving a record-high monthly total of 70.91 million tonnes in December, Chinese imports of iron ore dropped back to 65.54 million tonnes in January, according to latest customs statistics. However, the figure for the first month of 2013 was more than 10% higher than that for January 2012.

Steel

Asia propped up world crude steel production in the first month of 2013, with the five of its nations reporting to the World Steel Association (WSA) producing a total of 82.325 million tonnes for a year-on-year increase of 4%. China's output climbed 4.6% to 59.339 million tonnes, while India and Japan recorded increases of 3.8% and 2.7%, respectively, for totals of 6.6 million tonnes and 8.865 million tonnes.

These gains provided the backbone of a 0.8% increase in crude steel output across the 62 countries submitting figures to the WSA; the total of 124.799 million tonnes for all of these nations compared to 123.768 million tonnes for the opening month of 2012. Outside of Asia, year-on-year comparisons yielded almost exclusively negative results. Even Turkey, one of the bastions of steel production growth in recent years, saw its output slump 8.8% in January to 2.859 million tonnes from 3.135 million tonnes in the same month last year. Production in the EU-27 fell 5% to 13.452 million tonnes despite a 5.4% increase in Germany, while output declined by 5.8% in the USA to 7.26 million tonnes and by 6.1% in Brazil to an estimated 2.62 million tonnes.

For South America as a whole, crude steel production fell less sharply - by

3.2% to 3.611 million tonnes. In other regions, the combined output total for Africa and the Middle East amounted to 2.854 million tonnes in January for a year-on-year drop of 2.6% whereas production in Oceania nudged up from 490 000 tonnes in the first month of 2012 to 491 000 tonnes this time round. The crude steel capacity utilisation rate for all of the WSA's reporting countries fell to 71.2% in January from 73.2% in December last year. Compared to January 2012, the decline was a far more substantial 5.5 percentage points.

Higher sales numbers

Moving beyond the WSA stats, more recent American Iron and Steel Institute figures for the final full week of February suggest domestic raw steel production increased to 1.843 million tons for an improved capacity utilisation rate of 76.9%, although year-to-date output remained 7.3% down on 2012 despite the fact that, for example, some of the nation's largest vehicle manufacturers have been returning higher sales numbers for the early part of the year.

In commenting on fourth-quarter and full-year results for 2012, ArcelorMittal's chairman and ceo Lakshmi N. Mittal described last year as 'very difficult' - 'particularly in Europe where demand for steel fell a further 8.8%'. But he added: 'Although we expect the challenges to continue in 2013, largely due to the fragility of the European economy, we have recently seen some more positive indicators, which combined with the measures we have implemented to strengthen the business, are expected to support an improvement in the profitability of our steel business this year.' ArcelorMittal is forecasting that its steel shipments will increase 2-3% this year.

Concern at lower volumes

As for latest results posted by Steel Dynamics in the USA, president and ceo Mark Millett drew attention to a stronger-than-expected metals recycling performance in the fourth quarter. 'Sequential quarterly operating income increased

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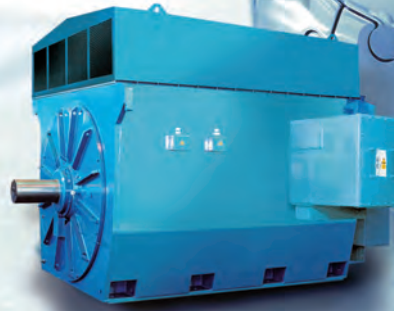


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56% to US\$ 26 million as meaningful improvements in both ferrous and non-ferrous metal spreads more than offset decreased volumes,' he said. 'Increased copper margins provided the most notable improvement, as global copper prices increased based in part on improved demand from China. We also took advantage of a strong December ferrous market environment, increasing our expected shipments.'

The company's steel mill capacity utilisation improved to 80% in the fourth quarter from 78% in the previous three months, while shipments increased

4%. 'The average selling price per ton shipped decreased US\$ 25 to US\$ 784 in the fourth quarter, and the average ferrous scrap cost per ton melted decreased US\$ 9 per ton,' the company explains. For 2012 as a whole, average scrap cost per ton melted dropped US\$ 32.

The importance of the scrap supply issue was underlined by Sims Metal Management's group ceo Daniel W. Dienst in announcing latest financial results. 'While we are beginning to see improving economic fundamentals in our key scrap generating market in the United

States,' he said, 'the translation into stronger scrap volumes remains currently challenged as scrap generation typically lags the fundamentals. Subdued scrap generation, particularly within the consumer segment, negatively impacted sales and margins in the first half (of the current financial year), which was compounded by weaker commodity prices and periods of tepid ferrous scrap demand.' Weak scrap generation and tight margins contributed to a performance for the group's European business which Dienst described as 'an obvious disappointment'.

