



# Recycling

International

August 2012, No.6



## Shedding light on lamp recycling

**From fly ash  
to hard ca\$h**

**Red metal  
a hot prospect**

# SIERRA

WORLD LEADER IN SCRAP METAL PROCESSING SOLUTIONS

presents

the **REB** series

many different materials, **just one solution**



Hall 17, stand G69



**R**ecycle  
**E**verything  
**B**aler

**SIERRA**  
WORLD LEADER IN SCRAP METAL PROCESSING SOLUTIONS



**SIERRA EUROPE**

Phone +39 053 290 0733 | Fax +39 053 297 5350

[www.sierraeurope.com](http://www.sierraeurope.com) | [info@sierraeurope.com](mailto:info@sierraeurope.com)



Holiday-time gives you the chance to visit and relax in places you've never been before. But year after year, the same country exerts its magnetic attraction on me and my wife Helga...

## The boat in heaven

**W**hen, earlier this year, my wife Helga and I discussed our summer holiday destination, we planned a US\$ 10 000 per person luxury cruise in South America, including diving with whales off the Galapagos Islands. And as per the last four years, we eventually ended up in Italy.

When the majority of people think of Italy, they tend to think in unfair stereotypes: the country is widely associated with being the birthplace of pizza, with soccer players and with knife-wielding thugs, while movie buffs see it as the home of the Mafia. But in essence, Italy is a fascinating giant leather boot, found propping up the underbelly of Europe. Helga and I just love Italy - wonderful wines, fantastic weather at this time of year and great food. The pasta is especially *buonissimo*, although I sometimes wonder if you ate pasta and anti-pasta at the same time, would you still be hungry?

To us, Italy is like heaven on earth. By the way: do you know the difference between heaven and hell? Heaven is where the police are British, the mechanics are German, the lovers are French, the chefs Italian and it's all organised by the Swiss. In contrast, hell is where the police are German, the mechanics are French, the chefs are British, the lovers are Swiss and it's all organised by the Italians. So much for unfair stereotyping!

### | *'You don't have the guts...'*

We spent part of our holiday in an apartment up in the hills of Imperia in Liguria, overlooking the Mediterranean. Next door was a restaurant called 'Le navi in cielo' - or 'The boat in the sky' ([www.lenaviincielo.it](http://www.lenaviincielo.it)). Particularly when it gets a little foggy, it is sometimes impossible to distinguish the sea from the sky. So if a big boat crosses the horizon, it appears to be flying in the sky. That's how the restaurant got its name. We had dinner there twice and also did a cooking class in which we learned how to make dough for pizzas and foccacia bread, as well as how to make 'the best pesto in the world'

and wonderful sweets. The two owners, Riccarda and Luigi, use products only from their garden or from selected local farms in their restaurant.

Our Saturday evening meal was particularly memorable. All the tables were outside in the garden, and we ate under the trees and the stars. Next to us was a table for a party of 14 Italian men, women and children with ages ranging from three months to over 70. And they had dinner 'the Italian way': there was joy, there were arguments, there was sweet-talking, there was laughter and tears, there were kids screaming to each other and for attention from their parents. In short, it was the best Saturday evening inferno we have ever experienced. As the coffees, liqueurs and desserts were being served, they invited us to their table and we discussed Berlusconi, the European soccer final, the best way to prepare Bolognese sauce, the rise and fall of the Euro, and the Mafia. One of the guests, Giovanni, who spoke very good English, poured me some more liqueur, leaned over to me and said: 'Listen to this, Manfredo. A Mafia Godfather finds out that his bookkeeper, Guido, has cheated him out of US\$ 10 million. His bookkeeper is deaf - it's the reason he got the job in the first place because he who hears nothing can't testify in court. When the Godfather goes to confront Guido about his missing US\$ 10 million, he

takes along his lawyer who knows sign language. The Godfather tells the lawyer: 'Ask him where the money

is.' The lawyer, using sign language, does as asked. Guido signs back: 'I don't know what you're talking about.' The lawyer tells the Godfather: 'He says he doesn't know what you are talking about.'

The Godfather pulls out a gun, puts it to Guido's head and says: 'Ask him again!' The lawyer signs to Guido: 'He'll kill you if you don't tell him.' Guido signs back: 'OK! You win! The money is buried behind the shed at my cousin Bruno's house.' The Godfather asks the lawyer: 'What did he say?' The lawyer replies: 'He says you don't have the guts to pull the trigger.' □



## Dense Media Separation made easy with DMS Powders

DMS Powders is the leading supplier of Atomised and Milled Ferrosilicon, backed by over 60 years of experience.

Our Ferrosilicon powders enable maximum separation efficiency while ensuring:

- Corrosion resistance
- Abrasion resistance
- Magnetic properties allowing easy recovery and demagnetisation

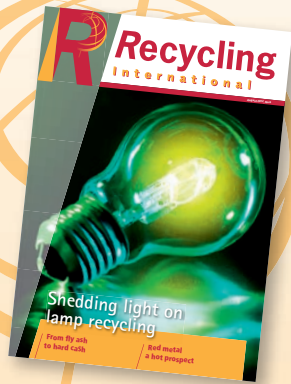
Our products are also pre-registered with REACH

**Fine Powders**  **time after time...**

DMS Powders (Pty) Ltd, P.O. Box 945, Meyerton, 1960, South Africa

Tel: +27 (16) 360 5200, Fax: +27 (16) 360 5314, e-mail: [enquiries@dmspowders.com](mailto:enquiries@dmspowders.com), [www.dmspowders.com](http://www.dmspowders.com)





### Sections

- 3 Viewpoint
- 6 Events Calendar
- 8 News
- 19 Product news
- 82 Next issue

### Markets Analysis

- 64 Ferrous scrap
- 72 Stainless steel scrap
- 74 Non-ferrous scrap
- 78 Recovered paper
- 79 Textiles

### And also...

- 26 Circuit board recycling - a global picture
- 36 Trade show: CARS - a first-timer success
- 50 Company profile - Paper recycler Lamacart of Italy
- 62 Record in prospect for palladium recycling
- 81 In the laboratory: recycling of impure aluminium

# THIS ISSUE

## Coverstory

### Shedding light on lamp recycling / 20

A variety of lamps fall within the scope of the EU Directive on Waste Electrical and Electronic Equipment. This article, written by specialist Thomas Marinelli, assesses treatment possibilities and recycling technologies, while also addressing challenges in lamp recycling and the contentious issue of rare earth supply.



### From fly ash to hard cash

Worldwide, coal power plants are spitting out millions of tonnes of fly ash each year. UK-based RockTron International has found a way to turn this powder into valuable products such as activated carbon.



28

### Metals theft and fraud

Recycling International reports from two international conferences on the scale and profound repercussions of metal theft and fraud, and also relates experts' advice on possible ways to counter this twin menace.



46

### EU green light for Asian yards

At a recent Ship Recycling Conference in London, it was said that Europe's current regulatory framework 'is not working'. This feature reflects ship disposal market prospects.



40

### Red metal a hot prospect

Copper recycling has always been crucial to the copper chain as a whole. This conference report reflects some of the key issues within the sector and the market outlook for the red metal.



54



10-11 September Berlin (Germany)  
**International Recycling + Recovery Congress**

TK Verlag  
Phone: +49 3391 45450  
Fax: +49 3391 454510  
E-mail: tkverlag@vis.de  
[www.vivis.de](http://www.vivis.de)

18-20 September Gorinchem (The Netherlands)

**Recycling 2012**  
Trade fair for the recycling industry  
Evenementhal Gorinchem  
Phone: +31 183 680 680  
Fax: +31 183 680 600  
E-mail: gorinchem@evenementhal.nl  
[www.evenementhal.nl](http://www.evenementhal.nl)

11-13 September Birmingham (UK)

Birmingham (UK)

The Recycling & Waste Management show (RWM) in partnership with CIWM 2012 will see all the key materials associations and social enterprises in the waste and recycling sectors brought together under one roof for the first time. The "Materials Village" is designed to give visitors valuable access to information and advice on the recycling and reprocessing of a wide range of different streams. With a line-up including the Resource Association, the British Metals Recycling Association, Recoup, Alupro, the

Confederation of Paper Industries, British Glass and the Association for Organics Recycling, it will be designed to provide a valuable one-stop shop for anyone looking to learn about the latest issues surrounding collection, sorting and end markets for recovered materials.

For more information, contact:  
Phone: +44 207 728 3724,  
Fax: +44 207 728 4200  
[www.rwmexhibition.com](http://www.rwmexhibition.com)

11-13 September Birmingham (UK)

**RWM Exhibition**  
EMAP  
Phone: +44 207 728 3724  
Fax: +44 207 728 4200  
+44 207 728 4507  
[www.rwmexhibition.com](http://www.rwmexhibition.com)

19-20 September Dallas (USA)

**E-Scrap Conference**  
Resource Recycling  
Phone: +1 503 233 1305  
Fax: +1 503 233 1356  
E-mail: cara@resource-recycling.com  
[www.e-scrapconference.com](http://www.e-scrapconference.com)

11-13 September São Paulo (Brazil)  
**Exposucata**

Reciclagem Moderna  
Phone: +55 115 535 6695  
E-mail: exposucata@exposucata.com  
[www.exposucata.com](http://www.exposucata.com)

19-21 September Shanghai (China)  
**World Scrap Metal Congress 2012**

Terrapinn  
Phone: +65 622 283 08  
Fax: +65 622 632 64  
E-mail: amelia.yeo@terrapinn.com  
[www.terrapinn.com](http://www.terrapinn.com)

6-7 November Warsaw (Poland)  
**Identiplast 2012**

Plastics Europe  
Phone: +32 267 532 97  
Fax: +32 267 539 35  
E-mail: info@plasticseurope.org  
[www.plasticseurope.org](http://www.plasticseurope.org)

21-22 November Sydney (Australia)  
**Australasian Waste & Recycling Expo**

Trade show and conference for the waste and recycling industry  
Phone: +61 392 614 605  
E-mail: lisa@awre.com.au  
[www.awre.com.au](http://www.awre.com.au)

12-13 September Istanbul (Turkey)  
**2nd Steel Scrap Conference**

Metal Bulletin Events  
Phone: +44 207 779 7222  
Fax: +44 207 779 8294  
E-mail: marketing@metalbulletin.com  
[www.metalbulletin.com/events/scrap](http://www.metalbulletin.com/events/scrap)

25-26 September Chicago (USA)  
**26th Stainless & its Alloys Conference**

SMR/American Metal Market  
Phone: +43 567 272 737  
Fax: +43 567 272 737 99  
E-mail: p.moll@smr.at  
[www.smr.at](http://www.smr.at)

6-7 November London (UK)  
**Paper Recycling Conference Europe**

Recycling Today Media/PIRA International  
Phone: +44 137 280 2000  
Fax: +44 137 280 2243  
E-mail: hmarsden@smithers.com  
[www.PaperRecyclingEurope.com](http://www.PaperRecyclingEurope.com)

27-30 November Lyon (France)  
**Pollutec 2012**

Reed Exhibitions  
Phone: +33 147 562 113  
Fax: +33 147 562 120  
E-mail: olivier.debiard@reedexpo.fr  
[www.pollutec.com](http://www.pollutec.com)

12-14 September Amsterdam (The Netherlands)  
**ICBR 2012**

International congress for battery recycling - ICM  
Phone: +41 627 851 000  
Fax: +41 627 851 005  
E-mail: info@icm.ch  
[www.icm.ch](http://www.icm.ch)

9-11 October Düsseldorf (Germany)  
**Aluminium 2012**

Reed Exhibitions Germany  
Phone: +49 211 901 913 07  
Fax: +49 211 901 911 22  
E-mail: Eva.Schroer@reedexpo.de  
[www.aluminium-messe.com](http://www.aluminium-messe.com)

7-9 November Beijing (China)  
**The 12th Secondary Metals International Forum**

CMRA  
phone: +86 10 8229 8514  
fax: +86 10 8229 8548  
E-mail: cmra@chinacmra.org  
[www.chinacmra.org](http://www.chinacmra.org)

7 December Gurgaon, Delhi-NCR (India)  
**Metal and Steel Scrap Summit 2012**

Global Business Connect  
Phone: +91 124 300 5651  
Fax: +91 124 404 8994  
E-mail: office@globalbusinessconnect.org  
[www.globalbusinessconnect.org](http://www.globalbusinessconnect.org)

12-14 September Stockholm (Sweden)  
**11th Stainless and Special Steel Summit**

SMR/Metal Bulletin  
Phone: +43 567 272 737  
Fax: +43 567 272 737 99  
E-mail: p.moll@smr.at  
[www.smr.at](http://www.smr.at)

28-30 October Barcelona (Spain)  
**BIR Autumn Convention**

Bureau of International Recycling  
Phone: +32 262 757 70  
Fax: +32 262 757 73  
E-mail: bir@bir.org  
[www.bir.org](http://www.bir.org)

7-10 November Rimini (Italy)  
**Ecomondo**

16th international trade fair of material & energy recovery and sustainable development - Rimini Fiera  
Phone: +39 054 174 4492  
Fax: +39 054 174 4475  
E-mail: a.astolfi@riminifiera.it  
[www.ecomondo.com](http://www.ecomondo.com)

17-19 September Florence (Italy)  
**ISWA 2012**

The world solid waste congress  
ISWA  
Phone: +39 064 740 589  
Fax: +39 064 875 508  
[www.iswa.com](http://www.iswa.com)

5-6 November Ningbo (China)  
**China International Scrap Conference**

China Entry-Exit Inspection and Quarantine Ass.  
Phone: +86 10 5713 9812  
Fax: +86 10 5713 0032  
E-mail: lucyzhao@ciqar.org  
[www.ciqar.org](http://www.ciqar.org)

13-16 November Guangzhou (China)  
**Electronics Recycling Asia**

International conference & exhibition on electronics  
ICM  
Phone: +41 627 851 000  
Fax: +41 627 851 005  
E-mail: info@icm.ch  
[www.icm.ch](http://www.icm.ch)

16-18 January Salzburg (Austria)  
**IERC 2013**

International electronics recycling congress  
ICM  
Phone: +41 627 851 000  
Fax: +41 627 851 005  
E-mail: info@icm.ch  
[www.icm.ch](http://www.icm.ch)

# DANIELI LYNXS DANIELI HENSCHEL

**INNOVATIVE METAL SCRAP RECYCLING  
TECHNOLOGY FOR HIGH PROFITABILITY  
AND TOTAL METAL RECOVERY**



Come see us  
RWM Birmingham  
11-13 Sept 2012  
Stand 20A08

DANIELI LYNXS shredder plants and DANIELI HENSCHEL shears, balers and pre-shredders enjoy a reputation for industry leading reliability, outstanding performance and longevity giving customers continuous high quality processed materials regardless of local climate conditions.

Quality manufacturing, from spare parts to fully tested equipment for complete turnkey supplies is carried out in DANIELI workshops worldwide.



**DANIELI HENSCHEL  
DANIELI LYNXS**

Danieli Henschel, Kassel  
Tel +49 561 801 5816  
info@akros-henschel.com  
www.akros-henschel.com

Danieli Lynxs, Sheffield  
Tel +44 1142 800 300  
lynxs@uk.danieli.com  
www.lynxs-shredders.com



PART OF DANIELI TEAM



## Aircraft retirements to almost double in next decade

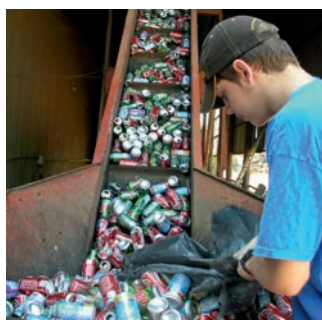
**Due to accelerated** fleet renewal driven by the competitive fuel-burning performance of modern airplanes, 'the number of airplanes leaving the global fleet will nearly double in the next decade', according to Larry Schneider, Boeing's Vice President for Product Development. Last year, some 400 aircraft were retired worldwide.

Should this fuel-driven trend persist, the Boeing gauges that around 44% of the global fleet will be replaced in the next 20 years, which amounts to well over 13 000 airplanes. According to Mr Schneider, the brand would prefer to see

more recycled materials going into the aviation market and look to AFRA to set the example in terms of establishing recycling technologies.

'If Boeing is to reach its 90% recycling objective by 2016, an enormous amount of collaboration is the key,' the executive ventured. There is a particular need to enhance technologies which 'reduce the full life-cycle costs of recycling', he continued. 'In order to give a higher recycling value to aircrafts so both owners and airlines will want to recycle, there really needs to be a greater economic incentive to recycle.' [www.afraassociation.org](http://www.afraassociation.org)

## Europe recycles two out of three aluminium beverage cans



**The European recycling** industry set a new record by recycling 66.7% of all aluminium beverage cans in 2010, reports the European Aluminium Association (EAA).