Outlook

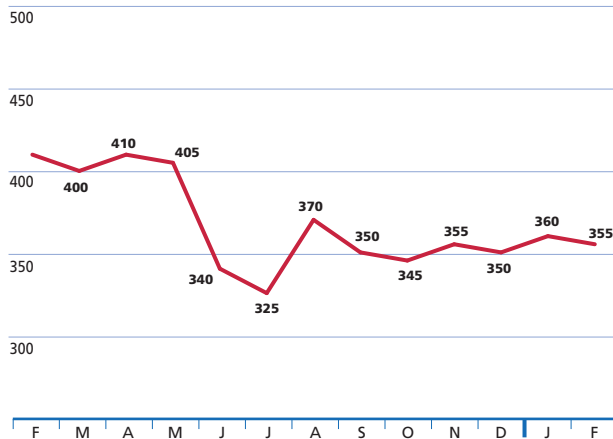
The first quarter of 2013 has offered a compelling example of how the balance of power can shift in scrap buying and selling circles. Following gains in the very early part of the year, our previous report reflected a subsequent swing of the pendulum to the buyer's side. In early March, by contrast, most of the scrap price talk appears to be to the upside as material remains scarce and mills' stocks in some key parts of the world are deemed to be lower than they would like. □

Ferrous Scrap Prices

Reference date: March 5, 2013

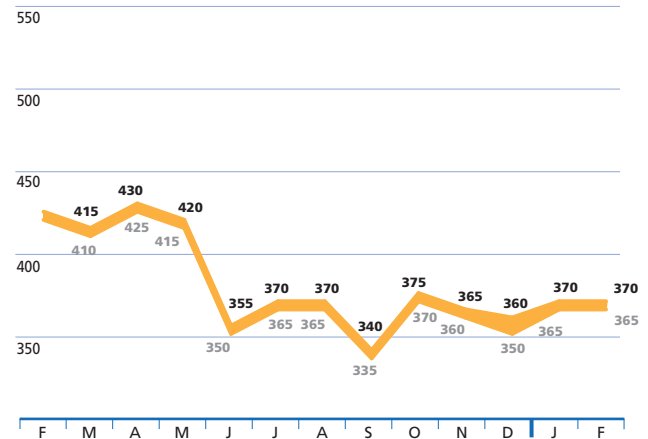
USA Domestic Scrap Prices (US\$/GRT)

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



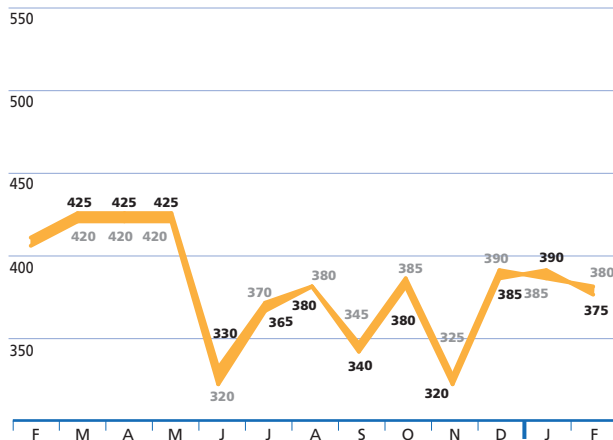
Fob Rotterdam Export Prices (US\$/t)

HMS 80/20 heavy steel scrap



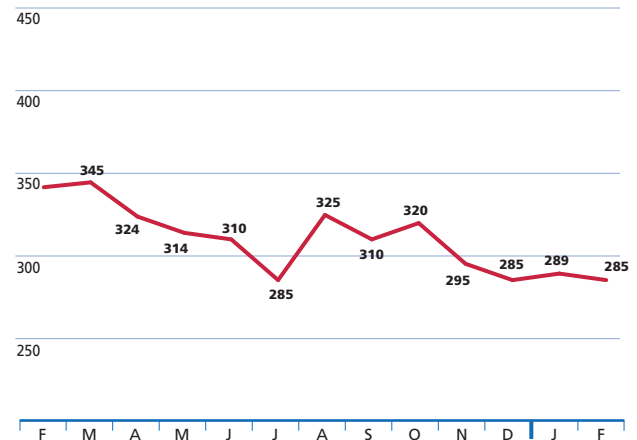
USA Export Prices (US\$/GRT)

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: March 4 2013

Disappointment follows short-lived euphoria

Price progress has quickly evaporated to leave stainless steel scrap values at levels somewhat lower than those recorded at the time of our previous report. The price range for the 304 quality has declined from US\$ 1730-1780 per tonne to US\$ 1640-1690, while the 316 grade has seen a drop from US\$ 2480-2530 to US\$ 2300-2350. Values for 409 and 430 chrome scrap have slid to, respectively, US\$ 410-450 per tonne from US\$ 440-480 and to US\$ 490-530 from US\$ 520-560.



The markets have been brought down to earth with a bump following a short period in which nickel prices surged to almost US\$ 19 000 per tonne, driving up stainless steel scrap values to US\$ 1870 per tonne for the 304 grade and to US\$ 2720 for the 316 quality. By late February, with the Euro/US dollar exchange rate back at 1.31 from 1.36, prices for the 304 grade had fallen back to US\$ 1640-

1690 per tonne while 316 values had dropped to US\$ 2300-2350.