This represents a tripling of the recycling rate over the last 20 years, over which period the consumption of cans has doubled. The same upward trend is visible for consumption, 'which increased by 2 billion units to a total of 36 billion

cans in 2010,' reveals the EAA. 'This means that at least 24 billion aluminium beverage cans were recycled.'

In the early 1990s, only 30% of all beverage cans were recycled. 'This figure rose to 52% in 2005, meaning that we are confident that we should be able to recycle three out of four cans by 2015 or thereabouts, with further growth potential for the years up to 2020,' adds the association.

Several countries, including Belgium and Germany, have already reached or are exceeding this level, mainly 'due to their highly-efficient and well-established collection and sorting infrastructures', according to the EAA. Deposit systems are particularly hailed to yield impressive results, though the association claims these could be improved further by focusing on cans that are consumed outside of the home. [www.alueurope.eu](http://www.alueurope.eu)

## Wanted: sustainable packaging - US\$ 25 000 reward

A consortium of US industry-related groups, led by Scientists Without Borders (SWB), has issued a singular public challenge to researchers around the world: come up with a sustainable packaging solution for the micronutrient powders (MNPs) used to combat malnutrition. And this attempt to spur innovation comes with a reward tag of US\$ 25 000.

The most common type of packaging for MNPs comprises a foil packet composed of aluminium, PET and polyethylene. Though these materials provide excellent protection for the contents against extreme heat, humidity and UV light, together they are difficult to recycle or destroy, argues the consortium. The sustainability problem is further complicated by 'extremely limited' waste systems at refugee camps.

The global challenge will run for a period of three months, supervised by an independent panel of leading experts convened by SWB which will select the challenge champion. The reward of US\$ 25 000 will go to the most novel, feasible and cost-effective sustainable packaging ideas; the winner will also have the opportunity to collaborate with other leaders in the field to develop the idea. 'Under-nutrition is a challenge that urgently needs innovation to go from evolutionary to revolutionary progress,' explains Shaifali Puri, SWB's Executive Director, who adds that finding effective solutions will rely on 'multiple ideas from multiple different minds'.

[www.scientistswithoutborders.org](http://www.scientistswithoutborders.org)

## 'Real danger' glass packaging target will be missed

**Latest provisional data** published by the UK Environment Agency's National Packaging Waste Database reveals around 350 000 tonnes of glass was sent for recycling and recovery in the second quarter of 2012 - a total some 75 000 tonnes short of what is needed per quarter to meet this year's target. The sharp drop in the country's glass recycling performance coincided with a rise in prices paid for glass Packaging Recovery Notes (PRNs). Should this trend continue, there is a 'real danger' the market won't achieve packaging targets this year, letsrecycle.com has been warned by the Environment Exchange's Senior Market Operator Thomas Rickerby.

At almost 90 000 tonnes below the figure for the same period in 2011, Mr Rickerby says the results are bordering on 'catastrophic.' Since plastics and steel are not doing well either, he fears the market is potentially facing an under-supply of the three materials. 'After two years of low PRN prices, it is going to be a bitter pill to swallow to see much higher PRN prices for these materials.'



According to Chris Taylor of PRN trading specialist Clarity Environmental, all is not necessarily lost since these figures aren't final until all reprocessors have shared their information. He has informed letsrecycle.com: 'Once these figures come through, it's likely to make up some of the deficit and with the Olympics starting next week, we should start seeing larger volumes.'

[www.npwd.environment-agency.gov.uk/Public/PublicDEFRAReport.aspx](http://www.npwd.environment-agency.gov.uk/Public/PublicDEFRAReport.aspx)





## CEPI warns of 'frightening' scenario

The waste guidance issued on June 28 by the European Commission's Environment Department risks 'seriously downgrading' the quality of recyclates used by paper mills, states the Confederation of European Paper Industries (CEPI). The heavy criticism is mainly focused on the Commission's statement that 'the moment when a material or substance reaches EoW (end of waste) is simultaneous with the completion of the recovery and recycling processes'. According to the confederation, the guidance document should not describe compliance with end-of-waste criteria as an equivalent to recovery or recycling. In fact, such a stance poses 'a serious risk to advancing a recycling society in Europe'. Additionally, it is feared that the 'radical measures' in the non-binding document would effectively break the information flow for public authorities, making it more difficult to police illegal shipments of material. 'For waste management companies and waste traders, the scenario will be frightening,' says CEPI. 'With the new interpretation, they would become "recy-

clers" without receiving any significant benefit.' They would, however, become 'legally responsible for the output material' as designated by producers. This would put the weight of liability concerning both quality and possible contamination of waste material on their shoulders. In the opinion of CEPI, 'the full implications of that change in interpretation are not clear'. Still, it believes demanding so much from waste management companies 'might just add to the growing list of badly implemented environmental EU measures' and is unlikely to contribute to smart, green and inclusive growth in Europe. The new guidance document also states: 'If co-mingled separation can achieve high-quality recycling similar to that achieved with separate collection, then it would be in line with EU waste objectives.' Considering this particular issue is still under legal review in the UK, CEPI finds this to be a somewhat 'questionable' interpretation. The confederation believes co-mingling also negatively affects the quality of paper recyclates. [www.cepi.org](http://www.cepi.org)

advertisement



- dedusting
- windsifting
- conveying
- compacting
- filtering

ATEX-compliant  
filter systems

**Dedusting systems – Windsiftings**  
from a full-line producer

**HÖCKER**  
**POLYTECHNIK**

Always one idea ahead

HÖCKER POLYTECHNIK GmbH · [www.hoecker-polytechnik.de](http://www.hoecker-polytechnik.de)  
D-49176 Hilter · Fon + 49 (0) 5409 405-0 · Fax + 49 (0) 5409 405-555 · [info@hpt.net](mailto:info@hpt.net)

## Joke of the Month



### A woman's sixth sense...

There was once a wife so jealous that when her husband came home one night and she couldn't find hairs on his jackets she yelled at him: 'Great, so now you're cheating on me with a bald woman!' The next night, when she didn't smell any perfume, she yelled at him again, saying: 'She's not only bald, but she's also too cheap to buy any perfume!'

Sponsored by

Sierra International  
Machinery, Inc.  
[www.sierraintl.com](http://www.sierraintl.com)

Sierra Europe  
Recycling  
[www.sierraeurope.com](http://www.sierraeurope.com)

## Business

### Boliden

Boliden AB of Sweden has officially opened its latest US\$ 181 million electronics recycling facility at the Rönnskär copper smelter. This heavy investment is said to increase the smelter's capacity to 120 000 tonnes per year. The company states this development is due to the growing availability of electronic scrap due to the on-going popularity of electronic devices, shorter product life-cycles and harsher e-waste legislation. [www.boliden.com](http://www.boliden.com)

### Alcoa/Novelis

Alcoa, the world-leading producer of primary and fabricated aluminium, has reached an agreement with Novelis that will allow Alcoa's Global Packaging group to assume full control of their joint venture Evermore Recycling with effect from August 31 this year. Meanwhile, Novelis intends to launch a new organisation for the procurement of UBCs for three of its locations in the USA, expecting its global UBC consumption to grow to more than 60 billion by 2015 as a result. [www.alcoa.com](http://www.alcoa.com) and [www.novelis.com](http://www.novelis.com)

### Sun Metals/Buzwair

The Qatar-based industrial division of the Buzwair Group has been commissioned by United Arab Emirates scrap recycler Sun Metals to build a cryogenic gas separation plant at Sur in Oman. It will have the capacity to produce 60 tonnes of gaseous oxygen a day alongside roughly 70 tonnes of liquid oxygen, nitrogen and argon, which are meant to benefit the production operations of an integrated steel mill, which is due to be constructed at a nearby location. [www.buzwairgases.com](http://www.buzwairgases.com)

### Krones

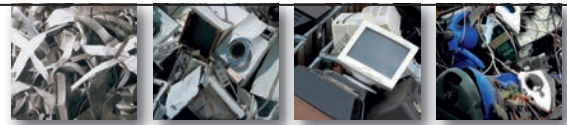
Food group Stute Nahrungsmittelwerke of Paderborn, Germany, is to install its first closed-loop PET recycling line at a new beverage plant, which is based on the SuperClean PET flake process by Krones. Already having supplied five ventures world-wide, this represents the first installation on home soil. The line will produce 500kg of rPET flakes an hour and offers a closed-loop solution able to cleanse and decontaminate the rejected PET material. [www.krones.com](http://www.krones.com)

### Scrap Connection

Responding to the perceived need for a 'safer and more efficient trading environment', the newly-founded metal exchange Scrap Connection launched an industry-specific digital marketplace on July 12. The on-line platform serves to connect communities worldwide, encompassing both scrap processors and steel mills, and 'provides a market that never sleeps', says CEO Chris Yerbey. Some 31 scrapyards with a combined import and export value of Euro 240 million have already registered. [www.scrapconnection.com](http://www.scrapconnection.com)



giving earth its second nature



**OUR GOAL: 100% RECYCLING**

Group Galloo Recycling is one of the principal recycling companies of ferrous and non-ferrous metals in Europe. Group Galloo Recycling annually treats 1.000.000 tons of ferrous scrap, 60.000 tons of non-ferrous metals, 25.000 tons of plastics out of 200.000 tons of shredder residues. By investing permanently in new technologies, the group aims at a 100 % recycling.



Wervikstraat 320 • B 8930 Menen • Belgium • Tel.0032 (0)56.52.13.00  
 Fax 0032 (0)56.52.13.10 • Email: info@galoo.com • Website: www.galoo.com



**More Powerful Performance**



Do not forget to order!  
 The „Single-Shaft-Shredder LEOPARD“ for preparation  
 of materials to RDF!



**PALLMANN**  
 Top Performance in Size Reduction  
 PALLMANN Maschinenfabrik GmbH & Co.KG, Wolfslochstrasse 51  
 66482 Zweibrücken/Germany, Phone +49 6332 802 0, Fax: +49 6332 802 521  
 E-Mail: recycling@pallmann.eu, www.pallmann.eu



## EU standard boost for post-consumer plastics

**Plastics converters,** recyclers and collectors from various European countries have joined forces to launch a certification and audit scheme called EuCertPlast as a means of implementing the CEN standard (14343) regarding post-consumer plastics recycling. The industry has welcomed this development as a major step towards 'guaranteeing good-quality products'.

Alexandre Dangis, Managing Director of the EuPC plastics converters body, says this initiative will 'demonstrate that good practices on post-consumer plastics recycling should be rewarded with a European certificate', which will subsequently 'boost the use of recyclates in Europe by plastics converters'. Converters 'are ready' to take on more of the material and the scheme will 'contribute to more potential for higher plastics recycling targets in Europe'.

Apart from the impact on quality and

use, there is also a significant legislative benefit, claims Ton Emans, President of the European Plastics Recyclers (EuPR). 'A suitable harmonised auditing scheme for Europe was needed due to the difficulty in gaining access to plastics waste from the different and often complex national systems,' he explains. Now a level playing field has been created, plastics recyclers have obtained access to raw materials for further treatment in Europe. 'This is a major step forward for our young industry,' concludes Mr Emans.

The scheme has been in the works for three years and has been based on an auditing model from Germany. EuCertPlast was supervised by EuPR and EPRO in collaboration with the EuPC, EuPET, RECOVINYL and Cyclos GmbH. Several plastics recycling companies performed initial pilot audits at factory level.

[www.eucertplast.eu/en](http://www.eucertplast.eu/en)

advertisement

We recycle all kinds of metals and plastic shipping them to more than 15 countries around the world

**"RECYCLING MEXICO INTO THE WORLD"**

Bernardo Llaguno Garza

[www.riisa.com.mx](http://www.riisa.com.mx)  
Monterrey Technology Park. Carretera Laredo Km. 25.2. Monterrey N.L. México  
Phone: +52(81) 8154-1900 Fax: +52(81) 8154-1901

## Business

### Tata Steel/Euro Scrap Alliance

Indian steel producer Tata Steel is selling its 50% stake in Netherlands-based metals recycler HKS Scrap Metals to Euro Scrap Alliance (ESA) - the subsidiary of Germany's TSR. The financial specifics of the deal, which is still awaiting approval from the European Commission, have not been revealed. According to Tata, the exit from HKS is 'in line with our intention to focus on our core activities'.

[www.tatasteelindia.com](http://www.tatasteelindia.com)

### Upstate Shredding

US scrap metal processor Upstate Shredding is installing a US\$ 6 million wire chopping plant in Owego, New York State, that will enable the company to handle lower-grade insulated wiring from the shredding process. Describing the refined material as highly marketable, Upstate owner Adam Weitsman promised: 'This venture will put North America back in play again.'

[www.upstateshredding.com](http://www.upstateshredding.com)

### CMC/Danieli

US-based Commercial Metals Company (CMC) has sold its Croatian pipe mill and CMC Sisak subsidiary to Italian steel specialist the Danieli Group. The total transaction value is estimated to be around US\$ 30.4 million. Under the contract, certain assets pertaining to CMC Sisak will be allowed to be kept, with Commercial Metals to continue its efforts to market them in the future.

[www.cmc.com](http://www.cmc.com)

### German PET study group makes its bow

Although Germany has the largest volumes of collected PET in Europe, the country's recyclers are claiming that they do not have sufficient access to the material. As a result, German PET recycling companies have bundled their powers by establishing a so-called PET study group within the country's Plastics Recycling Association (BVSE).

[www.bvse.de](http://www.bvse.de)

### Mitsui OSK Lines

As a result of this year's 'worsening market trends', the Japanese operator of the world's largest merchant fleet - Mitsui OSK Lines (MOL) - is intending to scrap or cold-lay-up between 10 and 20 of its Capesize bulkers. Initially, just five vessels were scheduled for dismantling by next March but MOL is now determined to reduce its average fleet age from 23 down to 15 years.

[www.mol.co.jp/menu-e.html](http://www.mol.co.jp/menu-e.html)

### Apple

Spurred on by customer complaints and concerns, Apple has realised 'it was a mistake' to remove its portfolio of 39 products from the highly regarded Electronic Product Environmental Assessment Tool (EPEAT) system - which pertains specifically to end-of-life disassembly. It did so when it found out its newest range of lap-tops would be unlikely to meet the quality requirements. Now describing the EPEAT standards as 'an important measuring stick for our industry and its products', Apple has embraced the system once again.

[www.apple.com](http://www.apple.com) and [www.ifixit.org](http://www.ifixit.org)

### Tetra Pak/ Gayatri Paper Mills

South Africa has opened its first beverage carton recycling plant, in the city of Germiston near Johannesburg, thanks to a joint effort between Tetra Pak and Gayatri Paper Mills. Under the company's new agreement, collected cartons will be baled and sold on to the mill for recycling. Having produced about 2.8 billion packages for the regional market in 2011, this is now predicted to increase to a record total of 3.1 billion this year.

[www.tetrapak.com](http://www.tetrapak.com)



Finger-Screen



Vibratory Fines Screen



HI-BOUND™  
Vibratory Flip Screen



Rotary Trommels



Single, Dual, and Triple Knife  
DE-STONER®  
Density Separators



## Super-Duty Sorting Solutions

For the best in recycling recovery equipment, look no further than General Kinematics.

GK has pioneered the application of vibratory separation through products such as our FINGER-SCREEN™ and DE-STONER® Air Classifier, both which efficiently sort and separate recyclables using low energy and low labor requirements.

GK also designs complete systems for material recovery, or will work with your system provider to supply our proven vibratory sorting solutions to increase your sorting efficiency.

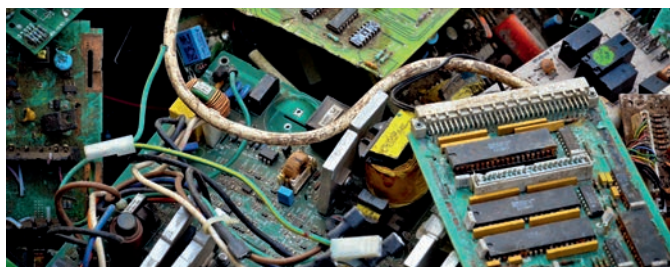
For more information about General Kinematics recycling equipment and recovery solutions, visit our website at [www.generalkinematics.com](http://www.generalkinematics.com).