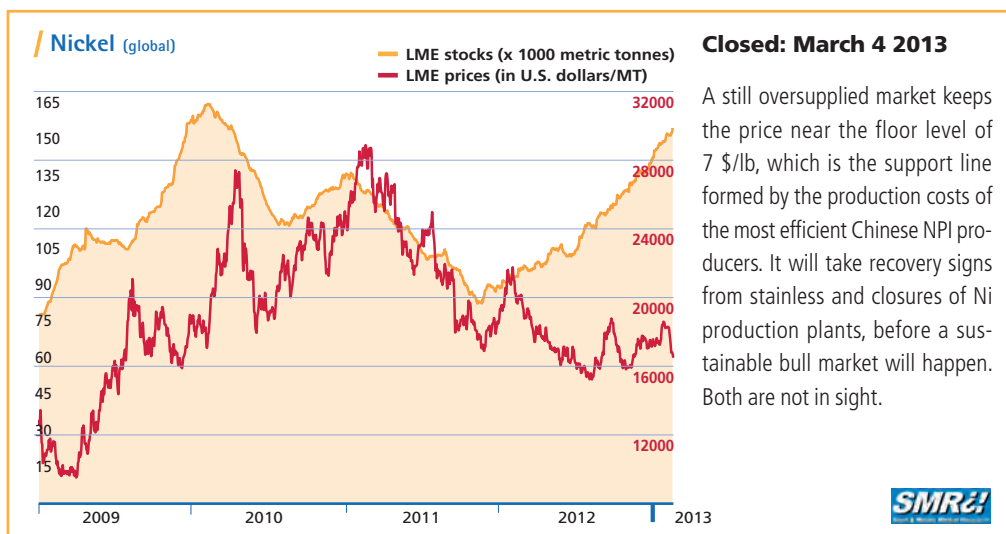
And owing to a lack of demand coupled with lower steel scrap prices, chrome scrap values also declined: the 409 grade has been fetching US\$ 410-450 per tonne and the 430 quality nearer US\$ 490-530 at the time of writing.

Constructive chart patterns had helped to rally nickel in early February but prices fell sharply later in the month as

a result of a stronger US dollar, as well as fresh concerns about growth and reforms in Europe, and chart-based selling as buyers took to the sidelines. The nickel market registered a low of US\$ 16 500 per tonne, and no real prospects of an imminent recovery have been apparent of late.

Adequately supplied

As a result of a divided global economic picture and weak fundamentals, prices are now trading below the important long-term moving averages, which could serve to cap any rallies. Although Norilsk Nickel - the world's largest nickel producer - has announced plans for an 8.4% cut in its nickel production for this year, the market seems to be adequately supplied considering: last year's surplus of 86 300 tonnes (a revised figure from the International Nickel Study Group); rising nickel stocks on the LME which currently exceed 155 000 tonnes; and stainless steel production figures which continue to be poor, particularly in the EU-27. According to Heinz H. Pariser Alloy Met-





als & Steel Market Research, the EU-27's crude stainless steel production declined by 1.5% in 2012, with output collapsing more than 12% in Germany alone. The leading analyst expects global stainless steel production to have totalled 35.118 million tonnes last year for an increase of 3% over 2011. The production forecast for the current year is 36.71 million tonnes, which would be equivalent to an increase of 4.5% over 2012; for 2014, the analyst believes production will grow some 6.2% to 38.986 million tonnes.

Uncertainty for chrome

The chrome market can best be described as uncertain. While buying interest is slowing in Asia and North America, European ferro-chrome prices have started to increase - although the cause is not certain. European tags for both high carbon and charge chrome had moved above US\$ 1 per lb by the middle of February. At the time of writing, market players do not seem to have a clear picture of likely future developments.

Meanwhile, Heinz H. Pariser Alloy Metals & Steel Market Research has reported that ferro-chrome production in South Africa was running 2.2% lower at the end of November last year.

Europe

At present, hardly any trading is taking place in the nickel market; prices are generally moving sideways and recently slightly downwards. Demand for both primary material and alloyed scrap remains weak.

In Germany, nickel cathode prices have fallen more than US\$ 400 per tonne of late to be traded at US\$ 17 055. As for alloyed scrap, V2A (304) has been yielding around US\$ 1702 per tonne and V4A (316) has been trading nearer US\$ 2370 of late in Germany.

China and elsewhere in Asia

The nickel price on the Shanghai spot market stood at US\$ 19 682 per tonne around the middle of January and remained stable until the end of the month. In early February, prices climbed to Yuan 131 000 per tonne (US\$ 20 793), mainly on the back of demand from traders looking to stock up ahead of the Chinese New Year holidays. But with little expectation that downstream demand for stainless steel would recover in the short term, nickel prices fell back to Yuan 119 500 per tonne (US\$ 18 968) in the latter part of last month.

In January, Chinese imports of refined nickel and alloys amounted to 21 827 tonnes, a jump of 15% when compared to the previous month and a leap of 71% from the total recorded in the opening month of last year. Total imports in 2012 were 19% higher at 217 500 tonnes. The same country's exports of refined nickel and alloys were 36% lower last year at 35 203 tonnes. Last December, China's nickel production reached a monthly peak for 2012 of 29 174 tonnes - equivalent to an increase of almost 10% from the final month of 2011 and up some 27% from the previous month in 2012. However,

the country's total output of refined nickel fell 9% last year to 272 178 tonnes.

North America

Leading producer Outokumpu is forecasting stainless steel demand growth of 3% in the North American market this year as the company continues the capacity ramp-up at its facility in Calvert, Alabama. The figure compares to 6% consumption growth in the region during 2012 and nearer 2% in the rest of the world.