Headquarters  
General Kinematics Corp.  
5050 Rickert Rd.  
Crystal Lake, IL 60014  
office: 815-455-3222  
fax: 815-455-2285

GK Europe GmbH  
Wemerstr. 32  
D-42285 Wuppertal  
Germany  
office: 49 (0)202 430 42 160  
fax: 49(0)202 430 42 164

General Kinematics Ltd.  
Dawley Brook  
Brierley Hill  
DY6 7BB  
West Midlands, England  
office: 44-1384-273303



## E-scrap recycling could triple by 2025

**New legislation concerning** the handling of e-scrap, paired with rising third-party certification for companies processing these materials, will cause the volume of recycled electronics to triple by the middle of the next decade, according to a new report from Pike Research. The data suggest e-scrap recycling performance will grow from 18% to 54% between 2010 and 2025 as worldwide electronics recycling and reuse climbs from 1.1 million tonnes per year to 7.9 million tonnes.

'The key players in the consumer electronics product sectors are all large, multi-national companies that have, in one form or another, adopted concepts of corporate social responsibility (CSR)

and sustainability,' explains Pike Research's Vice President Bob Gohn, saying that 'progress on the regulatory and standards front' will accelerate implementation and deployment efforts. Nowadays, more OEMs are requiring their contractors to be certified to either the e-Stewards or R2 standards, the report also notes. 'Moreover, the US Congress has pending legislation that, if passed, would provide support for the Basel Convention Treaty and its Ban Amendment. In addition, the European Union is considering modifications to their WEEE Directive that would close perceived loopholes and increase diversion rates.'

[www.pikeresearch.com](http://www.pikeresearch.com)

## US government draws green line for vendors

**The US government** - one of the world's largest consumers of electronic devices - is ceasing business transactions with vendors who opt to landfill their end-of-life equipment. The decision was preceded by a similar regulation prohibiting any federal agency depending on federal funds to dump its electronic equipment. From now on, government agencies are obliged to make use of their acquired electronics until they no longer function, and then they will enter the recycling

chain. Additionally, procurement managers could opt to transfer older equipment to related agencies or public institutes, such as schools.

According to the Government Accountability Office (GAO), a change of approach is necessary as the federal government is currently disposing of up to 10 000 computers every week. In 2009, for example, a total of 2.37 million tonnes of electronics went for disposal while only a quarter was recycled, states a GAO report.

## Business

### Coca-Cola

A consortium made up of five leading global brands – Coca-Cola, Ford, Heinz, Nike and Procter & Gamble – has launched the Plant PET Technology Collaborative (PTC), designed to 'accelerate research to increase the proportion of plant-based materials contained in PET to 100%'. Working in tandem, the companies are looking to 'develop common methodologies and standards' in the bio-plastics sector.

[www.thecoca-colacompany.com](http://www.thecoca-colacompany.com)

### Constellium

French aluminium product developer Constellium is increasing the percentage of recycled metal in its aircraft parts in an attempt to lower costs and minimise environmental impact. This decision has been prompted largely by the volatile prices of alloys frequently used in the aerospace sector and the ambition to salvage a larger portion of offcuts.

[www.constellium.com](http://www.constellium.com)

### Tzu Chi Foundation/ Le Relais

The Taiwan-based Buddhist Tzu Chi Foundation has entered into partnership with the French textile recycler Le Relais with the ambition to increase the collection of unwanted clothing. The Foundation wants to see a sustainable society and has pledged to mobilise its extensive 'Paris network' to raise additional awareness of recycling in the French capital.

[www.tw.tzuchi.org/en](http://www.tw.tzuchi.org/en)

### ACE UK/Sonoco Alcore

A 10-year deal between the Alliance for Beverage Cartons & the Environment (ACE UK) and Sonoco Alcore will see beverage cartons reprocessed at the recycler's paper mill in Halifax. This represents the first such facility to operate in the UK since the closure of the Smith Anderson paper mill in Fife, Scotland, in 2006. Cartons are slated to be reprocessed at the plant from 2013 onwards.

[www.ace-uk.co.uk](http://www.ace-uk.co.uk)

### OHL Engineering/Mann + Hummel ProTec

The Munich-based subsidiary of Schoeller Holding GmbH, OHL Engineering GmbH PET Recycling Technologies, has acquired fellow German recycling player Mann + Hummel ProTec GmbH. According to the Schoeller Group, this move reflects a desire to expand in the plastics industries. Henceforth, Mann + Hummel ProTec will operate under the Somos and OHL ProTec brand name.

[www.ohl-eng.com](http://www.ohl-eng.com)

### PV CYCLE

Following a surge in business activity, Belgium-based PV CYCLE - which specialises in the dismantling, demolition and renovation of photovoltaic modules - is setting up offices in Germany and Italy. This regionalisation is a multi-stage process aimed at setting up a local presence and advancing the development of its actionable national WEEE laws and processes.

[www.pvcycle.org](http://www.pvcycle.org)

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

### Quote ~ Unquote

*'They say that during sex you burn off as many calories as running 8 miles. Who the hell runs 8 miles in 45 seconds?'*



# YOUR SPECS + OUR MSW EXPERTISE = MAXIMUM RETURN

You've written the proforma. Now you need a partner who can meet it, providing a turn-key MSW plant with the best material recovery rates for the lowest lifecycle costs. It's easy when the CP Group is part of your equation.

For three decades CP separation systems have delivered the highest tons per hour with fewer sorters while producing the cleanest, most marketable end-products. And our customers tell

us that our systems are the most dependable, with the best run time and lowest maintenance costs in the industry.

Contact the proven industry leader today. We'll show you a system that combines CP's superior separation technology, MSW expertise, rugged durability and ideal after-the-sale support to equal the greatest ROI for your operation.

GO WITH THE LEADER.



[www.theCPgrp.com](http://www.theCPgrp.com)

(t) 619.477.3175 | (t) 800.462.5311

(f) 619.477.2215 | (e) [sales@cpmfg.com](mailto:sales@cpmfg.com)





## EU enforces stricter e-waste directive

**Looking to clamp down** on illegal exports of e-waste from the EU as well as 'greening' operators' performance, The Council of the European Union has adopted a new directive on waste electrical and electronic equipment (WEEE).

Under the current directive, all member states are required to collect 45% of the average weight of e-waste equipment arising through their national markets. The updated rules will require a 65% collection rate, though the Council has said there may be some flexibility in EU states where there is lower use of electronic devices.

The scope of the legislation is also widening. Specific items of electric and electronic equipment, such as photovoltaic panels, equipment containing ozone-depleting substances and fluorescent lamps containing mercury, will have to be collected separately and properly treated within six years of the new directive passing into law. Additionally, the directive establishes producer responsibility, as a means of encouraging designers and producers of electrical and electronic equipment (EEE) to take into full account and facilitate its repair, upgrading, reuse, disassembly and recycling.

## Chinese clampdown on UK mixed papers 'permanent'

**China's London-based** CCIC inspection agency has warned exporters of the need to ensure the mixed papers they send to the country are not contaminated. Due to this, hundreds of containers are reputedly in quarantine across a number of ports while

some have already been earmarked for return to the UK. 'Most but not all of the problem material is from MRFs in the UK,' reckons Paul Briggs, Managing Director of Mark Lyndon Paper Enterprises UK which supplies Lee & Man Paper Manufacturing in China. A great deal of the country's inspectors 'are now limiting contamination to about 1-2% maximum - although this is still officially to be confirmed', he says. 'We believe this level of enforcement is permanent and not just a temporary clampdown.'

Nick Watson of ACN in the UK, which exports to China's Nine Dragons Paper, states that quality issue has been quite a problem for the last six months, yet that the UK market has done nothing to change this - leading their Chinese partners to take their business elsewhere. 'Most mills in China are finding mixed paper from the Continent to be much better,' he has told [letsrecycle.com](http://letsrecycle.com). The problem has arisen because several UK players are not running their MRFs to the proper specifications, recycling insiders suggest. Instead, they are running the belts too fast and would be wise to consider remodelling to serve the present market.

[www.marklyndonuk.com](http://www.marklyndonuk.com)



advertisement

**WORLDWIDE SUPPLIER OF  
SHREDDER  
REPLACEMENT  
CASTINGS**

**REDESIGNED PARTS  
FOR MAXIMUM  
WEAR LIFE AND  
COST EFFICIENCY**

**LEVAND STEEL  
& SUPPLY  
CORPORATION**

**Levand House ■ 1849 Crestwood Blvd.  
Irondale, AL 35210**

**800-741-7741**

**205-956-1111**

**fax 205-956-2256**

**[group@levandhouse.com](mailto:group@levandhouse.com)**

**ESTABLISHED 1934**

## Belgian recycler enhances recovery using bacteria

Following three years of research and close collaboration between metallurgists and microbiologists from the GeMMe laboratory at the University of Liège, Belgian recycling specialist Comet Traitements and Biolix have developed a new process that enables optimal recovery of metals by adding bacteria into the equation.

The process is currently in its pilot stage and is tailored specifically to shredder waste. It revolves around the bacteria *thiobacillus ferrooxidans* and *leptospirillum ferrooxidans* which ensure a bioreactor-driven 'selective recovery' from various waste products of copper, zinc, tin and lead as well as a fraction rich in precious metals.

These bacteria allow the energy and reagents required for efficient separation of the metals to be minimised. For every tonne of copper treated using the novel process, 72 kg can be produced, for instance - with precious metals concentrate boasting a 98% recovery rate, resulting in a total of 87 kg. Comet notes: 'The metal content of the fine polymetallic concentrates gives them an economic potential that is by no means insignificant but is often underestimated. This advanced process now finally allows us to exploit most of their intrinsic value.'

For more information, visit:

[www.cometsambre.be/en](http://www.cometsambre.be/en)

## MRF code poses red-tape danger to small operators

**As the UK's Material** Recycling Facility (MRF) code of practice takes shape, the Recycling Association is voicing concern that smaller players may suffer financially from extensive, mandatory quality testing.

While accepting that the document was still a work in progress, Simon Ellin, Chief Executive of the UK Recycling Association, said it was inevitable that a minimum level of test procedures would be required to ensure the quality of the final product. The investment necessary would be unlikely to change how large-scale recyclers did business but he warned that the code could impact on small operators.

Furthermore, any facility that processes more than 1000 tonnes a year of material and separates out any two components of cardboard, glass, plastics and metals, will feel the strain of the new code, Mr Ellin states, informing [letsrecycle.com](http://letsrecycle.com): 'What we fear is that members that might have a small trolley in the yard will become classified as an MRF as well - and are then wrapped in more red tape'. To prevent this from happening, he suggests implementing a voluntary approach.

[www.defra.gov.uk](http://www.defra.gov.uk)

# Experience the Progress.

## Material handling equipment.

- Maximum efficiency through progressive technology
- Sophisticated machine concept for maximum productivity
- Quality components manufactured by Liebherr
- Ergonomic workspace for consistent high performance



Liebherr-Export AG  
General-Guisanstrasse 14  
CH-5415 Nussbaumen, Switzerland  
Phone: +41 56-296 1111  
E-mail: [info.lex@liebherr.com](mailto:info.lex@liebherr.com)  
[www.liebherr.com](http://www.liebherr.com)

# LIEBHERR

The Group





## Russia gives green light to scrapping fee

The Russian Federation Council has approved laws introducing a car scrapping fee for both domestic car producers and importers. Due to come into force on September 1, the fee is seen as a step towards expanding fragmentising capacity to handle end-of-life vehicles.



The size of the fee has yet to be decided but the Ministry of Industry and Trade has suggested a base charge of 20 000 rubles per vehicle (US\$ 624) multiplied by a number relating to engine capacity and ease of reclaiming the metal content. It has been rumoured that the fee will be higher for foreign-made cars.

Such a fee is believed to generate around US\$ 4 billion per year for the state budget if car sales reach 2.6 million units (based on the forecast for 2012). Revenues should cover the construction of additional shredding capacity, although it remains unclear whether the new policy will be genuinely helpful in establishing car shredding enterprises, according to PricewaterhouseCoopers (PwC). If Russia were to approach the European rate of car scrapping, this would mean a requirement for at least 20 scrapping plants, each with a maximum processing capacity of 100 000 cars per annum. However, the 'capabilities of the existing facilities are questionable', according to PwC.

[www.pwc.com](http://www.pwc.com)  
[www.eng.autostat.ru](http://www.eng.autostat.ru)



## Russia scraps its final Cold War submarine

Russia's State Atomic Energy Corporation Rosatom has signed a contract with Italy for the decommissioning of the last existing Northern Fleet nuclear submarine no longer in operation. After looking for a suitable partner for years, Italy has stepped forward with an sum of US\$ 8.4 million to remove the 66 reactor compartments from the Cold War vessel which is laid up at Nerpa naval yard on the Kola Peninsula. The 150 million storage facility in Saida Bay already holds 47 reactor compartments, with seven more to follow in

August and September this year, according to the head of Rosatom's submarine dismantling office Anatoly Zaharchev. 'That is more than 40% of the total reactor compartments in question,' he says. The USA has promised to add in US\$ 1.2 million to cover any costs of transporting the spent nuclear fuel from the submarine's two reactors, destined for Russia's reprocessing plant in Mayak. Meanwhile, Russia reports it has injected 50 million rubles (US\$ 1.51 million) in the enterprise this year, promising to do the same in 2013. [www.rosatom.ru/en](http://www.rosatom.ru/en)

## China cuts rare earth mining rights

China, currently the supplier of 90% of the world's rare earth metals, is cutting mining rights on these materials by nearly half in order to allow the industry to 'consolidate'.

Chen Zhanheng, Deputy Secretary-Gen-

eral of the Association of China Rare Earth Industry, explains: 'Reducing mining rights helps streamline rare earth development.' He has also said that 'illegal mining is a bigger issue that the government needs to tackle' - a comment seen by some as

an indication that another shift in rare earth tactics may be on its way.

Rich in heavy rare earth deposits, China established an 11-state managed mining zone in 2011 spanning roughly 2500 square kilometres. Shortly, a market

access standard for rare earth mining will be released. Meanwhile, it has been indicated that qualified enterprises should achieve annual revenues of at least Yuan 1 billion (US\$ 156.8 million), adds the Economic Information Daily.

advertisement

### THE BEST FINES EDDY CURRENT SEPARATOR

**MAGNAPOWER**  
magnetic processing technology

LESS WASTE  
MORE NON-FERROUS FINES

Tel: +44 (0)1527 557 092  
[www.magnapower.co.uk](http://www.magnapower.co.uk)

Supporting your success. MeWa Recycling Technology.

From e-scrap, fridges, tyres and metal compounds up to oil filters, cables, catalytic converters, spray cans and even organic waste for biogas plants, MeWa is developing and building recycling machines and engineering turn-key plant solutions: reliable, durable, powerful. To get secondary raw materials in the highest qualities.

Always at  
your service



**MeWa**  
Recycling Anlagen

*Der Pioneer*

MACHINES   PLANTS   PROCESS SOLUTIONS

MeWa Recycling Maschinen und Anlagenbau GmbH  
D-75391 Gechingen · Tel. +49 (0) 7056 925-0  
info@mewa-recycling.com · www.mewa-recycling.com

**ilg**

Industrielärmschutz GmbH  
Forstweg 7  
52382 Niederzier  
Germany

T: +49 (0) 24 28/94 33-0  
F: +49 (0) 24 28/94 33-33

E-Mail: info@ilgmbh.de  
Internet: www.ilgmbh.de

**Sound insulation**  
especially for recycling plants



**A-WARD**

**FIRST IN  
CONTAINER LOADING**

The world's first container tilters, making  
bulk material handling more profitable.



Email: sales@a-ward.com  
Phone: +39 340 4009 996

[www.a-ward.com](http://www.a-ward.com)

## / Visys introduces 100% digital sorter

**Belgium-based Visys, which specialises in expert vision systems, has released a smaller version of the Cayman optical sorter.**

Completely digital, this features the latest FPGA Polarys engine and is equipped with the latest in2GaAs technology, thus delivering extended detection capacities.

The Cayman F - from bottle2flake - is targeted at companies requiring high-resolution optical solutions for fractions down to flake size, such as PET bottles. It is fitted with in-air detection which requires no background. And because the machine has no moving parts, maintenance requirements are low.

Visys,  
Hasselt, Belgium,  
Phone: +32 011 249 191,  
Fax: +32 011 249 199,  
E-mail: [info@visysglobal.com](mailto:info@visysglobal.com)  
[www.visysglobal.com](http://www.visysglobal.com)



## / Eriez's purity-driven rare earth drum separator

**Eriez has introduced an all-new Rare Earth (RE) Drum Separator - the Erium 3000. Described as a 'permanent magnetic power source', the device is reputed to give exceptional performance in purifying large quantities of numerous bulk materials including plastics, metal powders and chemicals.**

Equipped with neodymium-boron-iron rare earth permanent magnets, the Erium 3000 is able to create a magnetic field that is 25 times stronger than conventional ceramic or alnico units without any increase in size. This extra strength helps in removing very fine iron or only weakly magnetic contaminants from slurries as well as a diverse set of dry materials, including: abrasives, ceramic material, chemicals, foods, glass cullet, gypsum and quartz powder, kaolin clay, plastics,

paper, metal powders and soda ash. The increased strength also results in high gradients and enhanced holding force, allowing the drum to hold the encountered contaminants so tightly that wipe-off by-product flow is almost completely eliminated. According to Eriez, the drum is especially suited to operations requiring high product purity. The RE Drum Separator includes standard models in diameters from 305 to 915 mm, and widths from 305 to 1525 mm. These units are said to provide efficient separation at feed rates of up to 100 tonnes per hour.

Eriez,  
Pennsylvania, USA,  
Phone: +01 814 835 60 00,  
Fax: +01 814 838 49 60,  
E-mail: [eriez@eriez.com](mailto:eriez@eriez.com)  
[www.eriez.com](http://www.eriez.com)



## / Washer gives plastics intense clean



**Neue Herbold has released a friction washer on to the market which belongs to its new FW Series. The machine rigorously cleans all types of plastics - from film flakes and granulate to PET bottles and other rigids.**

The friction washer is mounted on a zinc-coated frame and comes equipped with a three-phase motor and an over-dimensioned V-belt drive. Due to its inclined position, any material that enters the

process is transported in an upward motion, providing an intensive wash. During washing, all fines, soaked fibrous paper and water are spun off and subsequently separated through the perforated screen cage. This surrounds the high-speed shaft and ensures the accumulated material flows down through the housing to the lower discharge pipe. If extra water needs to be added during the operation, this can be done by pouring it through the lid and straight into the material chamber; tests have indicated that this further improves the machine's cleaning effect. Additionally, the FW's water injection nozzles enable fresh water or reused water to be sprayed directly at the screen cage in order to clean it thoroughly and prevent clogging.

Neue Herbold Maschinen  
und - Anlagenbau GmbH,  
Sinsheim, Germany,  
Phone: +49 726 192 480,  
Fax: +49 726 192 48 99,  
E-mail: [info@neue-herbold.com](mailto:info@neue-herbold.com)  
[www.neue-herbold.com](http://www.neue-herbold.com)

## / Pallmann introduces powerful Leopard shredder

**The Pallmann Group of Germany has developed a powerful, single-shaft shredder known as the Leopard - the company's largest to date - which has a state-of-the-art 3000 PSRE rotor located at its heart.**

Designed to operate even in challenging conditions, the heavy-duty shredder is especially suited to separation tasks such as tyre rubber from steel inlays, as well as cleaning tyre wire, carpets, electric cables and electronic waste. The Leopard can be retrofitted to many existing systems but can also serve as a stand-alone unit. It is capable of rotating the shears in both directions, and the regular reversing action of the rotor renders them self-sharpening. The upper side of the machine housing features an optimal opening angle with a discharge flap, allowing users to eliminate undesirable substances during the course of operation. Further access to the rotor and grinding chamber is



facilitated by the shredder's large screens, which open downwards, in combination with its large doors. These features help to realise high material throughputs and smooth handling, according to the company. The narrowing grinding gap makes it possible to dispense with a pusher; the rotor's advanced geometry pulls the material into the cutting chamber, the developer points out.

Pallmann Maschinenfabrik,  
Zweibrücken, Germany,  
Phone: +49 633 280 21 37,  
Fax: +49 633 280 25 33,  
E-mail: [steffen.depold@pallmann.eu](mailto:steffen.depold@pallmann.eu)  
[www.pallmann.eu](http://www.pallmann.eu)

# Shedding light on lamp recycling



A variety of lamps fall within the scope of the EU Directive on Waste Electrical and Electronic Equipment. This article, written by a specialist in the field, assesses treatment possibilities and recycling technologies, while also addressing challenges in lamp recycling and the contentious issue of rare earth supply.

The first priority of the EU's Directive on Waste Electrical and Electronic Equipment (WEEE) is the prevention of electronic waste. The second purpose is to minimise the proliferation of hazardous substances such as mercury. And a third objective is the reuse, recycling and other forms of recovery of e-waste in an environmentally sound manner. In the spirit of these objectives, all straight and compact fluorescent lamps, high-intensity discharge lamps and low-pressure sodium lamps (the so-called 'Category 5' lamp - see Figure 1) fall within the scope of the WEEE Directive and, as a result, must be collected and treated when they reach their end-of-life stage.

Although discharge lamps contain mercury, needed for highly-efficient light production, they are extremely economical and better for the environment than conventional incandescent lamps. Discharge lamps last up to 10 times longer and consume up to five times less electricity.

The amount of mercury used in discharge lamps has been systematically reduced over the years. However, to serve the environment further, it is essential to ensure that products containing hazardous substances are disposed of correctly at the end of their life. Successful completion of the production-recycling-production cycle can be achieved only if all stakeholders play a part, including consumers.

### Challenging combination

Owing to its characteristics, the lamp market in the EU requires a separate logistics and recycling approach.

Each year, EU producers put 1 to 1.2 billion lamps on the market. This high volume, and the low weight in combination with their fragility and the presence of mercury, makes it challenging to set up an efficient infrastructure for the collection and recycling of lamps. The corresponding costs constitute an addi-

tional issue given that these range from 25% up to 100% of the cost price of the lamp (excluding incandescent lamps).

In order to keep sight of achieving legal targets in the most efficient way, Europe's lamp manufacturers decided to act as founding fathers of not-for-profit Collection & Recycling Service Organisations (CRSOs). These act according to national laws, implementing the WEEE Directive and performing tasks for end-of-life lamps, including:

- Contract service providers to arrange collection, transport and recycling;
- Recovery of mercury, thus reducing its content in the waste stream;
- Monitoring and reporting the execution and results of collection and recycling to the EU member state authorities.

A particular challenge is the setting-up of an infrastructure fitting national circumstances, stimulating the return of lamps as well as effective and cost-efficient take-back systems and recycling.

### Variety of recycling companies

Initially, the focus was on collecting larger volumes of lamps from professional customers through direct collection services and contracts with municipality depots. The CRSOs expanded their network by voluntary initiatives with, for example, wholesalers and/or electrical installers and/or retail chains. As a general rule, smaller collection boxes are used to collect smaller volumes which are then consolidated before being transported to recycling facilities that receive containers with either tubular fluorescent lamps or all other shaped lamps.

Spread across the EU, there is a large variety of recycling companies which are either: specialising in recycling end-of-life lamps (such as DELA, Nordic Recycling, Larec, eds-r, Balcan Engineering and Relight); recycling different types of electronic appliances including lamps



CFL lamps - the so-called energy-saving lamps - contain substances like flame retardant plastics for which incineration to recover energy is currently the only option.



After cleaning the fraction, fluorescent powder can be reprocessed into new phosphors.



Each year, EU producers put 1 to 1.2 billion lamps on the market.



Bertie Bulb, the mascot of UK-based free collection network Recolight has toured Britain to help raise awareness of the importance of recycling CFLs.



# Balcan Lamp Recycling Systems

## Capacities from 100 Kg to 2000 Kg per hour

- Most types of lamps accepted, both crushed and whole.
- Modular system offering upgrade potentials.
- Best quality output for maximum reuse potential.
- No need to segregate different lamps.



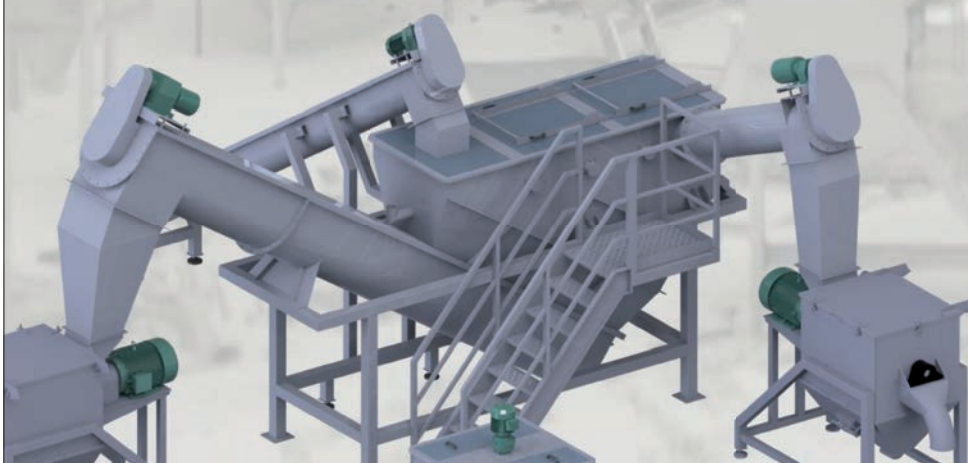
Banovallum Court, Boston Road Industrial Estate, Lincolnshire, Horncastle,  
LN9 6JR, United Kingdom. Telephone +44 1507 528500 • Email info@balcan.co.uk

[www.cfl-lamprecycling.com](http://www.cfl-lamprecycling.com)



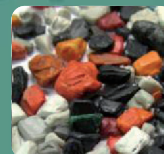
## HERMION | Dutch Recycling Technology

*Taking care of your future!*



- Machinery
- Consultancy
- Plastics

HERMION BV  
Veerweg 5-7 | 5145 NS | Waalwijk | The Netherlands  
Tel +31 (0)416 820218 | Fax +31 (0)416 347979  
[www.hermion.nl](http://www.hermion.nl) | [info@hermion.nl](mailto:info@hermion.nl)



11-13 SEPT 2012 | NEC BIRMINGHAM UK | HALL 20 - STAND 06M50

(for example, Saubermacher, Van Gansewinkel and Stena); or recycling household waste as well as electronic waste in dedicated installations (this group includes Indaver and Veolia).

### Different technologies

Various methods have been established for the recycling of discharge lamps, and these deliver the following fractions: glass, aluminium, metal, plastics, mercury and fluorescent powders. The purity of these different fractions depends on the technology applied.

Lamp recycling installations include both dry and wet technologies. Both technologies can either handle a specific type of lamps (end cut-air push) or a stream of mixed lamps (shredder methods).

Since gas discharge lamps contain mercury, all lamp treatment processes must be conducted in under-pressure systems and the recycling facilities must have special waste air purification systems.

- The 'end cut-air push' process is used for tube-shaped fluorescent lamps and has been developed continuously over the years. Most current systems include the possibility of phosphor recycling and automatic lamp input.

The main steps in 'end cut-air push' processes are: the aluminium/lead glass ends are cut off fluorescent lamps; the phosphor powder is blown out the remaining glass tube or sucked out if the tube is broken; the cleaned tube is crushed; and contaminating metals are separated off to ensure clean glass.

- Dry shredder methods allow all types of lamps to be processed, including broken lamps and production waste.

The main steps of dry shredder methods include the crushing of lamps, and then the separation of fractions according to their particle sizes in a rough, a medium and a fine fraction. The first fraction consists of aluminium lamp caps and other metal parts, and the second is the plastic/glass fraction with a particle size of around 5 mm. Phosphor and glass dust is removed from this material, and the plastics can be blown out. The fine fraction contains glass dust and phosphor powder.

Finally, the fractions continue along different routes. The metal parts, for example, go forward for metal recycling, while the mixed glass is used for glass products with

lower purity requirements or as aggregate material for building, insulation, etc.

- Wet shredder methods also allow the processing of all lamp types, yet again including broken lamps and production waste. When visiting lamp recycling facilities in Europe, a large variety of dry and wet shredder methods can be observed (for example, from Balcan Engineering, Galloo, Indaver, Blu Box, Nordic Recycling and DELA).

Meanwhile, many recycling companies have the capability to remove mercury from phosphor/fine glass either via thermal treatment/distillation to its pure form (in dry as well as in wet shredder systems) or chemical removal to a fine powder (in wet shredder systems).

Meanwhile, the treatment of lamps has been optimised in such a way that the recycling rate of tube-shaped fluorescent lamps is above 95%. However, to keep the total recycling rate of all WEEE-relevant lamps to this excellent level is challenging given that other types of lamp such as the CFL - the so-called energy-saving lamp - contain substances like flame retardant plastics for which incineration to recover energy is currently the only option.

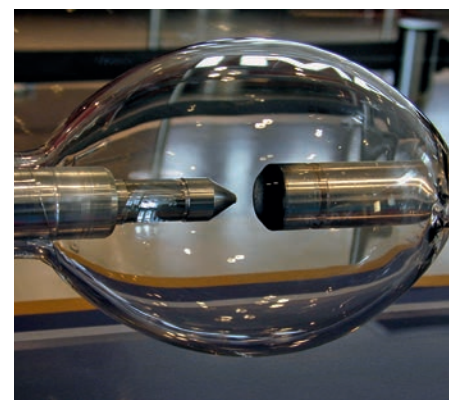
### Three pillars

In the past year, the European lamp industry has given plenty of focus to a very interesting project that further contributes to 'closing the material loop'. It fits beautifully into the EU initiative to regain strategic raw materials which is based on three pillars: to ensure a level playing field in access to resources in third countries; to foster sustainable supply from European sources; and to boost resource efficiency and recycling.

Although recovering rare earth metals from the fluorescent powder adds only marginally to the recycling rate, it is worthwhile because the right mix of these raw materials is essential for guaranteeing the highest quality of light. The lamp manufacturers have a need for several rare earth metals such as europium, yttrium and terbium, for which scarcity is expected in the coming years. The demand for rare earth metals is increasing due to the growth in applications like magnets, electric cars and wind energy (see Figure 3).

Realising that current supply is not sufficient, China - the world's biggest 'owner' of rare earth metals - recently decided to restrict its export quota for such materials to less than

Many lamps fall within the scope of the WEEE Directive and therefore must be collected and treated when they reach their end-of-life stage. From top to bottom: straight fluorescent lamps, compact fluorescent lamps, high-intensity discharge lamps and low-pressure sodium lamps.



A-1

# A-1 Specialized Services & Supplies, Inc.

*Striving to Preserve Resources and the Environment*



With more than 30 years of experience, A-1 Specialized is a global leader in the recycling of Platinum Group Metals from salvage automotive catalytic converters and is an important marketer of platinum, palladium and rhodium to meet the growing needs of consumers. Managed in accordance with the highest standards, as certified under ISO 9001, ISO 14001 and OHSAS 18001.

## Buyers of Scrap Catalytic Converters

P.O. Box 270, Croydon, PA 19027 • [www.A-1Specialized.com](http://www.A-1Specialized.com) • (215) 788-9200 • (800) 251-2100



Figure 1 Overview of gas discharge lamps as defined in the EU's Waste Electrical and Electronic Equipment (WEEE) Directive

Types of lamp	Description Technology Shape	Type of lamp	Construction shape/lamp type
Fluorescent lamps	Low-pressure discharge lamps (several mbars), contain a noble gas and mercury. fluorescent materials convert radiation to visible light	Tubular	> 15
Fluorescent lamps, non-tubular in shape		Various shapes	> 5
Compact fluorescent lamps (CFL-NI)		Varied with insertion base	> 25
Energy-saving lamps (CFL-I)		Varied with screw base	> 25
High intensity discharge (HID) lamps	High-pressure discharge lamps (> 1 bar), contain a noble gas, mercury, sodium, rare earth elements		> 50
	Low-pressure discharge lamps (several mbars), contain a noble gas and sodium		> 5

Figure 2 Schematic representation of the collection, transportation and recycling of end-of-life lamps

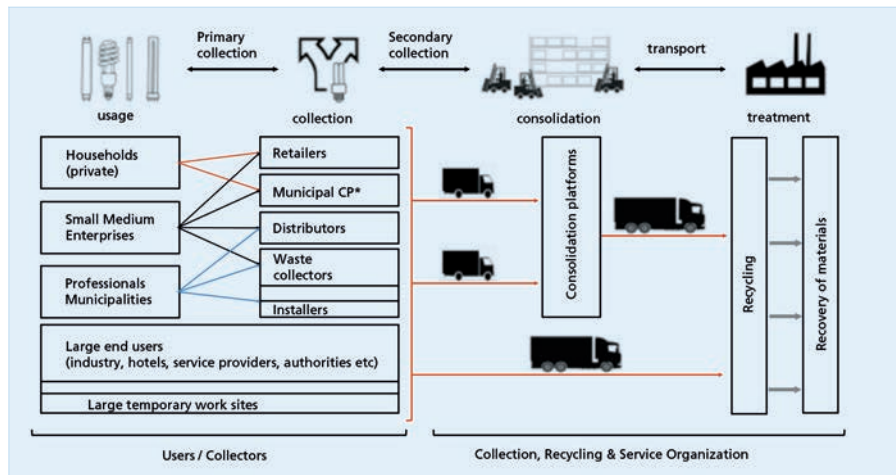
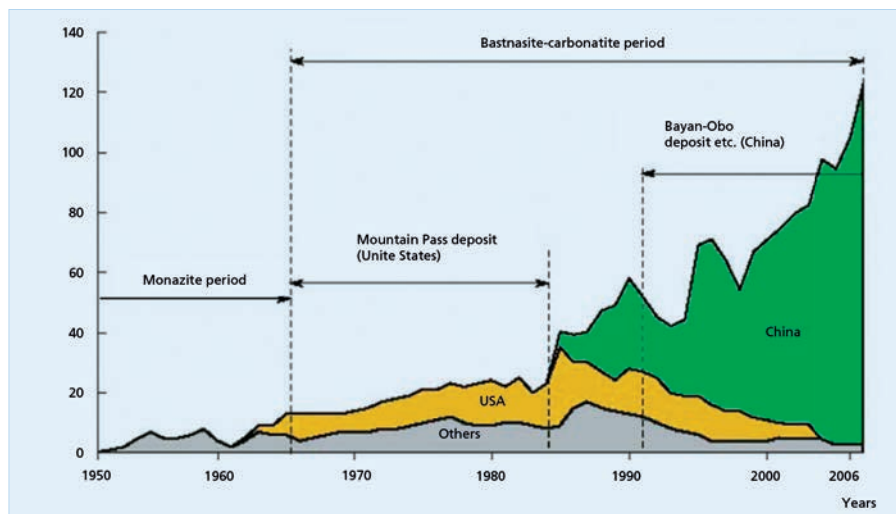


Figure 3 Percentage of rare earth metals used per end use (2010)



35 000 tonnes per year, while at the same time completely banning exports of rare earth metals such as, among others, dysprosium, terbium, thulium, lutetium and yttrium.