In announcing Outokumpu's latest results, ceo Mika Seitovirta said the

Inoxum acquisition finalised at the end of last year 'will enable us to reduce our fixed costs significantly' and 'expands our business in both Asia and the Americas, where we see healthier market environments'. But he acknowledged that continued weakness in the markets for stainless steel in Europe and globally meant that 'the starting point for the new Outokumpu is more challenging than we anticipated 12 months ago'. He added: 'We will be implementing the targeted Euro 200 million of synergy savings in a decisive manner and will also be seeking further opportunities to make savings during 2013.' □



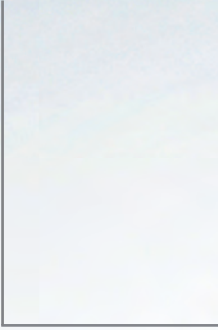
Minor metals

A look at the bigger picture for all minor metals shows that the markets are lacklustre and prices are basically moving sideways, although there have also been reports of some small price falls as a consequence of poor demand. This picture is typical for all alloyed steels at present.

Molybdenum prices have been falling because of slow demand since late January and LME values have declined by some US\$ 1500 per tonne to stand at US\$ 24 000-25 000 at the time of writing. Cobalt prices are at a level that neither discourages consumers from waiting until the last minute to buy nor prevents traders from holding cobalt in stock. As a result, prices have remained stable at US\$ 25 000-25 500 per tonne.

Ferro-titanium (maximum 4.5% Al) has also fallen and was fetching US\$ 7.30-7.40 per kg Ti by early March. Ferro-vanadium is suffering from poor demand and is being traded at US\$ 32-33 per kg V. The ferro-tungsten market is relatively stable, although prices have dipped slightly to US\$ 40.50-41 per kg W.

Experience



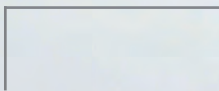
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Non-Ferrous

Closed: March 4 2013

Copper demand no better than 'modest'

With Euro-related issues continuing to have a profound effect on business confidence in Europe, including the supposedly 'strong' European economies of Germany, France and the Netherlands, non-ferrous scrap trading has remained at very low levels, with both supply and demand said to be lower than expected. As per March 4, LME cash prices were at the following per-tonne levels (the corresponding figures from Recycling International's previous non-ferrous metals report of late January are given in brackets): aluminium US\$ 1914.50 (US\$ 2000.50); copper US\$ 7620.50 (US\$ 8020); lead US\$ 2220 (US\$ 2295.50); zinc US\$ 2002 (US\$ 2018); and tin US\$ 23 045 (US\$ 25 020).



Aluminium

The aluminium industry in the EU-leading German economy is rather optimistic, with both producers and processors expecting this year's market conditions to be better than in 2012. For industrial consumer markets such as the automotive and machine-making sectors, growth of 1-2% is being forecast. Staying in Germany, aluminium scrap prices have gained ground in comparison to earlier this year and some grades are currently in short supply. Aluminium wire scrap (Achse) has been quoted at around US\$ 2040 per tonne, while aluminium turnings (Autor) have

been yielding some US\$ 1442. In the UK, prices of commercial pure cuttings have climbed around US\$ 150 per tonne to stand at US\$ 1720-1798 while loose old rolled cuttings are commanding US\$ 1250-1329 and commercial turnings US\$ 1094-1172. In the middle of January, the aluminium price on the Shanghai spot market in China stood at Yuan 14 900 per tonne (US\$ 2365). As a result of growing concerns about the American debt issue and the rising value of the US dollar, prices subsequently came under pressure. This situation was not helped by the fact that downstream business was lacklustre.

The market remained flat until the end of the month, at which point prices started to improve once again to Yuan 14 450 per tonne (US\$ 2293).

Last year brought significant reductions in overseas shipments of aluminium scrap from the USA, latest statistics reveal. Volumes dropped around 5% to just over 2 million tonnes while values fell nearer 14% to just under US\$ 3.5 billion. Chinese purchases of US aluminium scrap were 4.4% lower than recorded in 2011. But in January, China's aluminium scrap purchases from all overseas sources soared 56% year on year to 214 660 tonnes.

According to the International Aluminium Institute, primary aluminium output climbed almost 3% last year to 45.193 million tonnes, with Chinese output leaping 11% to 19.75 million tonnes. US production jumped 4.2% last year to 2.07 million tonnes, the Aluminum Association calculates. Meanwhile, William Adams of Fastmarkets told a late-January 'webinar' hosted by the US Institute of Scrap Recycling Industries that he is anticipating an average aluminium price of US\$ 2150 per tonne for this year.

According to the US Geological Survey,

aluminium recovered from purchased scrap in America increased from around 3 million tons in 2011 to 3.4 million tons the following year.

Global primary aluminium consumption jumped 6% to 47.4 million tonnes in 2012 and a similar increase can be expected this year for a total of around 50 million tonnes, according to leading light metal producer Rusal.

Following a 9.3% increase to 21.8 million tonnes last year, demand growth in China is projected to be particularly strong once again at 9.5%. The 2013 demand increases for India, North America and Russia/CIS are forecast to be, in turn, 6%, 5% and 4% whereas European consumption is expected to drop 2%. US consumption climbed 5.4% last year to 5.9 million tonnes. Rusal also estimates that upwards of 1.5 million tonnes of global aluminium production could be idled this year given that a significant proportion will be at break-even point.

Copper

European demand for copper has remained at modest levels as the trade continues to suffer the impact of lacklustre export orders; in contrast, smelt-





ers are happy to see sufficient scrap available to keep their plants running at full capacity. In Germany, bright wire scrap (Kabul) has been fetching typically US\$ 7813 per tonne, while copper granules 1A (Kasus) has been yielding around US\$ 7839 and non-alloyed bright wire (Kader) some US\$ 7519. On the basis of steady copper quotations, the good availability of copper scrap can be expected to continue while demand from Asia is likely stay at a relatively low level, leading copper producer Aurubis has predicted in its latest results package. 'Sufficient quantities of complex recycling materials are also available,' it adds. 'We thus expect all of Aurubis' recycling capacities to be fully supplied.'

The red metal's fundamentals provide 'a good basis for high copper prices in 2013', the company continues, highlighting the many indications that the global economy will slowly recover. Momentum is expected first and foremost from China, the country with the greatest copper demand; its comprehensive infrastructure programmes and other measures 'involve copper-intensive sectors in particular', the group notes. However, Chinese demand for copper

has remained flat of late and no fundamental change in this situation is envisaged at least in the short term. Around the mid-point of January, the copper price on the Shanghai spot market reached Yuan 57 200 per tonne (US\$ 9108); however, prices were dragged down by concerns over Chinese demand patterns and the limited enthusiasm for purchasing material ahead of the New Year holiday celebrations. Low trading volumes also indicated that both smelters and traders were uncertain about the future direction of the market.

Towards the end of last month, the copper price stood at Yuan 56 800 per tonne (US\$ 9015). Many of China's smelters are low on confidence and are said to be preparing for another round of price cuts in the coming month.

In January, Chinese imports of refined copper were 27% lower than in the opening month of 2012 at 243 174 tonnes owing to a considerable fall in demand for financing refined red metal and to exchange rate considerations. Last year as a whole, China's imports of refined copper surged 20% higher to 3.4 million tonnes. Meanwhile, US exports of copper and copper alloy scrap dipped 4% last year to 1.2 million tonnes whereas associated values tumbled 12% to US\$ 4.4 billion; China cut its purchases from the USA by approximately 6.5%.

According to latest data from the International Copper Study Group, the refined copper market recorded a production surplus of 30 000 tonnes in November last year but a deficit of 513 000 tonnes for the first 11 months of 2012 as a whole - well ahead of the shortfall of 260 000 tonnes in the same period of 2011.

Globally, apparent usage of refined copper grew 3.5% in January-November last year to 18.821 million tonnes, principally as a result of growth in China. Consumption in the EU, the USA and Japan fell a combined 4.4%. World refined production increased by 2.1% in the first 11 months of 2012 to 18.308 million tonnes, with primary

production rising 2% and secondary production from scrap 2.4%. Average world refinery capacity utilisation for January-November last year was 78.7% compared with 80.6% in the same period of the previous year.

Analysts at Macquarie believe the copper price average will slip from US\$ 8700 per tonne in the first quarter of 2013 to US\$ 8300 in quarter two. And according to the Chilean Copper Commission, Cochilco, the copper price will average US\$ 7870 per tonne this year compared to US\$ 7958 in 2012. Global demand for the red metal is expected to climb around 1.5% in 2013 to some 20.3 million tonnes whereas production is predicted to grow at more than twice that rate, resulting in a market surplus of 56 000 tonnes. With production set to increase 2.9% next year and consumption 3.4% to a fraction under 21 million tonnes, Cochilco estimates the surplus for 2014 at 68 000 tonnes.

Lead

Worldwide, supply of refined lead exceeded demand by 64 000 tonnes last year, according to data from the International Lead & Zinc Study Group (ILZSG). Global production edged 0.2% higher to 10.617 million tonnes; output in China was broadly the same as in 2011 while the country's imports of lead contained in lead concentrates soared 26.3% to reach a record high of just over 1 million tonnes. European demand for refined lead fell 2.4% last year but higher demand in India, Japan, Mexico and the USA helped boost overall world usage by 1.3% to 10.553 million tonnes. Apparent demand in China was unchanged from 2011, notes the ILZSG.

China's refined lead production totalled 4.8 million tonnes last year - equivalent to an increase of 4.3% over the 2011 figure. However, the majority of the country's lead smelters are believed to have utilised only around 60% of their capacity in 2012.

Researchers at Macquarie expect the lead price to average US\$ 2400 per

tonne in the first quarter of 2013 but only US\$ 2250 in the ensuing three-month period. LME lead prices have witnessed an increase of late but trade in general has remained weak, with demand for both primary and secondary material falling short of expectations. 'This goes to prove that, in today's markets, LME prices do not necessarily reflect the market fundamentals,' one expert comments.

In the key German market, spot prices for new soft lead stood recently at around US\$ 2625 per tonne while soft lead scrap (Paket) has been trading at around US\$ 2010.

Zinc

Zinc continues to suffer from the problems of a huge oversupply in global markets and of hardly any demand to match it.

For a sixth consecutive year, the refined zinc market recorded a surplus in 2012. Global output dipped 3.5% to 12.66 million tonnes while demand slid 2.8% to 12.395 million tonnes - 'principally a consequence of falls in usage in Europe and China of 6.8% and 3.2%, respectively', states the International Lead & Zinc Study Group (ILZSG). Demand was also lower last year in



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Japan and the USA whereas significant increases were recorded in India, South Korea and Turkey.

Chinese imports of zinc contained in zinc concentrates tumbled 34% to 821 000 tonnes last year but the country's net imports of refined zinc leapt 68.5% to 509 000 tonnes, the ILZSG reveals.