### Work-intensive and costly

This development has spurred Europe's lamp manufacturers into taking appropriate action by 'turning waste back into light'. The process of turning the fluorescent powder back into the valuable material of new lamps is not without its hurdles: it is work-intensive and costly.

First of all, the powder must be collected (and not disposed off) after the recycling of end-of-life lamps. The fluorescent powder fraction is either contaminated with mercury ('end cut-air push' method) or with mercury and fine glass (most shredding methods). After cleaning the fraction, the fluorescent powder can be reprocessed into new phosphors via two alternative routes: phosphor regeneration; or rare earth metal recovery through extraction and separation followed by phosphor production.

Since the fluorescent powder mix is different in the lamps coming from the individual brands, the first method is only possible when the fluorescent powders are separately collected. The phosphors have to originate from production failures or from 'end cut-air push' recycling plus phosphor mix identification. The second reprocessing method will be the most common one, using a series of complex chemical process steps to separate the very similar chemical rare earth metals.

Only a few companies in the world are able to perform the reprocessing; and to make it economically feasible, the recovered powders have to be consolidated. The realisation of these kinds of projects depends on the ease or even the possibility of transporting fractions across borders. Here, the EU has to play a role so that their initiative can succeed. □



Thomas Marinelli

The author of this article, Thomas Marinelli, is Director of WEEE Management at Philips Lighting, Department Sustainability & Government Affairs, in Eindhoven, the Netherlands. He can be e-mailed at: [thomas.marinelli@philips.com](mailto:thomas.marinelli@philips.com)

# Circuit board recycling

For the recent BIR Convention in Rome, the world recycling body organised a workshop entitled 'Recycling circuit boards from electrical and electronic equipment'. The focus of the event was the status of circuit boards as daily fare for a number of hydro- and pyro-metallurgical facilities around the world. Here, Recycling International picks out some of the highlights.



The BIR world recycling organisation has compiled a map (reprinted with this article) which identifies upwards of 20 companies around the world which are engaged in refining metals and in certain cases other materials from circuit boards via the hydro- or pyro-metallurgical route, it was confirmed at the workshop in Rome. The circuit boards are separated from old or new e-waste or e-scrap.

BIR Environmental & Technical Director Ross Bartley later observed to Recycling International: 'We think we are close to the full picture of environmentally soundly managed hydro- or

pyro-metallurgical facilities which are licensed, permitted or otherwise authorised and which are actually processing electronic circuit boards.' The data have been confirmed by a number of companies buying and selling circuit boards for material recycling, while the map itself has generated much interest not only from businesses but also from authorities.

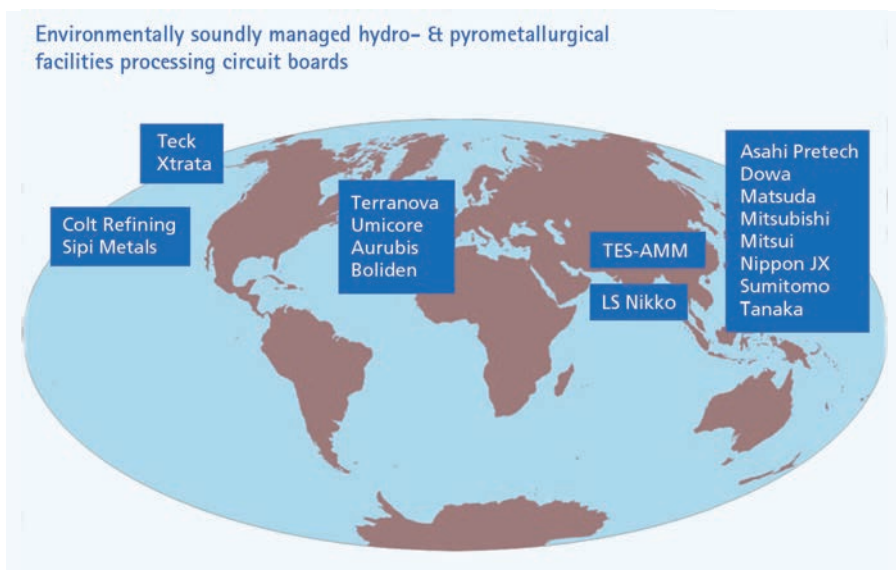
Mr Bartley also explained in Rome that the world body's member companies have been recycling electrical and electronic equipment for decades and that, since the turn of the Millennium, BIR has been fully engaged in the

UN-EP Basel Convention Mobile Phone Partnership Initiative and in its on-going work on the environmentally sound management of computing equipment under the PACE project. He also indicated that BIR, which ran a Wire and Electronic Equipment Committee for several years in the late 1990s, is considering 'reconstituting and reinvigorating' a committee to focus on recycling plastics and metals from electrical and electronic equipment.

## Decline in precious metals

There are various qualities of circuit board in existence, with old motherboards offering some of the best returns for processors because they contain typically 200 grams of gold per tonne compared to between 30 and 100 grams for newer-generation boards, it was explained by Peter Hagemann, Head of Production and Sales at Sims Recycling Solutions in Germany. He added that a tonne of new-generation motherboards also contain typically 15-20% copper, 200-300 grams of silver and less than 10 grams of palladium.

The serious decline in circuit boards' precious metal content is rendering this area of business ever more difficult, according to Mr Hagemann. The same speaker also pointed to the strong growth in arisings of waste electrical and electronic equipment (WEEE) in the EU, with quantities likely to climb from around 9 million



# a global picture

tonnes in 2008 to 12.3 million tonnes by 2020. Richard Debaue, an advisor to French company Terranova which has an annual pyrolysis capacity of 30 000 tonnes dedicated to the treatment of electronic circuit boards, agreed that some of these - for example, the boards in televisions - have a significantly lower value than others. He also highlighted a need to strike a balance between environmental requirements and profitability, going on to say that manual depollution and dismantling can satisfy the high political objective of providing employment. A spokesman for Canadian company Teck outlined current and planned in-house capacities for refining a range of metals from circuit boards in its lead-zinc smelter. The company's Trail smelter will continue to utilise cathode ray tube (CRT) glass in its operation with the application of a modest gate fee, also noted David Goosen, the company's Business Development Manager.

## Complex mix

The workshop in Rome, which was chaired by Manuel Burnand of France-based Coframetal, also heard from Dr Otmar Deubzer, Scientific Consultant at the United Nations University's Institute for Sustainability and Peace. He noted that printed circuit boards contain a highly complex mix of materials which do not facilitate recycling, going on to underline the importance of good as well as correctly applied pre-processing. Attempts to make the WEEE recycling chain in India more environmentally sound and safer without forcing 'informal' family businesses out of the sector

were addressed in Rome by Daniel Ott, Programme Officer at Swiss research institute EMPA. He also touched on circuit board flows in Colombia where collection rates are quite high via the informal sector but where the emphasis is put on high- and medium-grade boards, resulting in an 'outsourcing' of the environmental cost which, the speaker believed, should be prevented. □



Daniel Ott, Programme Officer at Swiss research institute EMPA.



BIR Environmental & Technical Director Ross Bartley.



Manuel Burnand of France-based Coframetal.

advertisement

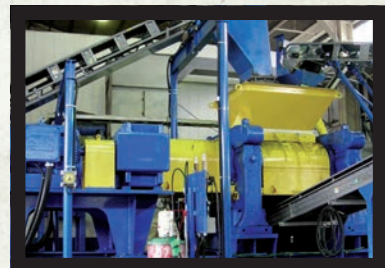
# THINK OF IT AS A FEW EXTRA TONS OF PROFIT.

With new equipment and new levels of performance, Granutech-Saturn continues to lead the world in tire recycling systems. But at the end of the day, all that really matters is a few extra tons of clean, high-quality crumb rubber.



### Introducing the Granutech Super 80 Grizzly (S80)

Featuring the highest capacity in the industry—8 t/hr and -1/2" output!



### Our G-4 Refiner Mill

offers 25-50% more capacity than competitive designs.

Get the most durable, high performance tire recycling solutions from Granutech-Saturn Systems.

+1-877-582-7800 • [www.granutech.com](http://www.granutech.com)





# From ash to cash

Worldwide, coal power plants are spitting out millions of tonnes of fly ash each year. UK-based RockTron International has found a way to turn this powder into valuable products, such as activated carbon that can be sold at prices of around £700 per tonne (US\$ 1050). For the moment, however, most fly ash continues to be dumped in dry tips or ash lagoons.

Philip Michael draws a grim picture of all the dilemmas he has faced as co-founder of an international recycling company in the last 25 years. Suppliers of its feedstock - the coal power plants that are throwing out large quantities of fly ash - generally prefer to dump this powder since their focus is primarily on producing electricity. Worldwide, over 6 billion tonnes of fly ash is already stored in dry tips and ash lagoons. Fly ash that does get recycled - not counting that used in land reclamation, road construction or as a filling medium for old mines which some experts view as unregulated landfilling - is sold as a cement replacement to the construction industry. However, a collapse in demand for cement products made it impossible for RockTron to gain a foothold for its new cement substitutes.

'As soon as the recession started to kick in, cement companies clawed back to protect their own assets,' comments Mr Michael. As a result, RockTron's first industrial-scale plant was temporarily mothballed. Nevertheless, RockTron has stayed focused on research and development of new products from fly ash. 'We are the only company in the world that can recycle 100% of wet and dry fly ash,' he states. This has led to the invention of products that have a much higher value than fly ash which is used as a cement replacement, such as activated carbon or glass spheres with a microbicide coating.

Today, RockTron is on the brink of a new era: the company has two industrial-scale plants on the drawing board for construction in Russia; negotiations with various power stations to build

plants in Europe and Malaysia are on the way; more than 300 companies are currently testing their material; and the first new products are already entering the market.

But Mr Michael has had to take many risks in recent decades. 'I mortgaged my house several times to invest money in RockTron and nearly lost it all,' he says. But his focus remains: 'My whole life has been about research and development. That's what got me this far and I'll never stop doing that.'

### Many safety regulations

In the midst of Gale Common in Yorkshire, a small building is tucked away between several dewatering tanks that each contain 600 000 gallons of fly ash slurry. Here, the research and development centre of RockTron is located.

Gale Common is the UK's largest disposal site for fly ash. Some 35 million tonnes of the ultra-fine powder has already been transformed into a lush area where pheasants shamble around the lanes and badgers have found a new home. However, maintaining this little paradise is a costly exercise given that so many safety regulations must be met. Fly ash contains traces of heavy metals such as arsenic, selenium, cadmium and mercury. To prevent leaching into ground water, Gale Common has installed barriers and a water monitoring system.

Landfilling fly ash is still a common practice for power plants, although this has become the focus of public debate - especially in the USA. In 2008, a billion gallons of slurry from a coal ash pit in Tennessee destroyed homes and polluted nearby streams. Recently, the US Environmental Protection Agency marked 45 ash lagoons as hazardous to the point that it 'will probably cause loss of human life if a serious accident occurs'.

### Mechanical classification

Until now, reuse of fly ash in cement has been considered the most advanced way to recycle this powder. But Mr Michael is not that impressed. 'It merely comes down to straight mechanical classification in which fly ash is separated into different particle sizes,' he explains. 'The carbon tends to go in the coarser fraction. Only the finer fraction is used as a cement replacement.'

This creates two problems: much is still thrown away, and only when the carbon level is low enough at the outset will the finer fraction become useful. However, many coal power plants do have a problem with the amount of



Philip Michael, co-founder of RockTron.



A view of Gale Common, an area covering around 750 acres. Already, 35 million tonnes of fly ash have been transformed into this lush area.



Ferrybridge C in Yorkshire, UK, is a 2000 MW power plant that emits 300 000 tonnes of fly ash every year. Fly ash is collected in a dry pit at the power station.



Drying machine for carbon.



**CABLE AND AC RADIATORS**

**VISIT US**



**RESOURCE EFFICIENCY & WASTE MANAGEMENT SOLUTIONS**  
NEC Birmingham, UK 11-13 Sept 2012

**outdoor stand 0A253**




**BECAUSE QUALITY MATTERS!**

**COMPACT 380 VLT**

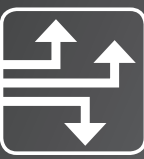
[www.mgreycling.it](http://www.mgreycling.it)

# Quick Detection Spectrometers


from the specialist for all kinds of detections of **Thermoplastics and Textiles**




**Quick Analysis**




**Special Applications**



**High Separation Demands**




**Black Plastics and Fillers measurable**




**GUT**  
Environmental Technologies


**Precise. Extremely Fast. Affordable.**



**portable**



**stationary**



**online**

More about the products and developments of the IoSys series in the Internet at:  
[www.gut-stuttgart.de](http://www.gut-stuttgart.de) · Tel.: +49 (0) 711 - 257 39 79

starscreen technology at its finest! **backers** maschinenbau





[www.backers.de](http://www.backers.de) • [info@backers.de](mailto:info@backers.de) • 0049(0)5936/9367-0



**KW-Generators**

- Powerful
- Innovative
- Load limit control
- Torque control
- Integrated system tester
- Integrated insulation monitoring
- Adjustable magnetic power




**KW-Generator GmbH & Co.KG**  
Bänglesäcker 24  
73527 Schwäbisch Gmünd-Lindach  
Germany  
Fon: +49 (0) 7171 104 17 - 0  
Fax: +49 (0) 7171 104 17 - 29  
[info@kw-generator.com](mailto:info@kw-generator.com)  
[www.kw-generator.com](http://www.kw-generator.com)

[www.kw-generator.com](http://www.kw-generator.com)

carbon in the fly ash. In the last 15 years, environmental agencies around the world have started complaining about gaseous emissions from power plants. As a result, apart from scrubbers that capture fly ash, low NO<sub>x</sub>-burners have been installed at power plants to reduce nitrogen oxide emissions; however, this has also resulted in fly ash having an unburned coal content, making it unsuitable for use in cement.

### Exclusive rights

Over the same period, many power stations have been privatised and have started burning imported coal from all over the world. 'This coal is cleaned to an average of 10% ash, since nobody wants to ship ash,' says Mr Michael. 'But the power stations are still only as efficient as they always were in burning the carbon part of the coal. So they had the same amount of unburned carbon at the back end. But now it was mixed with a lower quantity of ash.'

With the level of carbon in the fly ash going up, it became increasingly important to develop a sophisticated technology to get rid of it. That is why Mr Michael - who has a degree in metallurgy - adapted a process to the recycling of fly ash that had been developed for treating fine parts of coal waste. 'Conventional flotation

techniques did not separate carbon from fly ash because this powder is too fine,' he explains. After several years of research in collaboration with Dr Rainer Imhof of Wales-based company Maelgwyn Mineral Services, a new flotation vessel was developed that targeted ultra-fine particles of less than 10 µm in size, making it possible to float the carbon from the fly ash slurry. 'It was really a major breakthrough to get a decent separation between the two,' he says. 'RockTron has exclusive rights to use that particular flotation vessel and the type of reagent in our process.'