The zinc price on the Shanghai spot market was hovering around US\$ 2380 per tonne in the middle of January owing to high inventories and low trading volumes. Since then, downstream demand has remained lifeless and the domestic market in China has continued in surplus, prompting both smelt-

ers and traders to play a wait-and-see game. The order situation has not been helped by the fact that the global economy is still locked in a state of uncertainty; at the same time, most experts are pessimistic about economy-boosting policies currently on the table. Recently, the zinc price in China stood at a little over Yuan 15 000 per tonne (US\$ 2412).

In January, Chinese imports of refined zinc were 70% higher than in December at 50 093 tonnes; total imports in 2012 soared 265% year on year to 669 549 tonnes. But with firmer controls over bank loans, its purchasing of refined zinc

from other countries has been dampened. Meanwhile, China operated at around 77% of its zinc production capacity in December last year, driven mainly by relatively high prices as well as the conclusion of repair and maintenance work at large smelters.

Although zinc consumption in most European countries can be deemed satisfactory, there is simply too much material overhanging the market to generate higher prices. However, it should also be stated that the zinc trade is not unhappy with current price levels; last year's developments showed that processors were barely

able to pass on higher zinc prices to their customers, leading to pressure throughout the market.

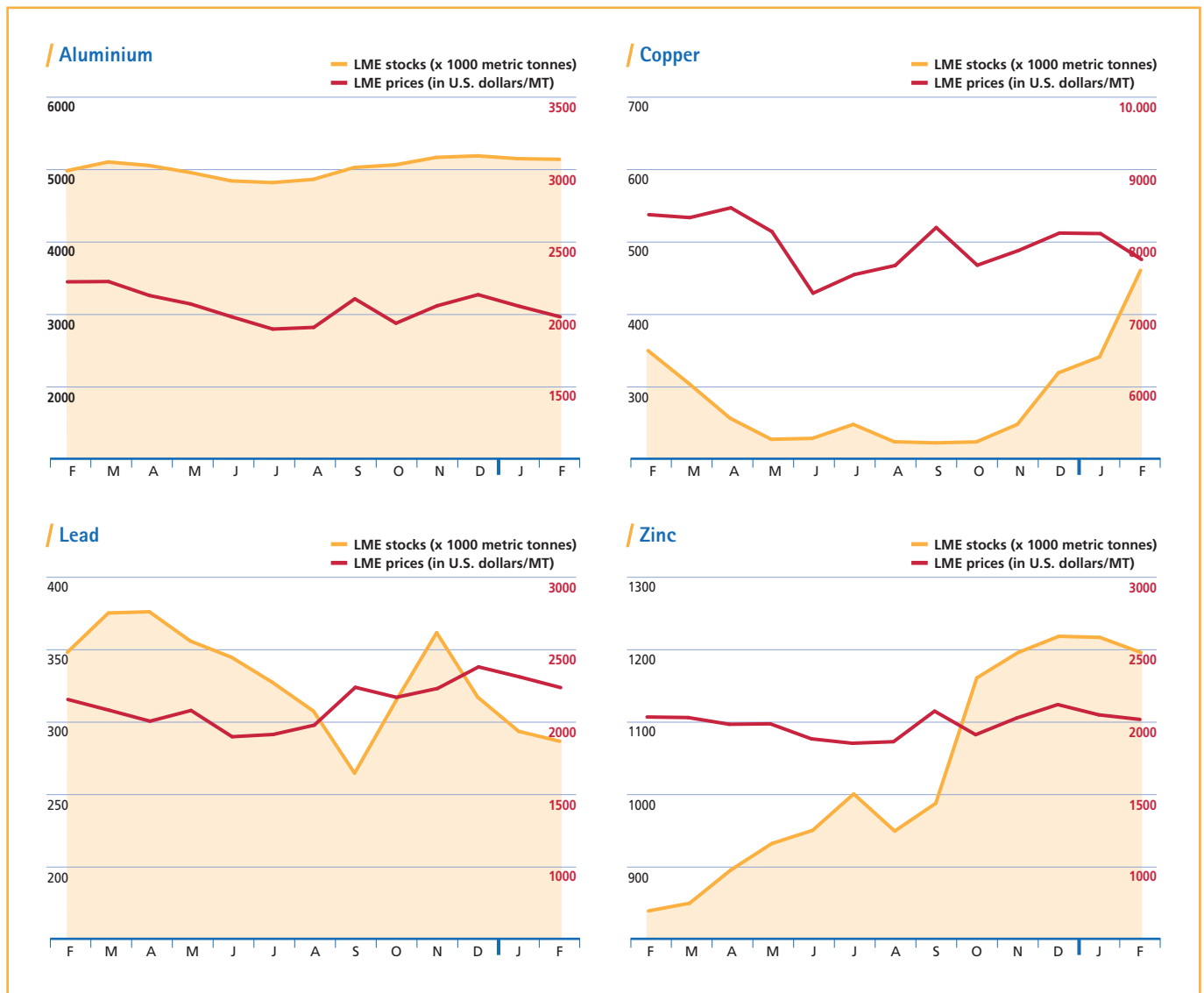
In Germany, high-grade zinc has been attracting typically US\$ 2323 per tonne of late, while old zinc scrap (Zebra) has been operating at around US\$ 1509. □

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: March 4 2013



Paper

Closed: March 4 2013

Dispute settlement lifts supply fears

After many weeks of uncertainty, the threat of a strike affecting US East Coast and Gulf ports has finally been erased. However, many variables continue to stalk the markets, not the least of which is to what extent shipping lines will be successful in pushing through proposed freight rate hikes. Furthermore, the Chinese authorities appear to be clamping down even harder on recovered paper quality.



Europe Brake on supply

Once again, difficult weather conditions and reduced economic activity have put a brake on lower grade volumes arriving at merchant processors. In Europe, mills basically kept their prices stable in February. As for the Far East, OCC prices have tended to rise along with buying activity after the Chinese New Year holidays, with mixed paper following a similar course. Demand is healthy within Europe and for the Far East at a time when not much OCC is available. Freight rates are shrouded in uncertainty given that the shipping lines have announced higher prices but nothing has been confirmed as yet. Meanwhile, obtaining vessel space seems to have become slightly easier of late. In certain Chinese ports, very

strict quality controls are being applied, resulting in additional costs and longer waiting times.

Demand for the deinking grades of recovered paper is also good within Europe; additionally, there is some demand from Asia, albeit at low prices. Reasonable to good orders have been coming forward in Europe for the middle grades. Decent bookings are also being made for India and other Asian destinations - but, once again, at slightly lower prices. European prices have tended to stabilise or rise slightly, not least because incoming volumes have been rather low owing to reduced economic activity. For shipments to India, freight rates appear to have stabilised and container availability is becoming less tense. Once again for the higher grades of recovered paper, there is not much material available and prices are either stable or heading higher on the back of good demand.

In general, the US dollar has been influencing prices and demand in the recovered paper sector.

North America No downturn expected

Finally, the possibility of a strike at US East Coast and Gulf ports has been

removed following agreement of a long-term contract between longshoremen and port authorities.

The OCC and DLK markets have been gradually heating up, especially in export waters.

Buying prices for shipments to China have slowly increased over the first few days of March. It is expected that prices will level off and then remain constant for the next month. Domestic markets also continue to be firm, with no downturn in prices expected.

The woodfree deinking grades and pulp substitutes are moving steadily in both the domestic and export markets. American Forest & Paper Association figures reveal that domestic consumption of recovered paper fell 1% in December to 2.38 million short tons and by some 3% across 2012 as a whole. Meanwhile, US recovered paper export volumes dropped 4% last year to 22.3 million short tons while shipment values fell an even steeper 9% to US\$ 3.46 billion. Exports of the pulp substitutes plummeted 30% last year to 1.5 million short tons - the same percentage as the decline in the overall value of US shipments to Canada and Mexico. US deliveries to China edged just 1% lower in 2012 to around 15.7 million short tons.

Asia Advantage taken

The first half of February brought rather slow trading conditions as Chinese mills abstained from buying owing to the Chinese New Year celebrations. Indonesia, India and Pakistan took advantage of this quiet period and were able to buy good volumes at low prices. As expected after the Chinese holidays, domestic mills made a rather aggressive re-entry into the market and caused prices to climb US\$ 10-15 per tonne.

One of the largest collection plants in the Netherlands is being accused by the Dutch authorities of shipping illegal waste to China - a development which is likely to have a big impact on sales to the Asian giant. Red-listed materials were allegedly mixed into OCC and mixed paper destined for China and Taiwan. The Dutch authorities have forwarded relevant information and their findings to their Chinese counterparts. If containers are found to contain this waste, they are being sent back to Europe and the penalties are severe. In response to this development, the Chinese authorities have adopted a very strict policy on qualities such as mixed paper and OCC. At present, they are trying to impose 100% checking of





all shipments from Rotterdam for all grades, as well as a 100% check for worldwide SMP shipments. Furthermore, Chinese mills no longer want to take any risks and so are being highly selective with regard to their sources. Demand and prices for the middle and high grades of recovered paper have remained stable in India. □



Contributing to the Recovered Paper Market Analysis:

- Melvin de Groot (Van Gelder Recycling, the Netherlands)
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Textiles

Closed: March 4 2013

By Olaf Rintsch, Textil-Recycling K & A Wenkhaus, Germany



Market overheated?

During early 2013, Europe's used textiles market has remained very tight. Some experts believe the textile recycling market has become financially overheated and needs to reset itself if the industry is to avoid closures and job losses. Original clothing is continuing to suffer from very limited availability and the volumes demanded cannot be satisfied. For the foreseeable future, there is no reason to anticipate a significant change in this market situation.

As a result of the high prices for textiles, illegal placement of collection bins is on the increase once again as unscrupulous operators realise how profitable it is to sell at current levels without having paid anything for the collected textiles. Demand from Africa is still very good; for feathers and shoes, prices have barely changed. Orders from Eastern Europe have been growing steadily but better qualities are required for this market. For wipers and recycling materials, prices have been maintained at a higher level. □

UK exports up 1.1% in 2012

The UK, Europe's largest exporter of recovered fibre, shipped more overseas in 2012 than in any of the previous three years, according to data released by the Confederation of Paper Industries and HM Revenue & Customs.