### Running out of space

RockTron's technology was developed in the late 1980s at a time when a Berlin power station could no longer sell its fly ash because its carbon level was too high. 'They were still debating whether to build a plant that used our process or another, when the Berlin Wall came down,' notes Mr Michael. 'Then they had the whole of East Germany for dumping their waste.'

A second attempt to get a RockTron plant built - at Aberthaw power station in the UK - also met with failure. The financing was going to come from Irish company Irish Cement, but an agreement with the power company could not be reached. Mr Michael recalls: 'They said "Our

core business is making electricity and not recycling waste. Your process is unproven while landfill is a proven solution for fly ash.'"

He continues: 'One key reason why we ultimately got funding from Scottish and Southern Energy (SSE) was that one of their power stations, Fiddler's Ferry in Warrington, was potentially running out of space to dump its waste.' This 2000 MW power plant is surrounded by a 16-million-tonne fly ash stockpile contained in five lagoons. RockTron's first industrial-scale plant is sited on the edge of the main lagoon and started operating in 2010. SSE invested £32 million (US\$ 64 million) in a plant which can recycle 800 000 tonnes of fly ash per annum - almost twice the amount Fiddler's Ferry spits out.

### Few possibilities

Part of the contractual agreement with SSE was that RockTron would focus solely on selling its products to the cement industry. 'However,' states Mr Michael, 'the big cement companies - Holcim, HeidelbergCement, Lafarge, Cemex, Tarmac - control 80% of the market, which makes market entry a challenge. The European Commission has opened anti-trust proceedings against a number of cement manufacturers for suspected breaches of EU rules and has in the

## Heaps of fly ash

Coal fuels more than 40% of the world's electricity, although many countries have a much greater dependence on the 'black gold', including South Africa (93%), Poland (92%), China (79%), India (69%) and the USA (49%). Between 2000 and 2010, coal consumption increased from around 4.6 billion tonnes to 7.2 billion tonnes. This surge, driven by developing economies, suggests coal will remain a key factor in power generation for many years to come.



Burning of coal in power plants creates residues: fly ash; flue-gas-desulphurisation products; bottom ash; and boiler slag. Fly ash is removed from flue gas by electrostatic precipitators or other gas-scrubbing systems. This ultra-fine, grey powder makes up around 55% of these so-called coal combustion products.

In the USA, some 42 million tonnes of this powder is dumped each year while Russia landfills approximately 21.6 million tonnes of coal waste on an annual basis. Australia leaves most of its fly ash unused, amounting to 9.1 million tonnes per year. Reliable data are not available for China but since the country is now burning more coal than the USA, this results in huge volumes of fly ash which are mostly dumped.

Fly ash can be used in the pavement layers of road construction.

## RockTron's technology

Apart from fresh fly ash, RockTron can use fly ash from lagoons or dry tips as a feedstock for its process, which consists of five steps:

- 1 Fly ash is sluiced with process water into a pump suction tank where the pulp density is controlled. The slurry then goes into the cenosphere removal tank where these spheres are removed using gravity.
- 2 The remaining fluid slides into the flotation circuit, where air is pumped into it. This creates bubbles to float the carbon off. The next circuit cleans the carbon to increase the grade (>90%). The carbon is then dewatered and, if required, flash dried.
- 3 Removal of spherical magnetic particles from the slurry is optional.
- 4 The remaining alumino-silicates are then pumped into high-efficiency hydro-cyclones (used in the clay industry) and classified into two particle size groups: Alpha (5-9µm) and Delta (60-80µm) particles. Both are then dewatered and stored.
- 5 The water circuit is closed to prevent leaching of the heavy metals that fly ash contains.

# UNTHA

shredding technology

The reliable brand!

## Reliable and economical shredding technology

Learn more about our shredding solutions and product innovations on [www.untha.com](http://www.untha.com)

**You Tube** Watch our shredders in action!  
[www.youtube.com/unthashredders](http://www.youtube.com/unthashredders)

UNTHA shredding technology  
Moldanstrasse 141, 5431 Kuchl/Salzburg, Austria  
Tel: +43 6244 / 7016-0, Fax: +43 6244 / 7016-1, [info@untha.com](mailto:info@untha.com)  
[www.untha.com](http://www.untha.com)

Visit us at: RWM, 11-13 Sept 2012 at NEC Birmingham! Hall 17, Stand no.: H39 - G38

### Upcoming ICM Events

[www.icm.ch](http://www.icm.ch)

WRF  
2012



电子电器废料循环利用亚洲论坛  
Electronics Recycling Asia  
November 13 – 16, 2012, Guangzhou, China  
Conference, exhibition and plant tours  
organized by World Recycling Forum

IERC  
2013



12<sup>th</sup> International Electronics  
Recycling Congress IERC 2013  
January 16 – 18, 2013  
Salzburg, Austria

IARC  
2013



13<sup>th</sup> International Automobile  
Recycling Congress IARC 2013  
March 13 – 15, 2013  
Brussels, Belgium

ICM AG, Schwaderhof 7, 5708 Birrwil, Switzerland, [www.icm.ch](http://www.icm.ch), [info@icm.ch](mailto:info@icm.ch), +41 62 785 10 00





Fly ash as a raw material.



Magnetite: this magnetic material is quite heavy, especially when compared to the cenospheres. RockTron wants to develop a process to make this material suitable for use in dense media separation.



After the removal of cenospheres, carbon and magnetite, the remaining solid alumino-silicates are separated into a coarser and finer fraction: alpha and delta particles. This bowl contains delta particles.



Solid alumino-silicates can be turned into cement blocks.



Pneumatic flotation vessels: RockTron uses three types of vessel to float the carbon.

past fined the industry in several cases. But the fines are small when compared to the size of these companies; they can afford to pay them.' He goes on to note: 'In addition, they started acquiring their customers, the ready-mix concrete companies, so you had a complete vertical integration of this industry. That left few possibilities for RockTron to sell its cement replacement products to other clients. The material coming out of our plant had a worth of £47 per tonne (US\$ 94). But these big cement companies were offering us about £11 per tonne (US\$ 22).' Furthermore, 'we were also going into a very deep recession,' he points out. 'A lot of business got lost. So SSE decided to mothball the RockTron plant in March 2012 until the concrete industry picks up again. They found out that even with all their muscle, they couldn't get the cement companies to buy sufficient tonnage to justify keeping the plant open.'

In 2010, RockTron sold its share in the RockTron plant at Fiddler's Ferry plant to SSE, thus ending the focus on the cement industry as clients. 'Only after that could we really start developing other applications for our products,' explains Mr Michael.

### Most valuable portion

On a piece of paper, Mr Michael quickly sketches out what fly ash comprises: hollow alumino-silicates or cenospheres (1%), carbon (10-20%), magnetite (3-7%) and solid alumino-silicates (70-85%). The RockTron process is capable of separating these five components to a high level of purity. The cenospheres represent the smallest but most valuable portion at £200-900 per tonne (US\$ 300-1350) depending on the size. Since these glass spheres are hollow, they can be used as fillers, giving weight reduction/good hardness and making them especially suited to aerospace industry applications.

The solid alumino-silicates can replace all sorts of fillers such as chalk, calcium carbonate or manufactured glass beads in plastics, coatings, rubber and paints. They are lighter than traditional fillers, chemically inert, disperse evenly, reduce melt viscosity and increase scratch resistance of polymers. Their only disadvantage is that they are as grey as the fly ash from which they stem. However, plenty of users require black and grey colours such as for flooring products in industrial buildings, and it is also possible to sandwich these fillers between other, brighter layers. RockTron has sampled its material to around

300 different companies in the USA, Europe and Asia. Evaluations are at different stages as potential clients gauge whether the fillers meet their particular requirements. Testing cycles can be up to four or five years because the formulations are complex, especially for tyres.

Ford Motors is one of these companies as it targets reducing the weight of its cars. According to RockTron, the volume of its fillers is 20% greater than those currently used by Ford but they weigh the same, leading to lighter finished products. Since these fillers are also much harder, car interiors can also avoid scuffing damage. French compounder Eurostar already has a polymer blend with 30% of RockTron's filler available for sale while Eurotec of Turkey is using these fillers in its engineering compounds.

### 'Super cenospheres'

RockTron is working on all five components of fly ash to improve their quality and turn them into innovative products, and collaborations have been set up with four UK universities in Liverpool, Nottingham, Leeds and Birmingham. The company has already developed a new process to remove sinkers from cenospheres and reduce any track carbon down to 2%. 'We are implementing this process at our next plant,' says Mr Michael. And research is also being conducted into special coatings for the cenospheres. These 'super cenospheres' could be used to clean up a type of waste that has been the cause of huge environmental damage in recent years, although RockTron is not revealing more at present because it is in the process of obtaining a patent. The company already has a patent on the microbicide coating of glass spheres. 'Our original idea was to use it in paint to kill all the bugs in hospitals, like the MRSA bacteria,' Mr Michael explains. 'We also looked at using it on concrete screeds to minimise animal diseases amongst cows and sheep.' The microbicide protection lasts as long as the material on which it sits.

### Commercial plant need

Above all, Mr Michael has set his heart on turning the carbon - that can be sold as fuel for £45 per tonne (US\$ 67.50) to power stations - into activated carbon, valued at around £700 (US\$ 1050), for which the surface area of the carbon needs to be dramatically increased. Activated carbon has the highest surface area of any mineral and is used most commonly to purify water and clean waste gases - but there are many

# “DON’T WASTE WASTE!”

There are **resources** hidden in our communities.

Discover our new innovative **FLYING BEAM®** technology at **RWM //** NEC Birmingham, UK  
11 – 13 September 2012  
Hall: 18, Stand: K35 – J34

**Municipal solid waste** contains lots of recyclable fractions. Without MSW sorting those valuables are simply lost. Recovering them means recovering a sellable product, as well as preserving the environment. Automatic sorting is the key in the overall value chain providing sustainability and profit.

**You name it – we sort it.**



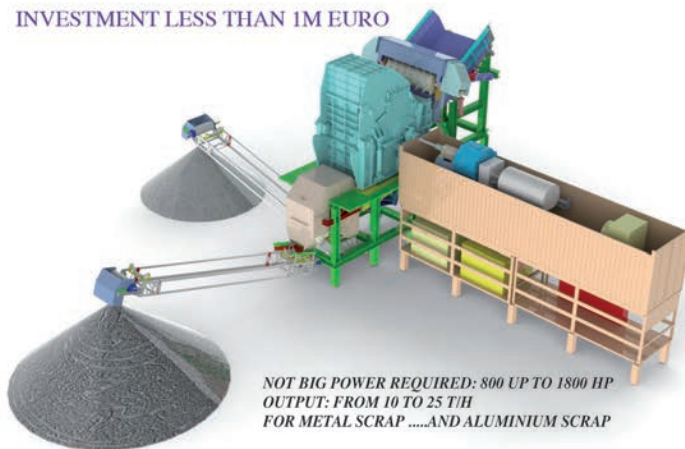
Scan QR-Code via smart-phone-app and watch MSW-Movie.



**NEW SHREDDER PLANTS CONCEPT:  
ZB COMPACT & MOBILE SHREDDER SOLUTIONS**

**MORE THAN 5 YEARS EXPERIENCE WITH SIMILAR COMPACT PLANTS IN OPERATION ALL AROUND THE WORLD**

INVESTMENT LESS THAN 1M EURO



NOT BIG POWER REQUIRED: 800 UP TO 1800 HP  
OUTPUT: FROM 10 TO 25 T/H  
FOR METAL SCRAP .....AND ALUMINIUM SCRAP

- MANY OPTIONS AVAILABLE:
- ELECTRIC/DIESEL ENGINE
  - FEEDING CONVEYOR
  - MAGNET STATION
  - DEDUST COLLECTION SYSTEM
  - WASTE CLEANING CYCLONE...



FOR BIGGER SHREDDER REQUIREMENTS OF UP TO 5.000 HP, PLEASE ASK OR CHECK OUR WEBSITE

[www.zbrecycling.com](http://www.zbrecycling.com)

info@zbrecycling.com - +34 619 781 859  
comercial@zbrecycling.com - +34 943 515 500

## Fly ash in cement

Fly ash can be used as a raw material for cement clinker manufacturing. Cement is made from a mixture of calcium carbonate (generally in the form of limestone), silica, iron oxide and alumina. In this case, fly ash serves as a source of silica and alumina instead of natural sand and clay. Fly ash can also be a major constituent (up to 30%) of blended cement such as Portland pozzolana. It does not require the energy-intensive kilning process required by Portland cement and thus reduces the amount of carbon dioxide generated. Aerated concrete blocks can contain a maximum of 85% fly ash which serves as a siliceous source in their manufacture.

A problem with reusing fly ash in cement or concrete is that production reaches its peak in winter when more electricity is needed. However, the construction industry is at its busiest in summer. This means a requirement for more storage facilities near power plants or ports related to the export of this material to make better use of fly ash in this industry.



Today, the concrete industry uses Portland cement, developed in 1824 by Joseph Aspdin, as its primary binder.

other applications, according to Mr Michael. The carbon removed from the fly ash has a surface area of around 10 square metres per gramme but 'you need to get that up to 600 square metres per gramme at a minimum to sell it as activated carbon,' he says. 'We know how to do it in a laboratory, but we need to test this technology on a slightly larger scale and then we need to build a commercial plant.'

Regarding the magnetite in the fly ash, Mr Michael observes: 'It is spherical and nowhere in the world will you find spherical magnetite. It just doesn't exist in nature. So my first reaction was to use it for dense media separation.' Indeed, magnetite - which has to be mined out of the ground - is currently used in dense media separation for coal preparation. 'This magnetite has a high density of about 4.8,' Mr Michael says. 'The best specific gravity we're getting is 3.6. So there is still work to do on this. And we will find other uses, for example in making material sound-proof.'

### Plans for Europe

The question remains how RockTron will supply potential clients with material without a plant up and running. Mr Michael explains: 'We are probably two years off from having a plant built in Russia. Our partners are acquiring the land now on which to build the plants which are now in the design phase.'

RockTron has not given up completely on the concrete industry since it will be the main client for products from these plants. 'In Russia, they want a big version of what we've got at Fiddler's Ferry because they have huge infrastructural developments to do,' notes Mr Michael.

RockTron is also planning to build a plant in Europe dedicated to producing minerals for the polymers, coatings and adhesives industries. 'We haven't yet finalised where that is going to be built, because different power plants have different attractions to us in terms of incentives they offer,' he explains.

As a significant sum of money is needed, financing these new plants might come from venture capitalists. Current investors in RockTron are private individuals, some of whom have ploughed in more than £1 million (US\$ 1.5 million). The two founders, Mr Michael and Dr John Watt, are still the major shareholders.

### US debate

The largest volumes of fly ash are to be found in Asia and the USA. In Malaysia, for example,



Rigs for National Minerals Corp. pumping fly ash into the S T Crapo in Milwaukee, Wisconsin.



Stabilisation of a fly ash pond.

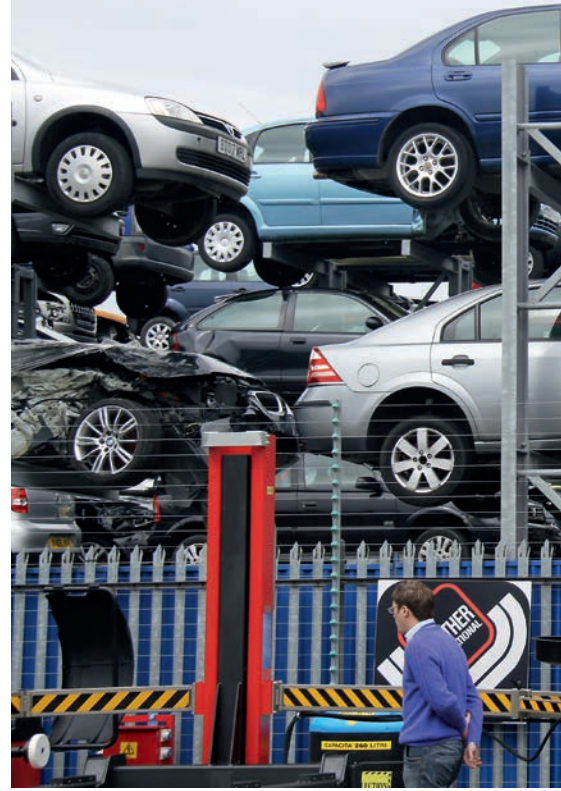
an estimated 2.5 million tonnes is stored in ash ponds. In 2010, RockTron signed a memorandum of understanding with Tenaga Nasional Berhad (TNB), which buys electricity from power stations to provide to the country.