The total of 4.491 million tonnes was 1.1% higher than the 4.444 million tonnes recorded in 2011. However, exports were still approximately 8% short of the all-time high of 4.847 million tonnes established in 2008 - partly because December last year saw the UK's lowest monthly shipment volume (308 488 tonnes) since November 2009. UK collections of recovered paper edged up 1.5% last year to 8.154 million tonnes while consumption by domestic mills gained 1.7% to reach 3.822 million tonnes. The country's paper and board production climbed 1.6% to 4.412 million tonnes in 2012; output of packaging papers and boards jumped 8.4% whereas production of newsprint and printings & writings slid, respectively, 3.5% and 2.1%.

UK's Clothing Roadmap claims leadership award

The UK's Department for Environment, Food and Rural Affairs (DEFRA) and the Waste & Resources Action Programme (WRAP) have won the 2013 Global Leadership Award in Sustainable Apparel, which was developed by The Sustainable Fashion Academy (SFA), together with the Association of Swedish Fashion Brands and other partners, in order to promote initiatives within fashion and sustainable development.

The award, which was presented in Stockholm by Sweden's minister for the environment Lena Ek, honours the development of the Sustainable Clothing Roadmap and Action Plan, an initiative that aims to reduce the environmental impact of clothing throughout its lifecycle. The venture brings together industry, government and other interested parties and is overseen by a steering group comprising representatives from major retailers, brands, recyclers, sector bodies, NGOs and charities.

Among its four working groups, one focuses exclusively on diverting textiles from landfill by improving collection and separation systems, and on developing markets for reuse and recycling. Key developments have included textile collection guidance for local authorities and partners. The other working groups tackle design, influencing consumer behaviour and 'metrics', with the third of these aiming to agree practical ways to measure and report reductions in carbon, water and waste impacts of UK clothing.

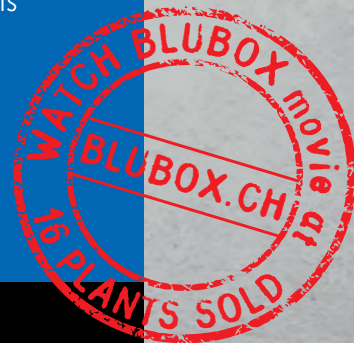


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Green composite harvested from car wrecks

Two Dutch concerns – automotive specialist ARN Recycling and fibre reinforced plastics manufacturer NPSP Composites – have come together in the pursuit of a pioneering mission: to develop a new and, more importantly, sustainable composite derived largely from end-of-life cars.

Meet BlueRoots, a new and durable material that has been specifically designed to ‘green’ the streets by way of street name signs and outdoor furniture. The composite features two key ingredients: a bio-based resin which acts as a binding agent; and ‘fillers’ originating from end-of-life vehicles (ELVs), such as car interiors, mats and also silicon. While Dutch fibre reinforced plastics manufacturer NPSP Composites develops the former, ARN Recycling has called upon its modern post-shredder technology (PST) plant at Tiel in the Netherlands to provide the recycled content for the mixture. The ‘thirst for innovation’ in material utilisation is what initiated the dialogue with the composite company in early 2012, according to ARN. By pooling their respective expertise, they were able to obtain a subsidy from the European LIFE+ programme. The emergence of the new composite represents a shift from the all-too-familiar scenario for car fillers of incineration or dumping. BlueRoots makes

a major difference in that it enables the high-end application of input that could not be recycled in any way in the past, argues the car recycling authority. ‘Luckily,’ ARN comments, ‘thanks to the PST facility and use in this new composite material, such drastic disposal is no longer necessary.’ In addition, BlueRoots also has the potential for ‘a notable positive influence’ on the recycling rate for ELVs in the Netherlands.

Ideal candidate

Coming up with ‘just the right recipe’ and production procedures was a challenging and time-consuming process with many ups and downs, recalls ARN. ‘Determining the proper rigidity and fulfilling the criteria set for street name signs was a quest in its own right – not in the least because BlueRoots is made entirely from recycled content, thus saving a significant amount of valuable natural resources,’ it says. Described as a ‘very tough’ material that can be cast and coated, painted and laminated as well as printed upon,

it is suitable for various kinds of applications, the partners explain. The first step is to market the recycling innovation as a composite material in street name signs given that its diversity renders it an ‘ideal candidate for this purpose’, comments ARN. Apart from creating street signs with a historical look, modern films can be introduced to ensure good reflective characteristics.

As good as aluminium

ARN says: ‘The Netherlands has some 250 000 streets, each with at least two street name signs in a wide variety of shapes, sizes and designs. However, they are often produced in aluminium. Our goal is to offer a sustainable alternative – one that will prove to be just as good as conventional aluminium signs.’ It insists that the eventual cost of making a sign from this material will not exceed that for one made of aluminium. A trial series has been scheduled for production. At present, the team behind BlueRoots is focusing on the domestic market,

according to ARN. ‘The interesting thing is that the same rules apply to the manufacturing of street name signs across Europe, with the Netherlands even upholding more stringent legislation than other countries,’ it continues. ‘This means that the leap towards taking the product into foreign markets is not so big. Furthermore, the materials incorporated into BlueRoots are readily available anywhere on the continent, which ensures there is a sufficient stock of resources we can tap.’ NPSP and ARN realise the recycled composite will have to ‘prove itself’ but are confident it will be able gradually to ‘conquer the market’ in the years to come. ‘After all, BlueRoots contributes to a cleaner and greener environment,’ it is argued. ‘We think this will lead municipalities to replace old signs and come to us when needing new ones.’ □

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Closing dates

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March 26 2013

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