'We have evaluated a lot of ashes across Malaysia so we know what works with our process,' reports Mr Michael. 'They mix bituminous with sub-bituminous coal, and operate at a lower temperature. That does cause a few headaches since not all the alumino-silicates are liberated from the carbon.' RockTron has also received samples of fly ash from power plants in, among other countries, Indonesia, South Korea, China, India, Pakistan, Japan and Australia. 'We are working through those to see where the opportunities lie,' he says. 'But these things take time.' Meanwhile, a discussion has flared in the USA as to whether fly ash should be considered as a hazardous waste. After three years of intense debate, the Environmental Protection Agency has yet to make a final decision on what and what not to allow. 'This means that power stations are reluctant to fund any recycling plant,' Mr Michael points out. 'That is why we haven't built anything in the United States yet. It is a huge market in terms of the stockpiles that are there. We see it clearly as a market we want to be present in.' □

# CARS

## a first-timer success

In June, a new event for the automotive recycling sector opened its doors for the very first time. The three-day Complete Auto Recycling Show (CARS) was staged in Skelmersdale – located roughly between Manchester and Liverpool in north-west England. It attracted more than 800 people from Europe, Canada and the USA, as well as from even further afield.



The driving forces behind CARS 2012. From left to right: Ian Hill, Nigel Dove and Chris Floate. In front, Ian Hill's daughter Trudy.



CARS 2012 attracted more than 800 visitors.



Howard Bluck (left) and Ken Mackenzie of the British Metals Recycling Association.

CARS is 'the biggest event in Europe for automotive recyclers and material processors', according to its organisers. This was a yard-based show at which visitors could actually see things working.

'CARS is much more than a trade show,' notes Chris Floate, Editor of ATF Professional, a UK-based, free monthly newsletter website specifically aimed at Authorised Treatment Facilities and those involved with motor vehicle dismantling, vehicle salvage and other operations associated with motor vehicle depollution and recycling ([www.atfprofessional.co.uk](http://www.atfprofessional.co.uk)).

### Seminars and training

Staged at leading auto recycler Hills Salvage and Recycling Ltd, CARS 2012 featured almost 60 trade stands as well as seminars, training programmes and site visits, all with a social twist - included in the registration fee was food and drink, entertainment in the evening and transport back to the hotels.

The seminars and forums focused on topics such as: building your green parts business; recognising stolen materials; parts listed as unsaleable due to safety reasons; increasing recycling through post-consumer technology; remote selling issues; how modern materials are changing repair techniques; building export markets; and how to benefit from technology.

The event also featured a meeting of the IRT, the International Roundtable on Auto Recy-

cling ([www.irt-autorecycling.org](http://www.irt-autorecycling.org)), which attracted many of the top auto recyclers not only from Europe but also from the USA, Canada, Australia, Japan and elsewhere in Asia.

### Driving forces

One of the driving forces behind CARS 2012 was Nigel Dove, CEO of depollution equipment manufacturer Vortex Ltd which is based at Nottingham in central England. Not having anywhere to show off his products and explain their benefits, Mr Dove was led to develop the CARS concept and to become heavily involved with the show himself.

Mr Dove has been supplying solutions for end-of-life vehicles for many years in both the UK and more recently in the USA and Canada. He often shows his products on the other side of the Atlantic and has been frustrated, he says, by the lack of real opportunities to do the same in the UK. 'Without the opportunity for manufacturers to show what their products do it is very easy for Authorised Treatment Facilities and vehicle dismantlers to miss the latest technical developments that can save them significant amounts of money or increase their profitability,' he explains. 'You can read articles and see adverts, but from a manufacturer's perspective, nothing comes close to actually showing your customers what you can do for them.' This thought guided one of the key features of CARS: exhibitors being given the scope to demonstrate their products.



## Hills Salvage and Recycling Ltd

The CARS event was staged at the state-of-the-art, 11-acre yard of Hills Salvage and Recycling Ltd, one of the UK's leading vehicle dismantling and recycling companies. The firm provides a comprehensive range of services such as salvaged or fully-repaired vehicles as well as car and motorbike spare parts. Thousands of vehicles and parts are held in stock and each week the firm delivers across the UK, Europe and the rest of the world, mainly through its mail order service.

The company started out over 50 years ago as a body shop with a garage forecourt. The operation has grown rapidly in recent years, initially at its site in Burscough and today at East Gillibrands, Skelmersdale, approximately half-way between the cities of Manchester and Liverpool in north-west England.

Hills Salvage and Recycling Ltd also works closely with some of the UK's leading insurance companies as an Authorised Treatment Facility and recycler of end-of-life vehicles. The company also deals with vehicles whose life is brought to a premature end as a result of accident, fire or theft damage.

[www.hill-motors.co.uk](http://www.hill-motors.co.uk)



CARS was held at the 11-acre yard of Hills Salvage and Recycling Ltd in Skelmersdale.

### Technical developments

Looking at technical developments over the last couple of years at Vortex, Mr Dove's meaning becomes clearer. Having installed depollution systems in many yards, his company fully appreciates that what works for one site may not work for another.

'Some sites may have the space and facility to house a double gantry system to allow low-level and high-level processing to take place concurrently, and they might have the need to process in excess of 120 cars per day,' he explains. 'Another yard may not have the footprint or the volumes to suit this sort of system but they still want maximum efficiency to keep the processing cost per vehicle to a minimum. This is no problem for us; we carry out a full business and site analysis prior to making any recommendations. For example, what type of lift suits - scissor, single post, twin post. Depending on the site, these decisions can be critical.'

### 'The show must go on'

So now the first-ever CARS event is over, what is Mr Dove's verdict? 'We had 800 people come to CARS with many from Europe, Canada, the USA and much further away,' he says. 'The event exceeded our expectations with not only more visitors than we anticipated but also our post-show exhibitor survey indicates that the show was a success for almost all exhibitors.' From Mr Dove's perspective, he achieved what he set out to do: to have the opportunity to

show the industry what products and technology can do for the end-of-life vehicle (ELV) dismantling industry.

'The overwhelming success of CARS for both exhibitors and visitors means the industry won't let it just fade away,' says Mr Floate. 'Pandora is out of the box, as they say, and the question is where and when. The survey indicated that a two-yearly event would be popular and we have already been approached by a number of yards who may be interested in hosting the next CARS. There is a great deal of discussion to take place before any final decisions are taken, but as everyone keeps saying - the show must go on.' □



Vortex Ltd has developed a tower system for the processing of fluids.

## Vortex's Depollution System

Nottingham-based depollution equipment manufacturer Vortex Ltd has developed a tower system for the processing of fluids. This contains four high-volume air-operated diaphragm pumps (each capable of draining fluids at 35 litres per minute) and will drain oil, coolant and fuel simultaneously through large bore pipes that allow increased flow to speed up the process and prevent blockages. The tower works in conjunction with Vortex's Fuel Tool which is powered by compressed air to punch through the fuel tank. Meanwhile, the latest addition to the Vortex range of equipment is the wheel ripper which has a cycle time of 15 seconds and can process over 200 wheels per hour.

[www.vortexdepollution.com](http://www.vortexdepollution.com)



The team from Wright Engineers. From left to right: Jeff Wright, Tara Hawley, Mark Sunderland and Naomi Ridley.



Phillip Pownall of JMC Recycling Systems and Rita Calebotta of MG Recycling in Italy.

# BIR Conventions - The **global business forum** for the recycling industry!

Over 1000 representatives of the international recycling industry's most influential companies are expected to attend BIR's upcoming Autumn Round-Table Sessions in Barcelona.

Inspirational speakers, senior regulators, and deal-makers will come together and maximise your opportunity to do real business, worldwide!

**Be part of it all.  
Do business.  
Create opportunities.**



## **2012** World Recycling Convention

### ***BIR AUTUMN ROUND-TABLE SESSIONS***

**(28) 29-30 October 2012**  
Princesa Sofia Hotel, Barcelona

### *Provisional Sequence of Meetings*

**Monday, 29 October 2012**

- 09.30 Paper Round-Table
- 11.30 Textiles Round-Table
- 14.30 Ferrous Round-Table
- 16.30 Plastics Round-Table
- 20.00 Welcome Reception

**Tuesday, 30 October 2012**

- 10.00 Stainless Steel & Special Alloys Round-Table
- 11.30 International Environment Council
- 14.30 Non-Ferrous Round-Table
- 16.30 Tyres Round-Table

More information on the Convention Programme, Online Registration and Sponsorship Opportunities on **[www.bir.org](http://www.bir.org)**

BIR - REPRESENTING THE FUTURE LEADING RAW MATERIAL SUPPLIERS

**Bureau of International Recycling (aisbl)**  
Avenue Franklin Roosevelt 24  
1050 Brussels - Belgium

T. +32 2 627 57 70  
F. +32 2 627 57 73

[bir@bir.org](mailto:bir@bir.org)  
[www.bir.org](http://www.bir.org)



**LEFORT**

**LEFORT S.A.**

Rue Tahon, 1A

6041 GOSSELIES

BELGIUM

+ 32 71 35 16 09

E-mail : [info@lefort.com](mailto:info@lefort.com)

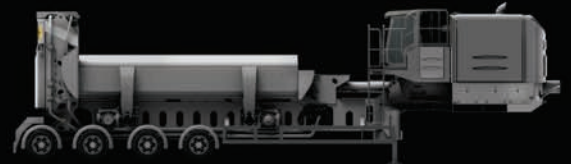
**The choice...**



**500**



**600**



**750**



**900**



[www.lefort.com](http://www.lefort.com)

# EU green light for Asian yards

'It's not working and we all know it's not.' That was the stark assessment of Europe's current regulatory framework governing ship recycling, delivered to Informa Maritime Events' latest Ship Recycling Conference. This article from career trade journalist and freight specialist Martin Roebuck not only details a shift in approach from the European Commission towards a new Ship Recycling Regulation but also reflects ship disposal market prospects.

The European Commission is proposing to re-regulate ship recycling so that facilities in Asia can legally process EU-flagged vessels for the first time if they join an approved list. Technically, EU ship owners are prohibited under the 2006 Waste Shipment Regulation from sending end-of-life vessels to countries outside the Organisation for Economic Co-operation and Development (OECD) for recycling. However, only Turkey among the 'big five' ship recyclers is an OECD member, and more than 80% of such vessels are handled at yards in India, Pakistan, Bangladesh and China. 'It's not working and we all know it's not,' Soledad Blanco, Director of the European Commission's Directorate for Sustainable Resource Management, Industry and Air, told Informa Maritime Events' seventh annual Ship Recycling Conference in London. 'The vast majority of large commercial ships are dismantled outside the OECD, often in sub-standard facilities, which poses a health and safety problem for the workers.' Mrs Blanco said the Ship Recycling Regulation (SRR) would strengthen Europe's current legal framework, which was failing to stop unsustainable practices. EU-based ship owners were effectively prevented from disposing of vessels within the OECD because of a lack of facilities, especially for handling larger vessels, and because costs were lower - and therefore the prices on offer higher - in the non-OECD countries that dominate the recycling market.

## 'Ready for recycling' certificate

The SRR goes beyond the scope of the International Maritime Organization's Hong Kong Convention (HKC), adopted in May 2009 but not so far ratified by any national government. It specifies that all ships must carry an inventory of hazardous materials (IHM) - not just new ships, but existing vessels either sent for recycling or applying for an EU flag, the usual prelude to disposal. Ships included in the SRR will be excluded from the Waste Shipment Regulation subject to a contract being signed between the ship owner and the recycling facility. Mrs Blanco said the selected recycling facility must produce a specific recycling plan; its national administration, or an appointed party, must carry out a final survey; and a 'ready for recycling' certificate must be issued, as the HKC already stipulates. The SSR sets out clearer rules than the HKC on the standards recycling facilities must meet to be considered for Europe's 'approved list'. In addition to meeting the Hong



Kong criteria, yards must offer access to emergency equipment; must be able to contain and handle hazardous materials on impermeable floors; and must demonstrate control of leakage, in particular in intertidal zones. There will be a requirement to ensure that all wastes generated are transferred to authorised disposal or management facilities, and that human health and the environment are protected to EU standards, which are more explicit than the HKC.

### Audit trail

Penalties will be imposed on ship owners sending vessels to facilities that are not on the European list. The minimum penalty will be the price paid for the ship, and the SRR reaches back to the penultimate owner, up to six months before the vessel is sent for recycling, so there is an audit trail prior to re-flagging for recycling.

The European Commission adopted the SRR in principle in March 2012. EU member states and 'relevant non-EU countries' will still be expected to sign up to the HKC. Mrs Blanco said the plan had broad support across Europe, though some member states had issues with elements of the SRR that went beyond the terms of the HKC. She warned that the EU legislative process would not be complete until mid-2013 at the earliest. It could be a year before the new regulation was adopted, a further year before its entry into force, and three more years beyond that for the 'European list' of approved third-country recycling facilities to be established.

### Hong Kong plus and minus

Sveinung Oftedal, Specialist Director at the Norwegian Ministry of the Environment, was concerned at the prospect of a patchwork of US, Chinese and other regional regulations. 'How can we act in harmony? Can't we just stick to Hong Kong? Is it not good enough?' The industry needed clear rules in order to run its affairs, Mrs Blanco stated. Selling the idea of SRR as 'Hong Kong plus', she said the end result would be a single global standard that offered shipbuilders, owners and recyclers certainty and predictability. Additional environmental conditions and improvements were needed, over and above Hong Kong's terms. For example, the HKC did not make clear whether the typical South Asian practice of beaching was acceptable. While not explicitly ruling it out, the SRR was promoting 'clean' investment and the upgrading of facilities, and would make beaching more difficult to justify, she said.

But opinions differ as to whether Europe's acceptance of the inevitability of ship recycling in Asia - albeit under closer scrutiny - will lead to a genuinely 'greener' industry. Nikos Mikelis, Head of the Marine Pollution Prevention & Ship Recycling Section at the International Maritime Organization, claimed there were errors in the European Commission's approach and called the SRR 'Hong Kong minus'. While tighter environmental standards were desirable, regulators should learn to walk before they could run and had failed to address the loopholes they had identified.

One delegate suggested that ship owners would simply flag out of the EU to circumvent legislation that Europe would have no power to impose on other states. The governments of the major recyclers would never allow the EU to inspect facilities on sovereignty grounds.

Mark Williams:

*'Banks are running scared of the shipping market'*



Sea2Cradle managed the breaking of the 'SS Bekalang' last year at the Changjiang yard in China. Here, insulation is removed from tank walls.



PCB-containing material had to be recovered carefully from the window frames of the wheelhouse as the 'SS Bekalang' was recycled.

### Remove incentive

Ingvild Jenssen, Director of the NGO Platform on Shipbreaking, said the main reason why the current export ban was so widely flouted was that, while their unwanted vessels were still in EU waters, EU ship owners were not obliged to make known how they would dispose of them. It would be easier to regulate the flow of hazardous materials if all vessels entering EU waters - not just EU-flagged vessels - were required to carry an inventory. This would remove the 'flag of convenience' incentive and could be tackled through the cargo trade, by encouraging ports to turn away vessels without an IHM, or by making it a condition of vessel insurance.

The HKC's jurisdiction extended only to the gate of the recycling yard, so the industry still needed to address the safe recycling and disposal of hazardous waste, Ms Jenssen said. She argued that any new regulation should discourage 'beaching', where vessels are simply drawn up above the low tide line and dismantled in situ.

Workers in South Asian yards were still dying in accidents and from exposure to hazardous materials, Ms Jenssen claimed. The European Commission measures did not go far enough, and ship owners could simply bypass penalties by re-flagging ahead of the proposed six-month cut-off.

### Easier to conform

Mrs Blanco said the European Commission had sought to define standards that were environmentally sound while avoiding direct reference to beaching. It was difficult to see how some beaches could meet the criteria on containment of hazardous wastes, she admitted. And she added: 'We're trying to offer the best possible solution to those who are forced to circumvent existing regulation. It will be easier than it is at the moment to conform with the law.'

The International Ship Recycling Association (ISRA) estimates the environmentally safe portion of the 7 million tonnes of scrap steel generated each year from shipbreaking to be no more than 16%. ISRA Director Arjen Uytendaal said the HKC did not prohibit beaching because it recognised this would destroy the ship recycling business, but nor did it explicitly permit the procedure - the same fragile line the European Commission is now treading. Every facility would try to get on the EU approved list and there had been 150 applications from India alone, but this raised fundamental issues.

'Beaches are not green,' Mr Uytendaal said.

»The  
**Completely Integrated  
Software Solution«**

Soon available in Version 6.  
Based on Oracle EE and Microsoft .NET.  
Applications run on tablets and touch-screens.  
Web-based information and reporting.

RECY Business Management System  
RECY Logistics  
RECY Online (e-business)  
RECY Marketing (CRM)  
RECY Archive  
RECY Purchase Order Processing  
RECY Production  
RECY Accounting  
RECY Cost Control

- »RECY Overseas Module
- »RECY Waste Management Module
- »RECY Fleet Control System (GPS based)
- »RECY Container Management with Transponder (RFID)
- »RECY Commodity Trading Module
- »RECY Preventive Maintenance Module



**RECY SYSTEMS AG**

Weihenstephaner Strasse 1  
D-85716 Unterschleissheim

Fon +49 (0)89-32 71 54-0  
Fax +49 (0)89-32 71 54-44

info@recy-systems.com

[www.recy-systems.com](http://www.recy-systems.com)

‘There is no infrastructure, they cannot use cranes or provide emergency access, and they do not have impermeable floors.’

### Change of direction

Japanese interests were planning to invest the equivalent of Euro 30 million in a 100 000-tonne development at Alang, India’s main ship recycling site, that would include oil and waste treatment facilities, but Mr Uytendaal recalled that a similar project was tried back in 1997, 100 km away near the port of Pipavav, and it never saw the light of day. The proposed facility was directly alongside beach-based facilities and, following a complete change of direction by the government, the site ironically has now become India’s largest ship-building centre.

Green recycling facilities needed to be built on a scale of at least 1 million tonnes per year to make it cost-effective to abandon beaching, Mr Uytendaal said. Ship owners would typically receive US\$ 10-15 less per tonne for their vessels, and would have to underwrite the cost of downstream waste management and training. Jamie Dalzell, a trader at cash buyer GMS, confirmed that green recycling would typically give the ship owner a 5% lower yield depending on the size, type and age of the vessel, and whether it had an IHM. He estimated that only 10 owners worldwide - mainly publicly-owned companies with a requirement to show corporate social responsibility - had a genuine green commitment and were prepared to follow the process all the way down the line. Others were looking only for paper certification.

### Dig deeper

The four main categories of ship recycling location - beach, slipway, alongside the quay and dry dock - tended to be stereotyped, according to Dimitri Ayvatoglu, Head of Special Projects and External Affairs at Turkey’s leading ship recycler Leyal. ‘You have got to dig deeper and look at operations and processes,’ he said. ‘There are differences between beaching in Pakistan, India and Bangladesh in terms of lifting capability and temporary waste storage. The focus must be on management, not on the systems as such.’ Recycling consultant Marc van de Poel agreed it was unreasonable to disregard beaches on a blanket basis. They could often bear the weight of cranes, and although waste containment was difficult, this could equally be true in other

Arjen Uytendaal:

*‘Beaches are not green.’*

types of ship recycling facility. He accepted that providing emergency access and demonstrating the ability to get personnel off a ship was more problematic. Organising a ‘proper facility’ on a beach had not been done so far and many aspects must change in future, but it was technically possible, Mr van de Poel said. There was nothing to stop progressive recycling yards in non-OECD countries from showing now that they met the HKC standards, observed Robin Townsend, Ship Recycling Lead Specialist at Lloyd’s Register. They

should not feel that they had to wait for HKC ratification and implementation of the SRR.

### Poor quality or faked

Tom Peter Blankestijn, Managing Director of Dutch ship recycling management specialist Sea2Cradle, feared that if recyclers waited until the last minute before putting themselves up for approval, inspections would be of poor quality or would even be faked. And existing regulations should be enforced right across the industry, he insisted. For example, asbestos had long been banned from ships under the SOLAS (Safety of Life at Sea) Convention, but could still be found in newly-built ships. Sam Kimmins, Principal Sustainability Manager at Forum for the Future, said high-value materials were being lost even under current best practice in ship recycling. The current recycling rate was 80-85%, better than in most other industries, but there was an opportunity to further improve supply chain management and design ships for the future that were easier to recycle. For example, high-tensile steel and mild steel were often mixed or copper was mixed with steel, while sprayed insulation was ‘impossible to remove’. The Sustainable Shipping Initiative launched by the Forum involves Daewoo Shipbuilding & Marine Engineering as well as ship owners such as Maersk Line and China Navigation Company. The Triple E ships now being built for Maersk, the world’s largest container vessels each using 60 000 tonnes of steel, were already being engineered for ease of recycling and safe disposal, Mr Kimmins said. Pilot studies were under way at shipyards in China, South Korea and Italy to look deeper into future vessel design. □



Manual labour is still an essential component of shipbreaking in India, but the European Commission wants to establish a ‘safe list’ of progressive recycling facilities.

# There are shredders and there are **METPRO Shredders**



## *Shredding technology and expertise you can rely on*

When you want the latest innovative designs, manufactured to the highest quality standards and supported by the best maintenance service - the choice is easy - choose **Metpro International**.

For over 30 years we have been designing and manufacturing world class shredders for a wide range of applications.

With a comprehensive range of proven machines, new equipment such as the Preshredder, couple with the ability and resources to design and manufacture bespoke machines to customers' specifications and applications, Metpro International are confident of delivering the right shredding solution resulting in total customer satisfaction.



Contact us **TODAY**, we will be happy to discuss your particular requirement.

**+44 (0)1656 657 457**

E: [sales@metprointernational.com](mailto:sales@metprointernational.com)

Metpro International Limited, North Road, Bridgend Industrial Estate, Bridgend, Mid-Glam. CF31 3TP

[www.metprointernational.com](http://www.metprointernational.com)

# Ship disposals could peak as owners cut and run

Massive numbers of tankers, bulk carriers and container ships are being sent for breaking in response to the global economic crisis and the decline in trading volumes. This, together with weak demand for steel, has been one of the factors helping to depress ferrous scrap prices in recent months, the Ship Recycling Conference in London was informed.

**S**tephen Drury, Partner at legal practice Holman Fenwick Willan, said bunker (fuel) prices had increased by 37% in 2011 while freight rates fell by 20%, as a result of reduced demand for oil and consumer goods. This had created a supply-demand 'tsunami'. Mark Williams, Research Director at Braemar Seascope, highlighted sharp increases in ship tonnage going for recycling during each previous recession (See Chart 1), and confirmed the correlation between recycling activity and freight rates for bulkers. The same trend is evident in container ship recycling. Volumes available for recycling also correlated directly with credit supply, Mr Williams said. An owner whose vessel was due for dry-docking could not expect an overdraft from the bank, so was faced with putting in his own equity and returning the vessel to a declining freight market, or simply scrapping it.

**Running scared**  
 'Banks are hoarding cash and running scared of the shipping market,' Mr Williams commented. Dry bulk shipping faced 18-20% oversupply, and the position in tankers was even worse. 'There is a very small inventory of vessels more than 20 years old, so the industry is going to have to start recycling at younger ages if the demand is there,' he said. Owners of most classes of ship were already looking to cut their losses by disposing of their assets sooner than they did at the peak of the market in 2007-08 (See Chart 2). With regulatory and design changes also set to 'drive older vessels up the beach', he predicted that 50-60 million dwt could be sold for recycling this year, ahead of previous market peaks in 1985 and 2011. Steve Wansell, General Manager of

cash buyer Mideast Shipping and Trading, said a US\$ 249 billion funding gap had been left by banks pulling out of ship financing thanks to a huge increase in non-performing loans and debt provisions. It was this faltering credit line that was mainly responsible for the fall in vessel values.

shipbuilding yards would go bankrupt given the present state of the industry, and would convert to recycling.

### 'Under the shadow'

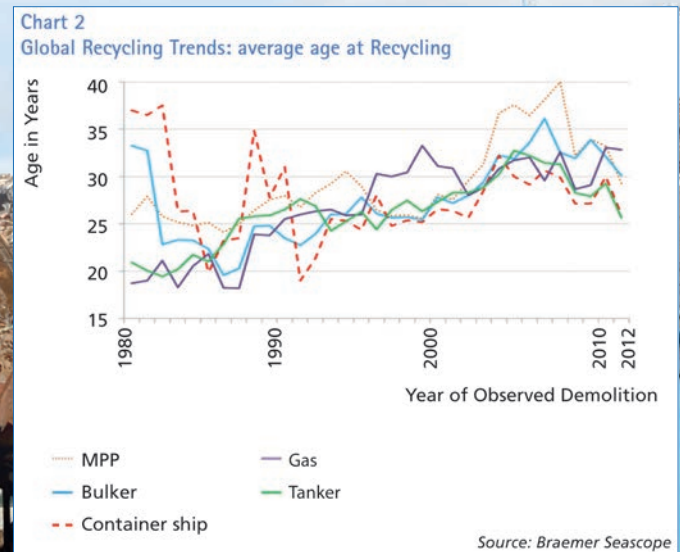
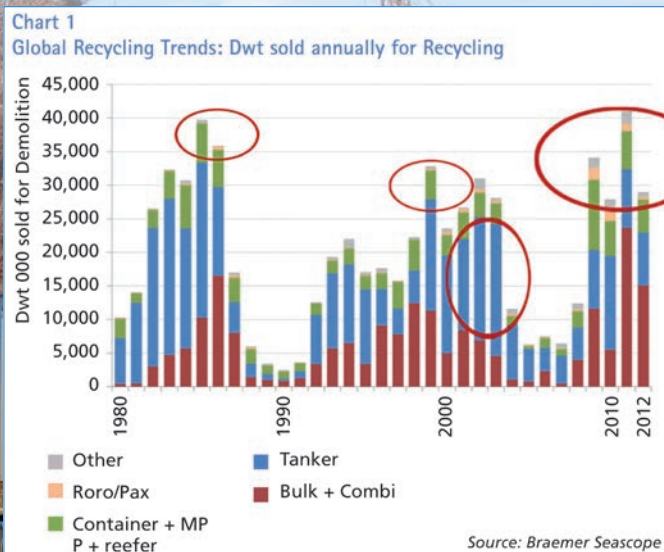
Dimitri Ayvatoglu from Turkish ship recycler Leyal said his country had adopted a European-style regulatory framework in view of its hoped-for accession to the EU, but added that operators there were 'under the shadow of the Subcontinent' and could not match Asian prices.

The commercial reality was that Turkish yards would continue to recycle smaller vessels than South Asia, and that the average size would be about 3000 ldt this year; nevertheless, Turkey would reach 1 million ldt in 2012. Mr Ayvatoglu said that while there had been a fall of US\$ 100 per ldt paid by Subcontinental recyclers in May and June (from US\$ 500 to below US\$ 400), Turkish buyers had been forced down from US\$ 370 to US\$ 300.

The differential reflected Turkey's higher capital costs, labour costs and different approach to hazardous materials management, he said. The end product was also lower in value because scrap steel in Turkey could not be re-rolled into construction rod and instead had to be cut and sent for re-melting. □

### Sharp decreases

Mr Williams said currency depreciation had increased import costs for recyclers in India, Bangladesh and Pakistan. India's 170-180 yards processed 6 million dwt per quarter in 2011, and Pakistan's 25-30 yards approximately 1.5 million dwt, though both had seen sharp decreases this year. Bangladesh had around 55 yards handling almost 5 million dwt per quarter, and its market had stayed more robust than those of its neighbours after buyers there resolved their problems in obtaining letters of credit. Bangladesh's huge steel mill capacity was ahead of current consumption, but the government was trying to stimulate the market with large-scale construction projects. Mr Williams described China's headlong growth in shipbreaking capacity since 2008 as part of a 'strategic imperative' to source more of its steel this way. He predicted that a third of



# More organised than

Discussion of the scale and profound repercussions of metal theft and fraud stole the spotlight at two recent international conferences – the BIR Convention in Rome and Metal Bulletin's subsequent Copper Recycling Conference in Brussels. Recycling International attended both events and here reports not only on the wide-ranging impacts of theft and fraud but also on the expert advice regarding possible ways to counter this twin menace.



West Midlands Police officers in the UK check a scrap van in a bid to deter metal theft and educate scrap dealers.

Just lately, the news wires have been hot with the debate over whether a Greek exit from the Euro-zone would trigger 'contagion'. But in metals recycling circles, it is another plague that is garnering all the headlines.

Speaking at the BIR Convention in Rome and then at Metal Bulletin's Copper Recycling Conference in Brussels, the Chairman of the world recycling organisation's International Trade Council (ITC), Robert Voss of UK-based Voss International, claimed that metals theft is assuming 'contagious' proportions. This scourge is leaving the image of the metals recycling

industry 'badly tarnished', with some newspapers describing the sector as 'despicable' even though it is often the 'innocent victim' of such crime. An estimated 55% of scrap stolen in the UK, for example, is taken from scrap yards.

Metals theft from railways, war memorials and church roofs tends to grab the media headlines but represents only one facet of this issue, according to Mr Voss. Organised crime has stepped in and become a 'massively growing problem', perhaps most visibly in thefts from containers.

## Damaged reputation

The ramifications for the scrap industry are many and profound. The insurance industry has taken note and 'premiums are rising', pointed out Mr Voss. Indeed, 'it's actually becoming more difficult to get insurance.' Furthermore, the shipping industry 'doesn't like us any more' and will often handle the industry's material only under specific conditions. Theft from containers also damages the reputation of the scrap trader with his own customers because the latter are left feeling 'short-changed' when mate-

rial weights fail to tally with the figures agreed. Mr Voss has had personal experience of how organised crime can operate. For instance, his company once tracked one of its containers which was on a through bill of lading to a customer outside of Europe; however, it was found to have made an unscheduled stop for a few hours on a beach in Italy where some of the valuable metal contents were apparently switched for sand.

Pottengal Mukundan, Senior Director of the International Maritime Bureau (IMB), a department of the International Chamber of Commerce which specialises in fighting crime relating to maritime trade and transportation, offered delegates in Rome several specific examples of how organised crime has infiltrated international scrap trading activities. For example, a local agent in the Tanzanian city of Dar es Salaam was pressured into inserting a container - purportedly containing scrap metal - on to a ship's manifest. And in Mexico, a number of drivers were coerced into stopping their trucks by the side of a road to allow containers to be switched.



The International Maritime Bureau's Senior Director Pottengal Mukundan.



MSC's CEO Marc Beerlandt.

# opportunistic

## Seals intact

Much of the discussion at the ITC meeting in Rome surrounded the fact that many thefts involving containers are perpetrated without breaking the seal. Mr Mukundan claimed that there are 'at least' five ways to achieve this; others - including Mr Voss himself - claim to be aware of seven methods of breaking into a container while leaving the seal intact. Meanwhile, tests conducted at the Los Alamos laboratory in the USA have revealed that the average time taken to break a seal is less than four minutes, although some were defeated in as little as three seconds. Bashar Ehsan, Director (Operations) for the Ala Group in the United Arab Emirates, went further in Rome by showing a video of how container security can be thus compromised. For example, thieves break the hub bolt of the seal handle or locking rod rivet without breaking the original shipping line seal; once contents have been removed, the seal handle can be re-affixed with a new hub bolt or rivet. His advice was to 'fix the seal on the bottom of the container called the Cam keeper whenever possible'

## '100% security not possible'

Marc Beerlandt, CEO of privately-owned container shipping line MSC Belgium, argued in Rome that '100% security is not possible'. He also indicated that scrap traders can do more to protect their interests by using smarter systems such as e-seals, although he acknowledged that some of these container security devices can entail significant investment. Technology is extending to 'event reporting' if a container becomes subject to an 'unauthorised opening', his presentation noted.

In answer to the suggestion that insurance companies can prove unwilling to pay out in instances where the container seal is intact, Mr Mukundan said a claim can still be made with the cargo underwriters if it can be proved that the goods were on board at the point of departure but not at their destination.

## Cashless payments

As a response to smaller-scale thefts of metal, such as from the aforementioned church roofs

or war memorials, some governments have looked to introduce cashless payment systems at scrap yards. Mr Voss acknowledged that this approach is likely to gain traction with the comment: 'We would be blind to say it's not going to happen around the world'. But he also pointed to evidence of weakness in such a system; for example, during a French trial it was found that material near borders disappeared into countries where cashless payment was not in place. On the subject of the licensing of scrap yards, Mr Voss maintained that the authorities must be prepared to enforce such measures and to 'force the non-licensed to toe the line'. And

*'100% security is not possible.'*

while insisting that he would not defend any licensed yard over accepting stolen metals, Mr Voss went on to acknowledge that such material is sometimes difficult to spot.

## Fraud and fakery

To cut down the chances of becoming a victim of crime, Mr Beerlandt urged traders to use a limited number of trustworthy and qualified



On average, it takes less than four minutes to break a container's seal.

business partners. It was also suggested, and not for the first time at an international gathering, that traders should make maximum use of photography to help minimise thefts along the supply chain.

The advice offered by Mr Beerlandt also applies to fraud - a problem for the scrap trade that was also covered at the Rome and Brussels conferences. Mr Voss emphasised the same point thus: 'The bottom line is know your business partner, know your trading partner.' And there is 'no better way' to get to know your customer/supplier than to visit them, he added.

Gert-Jan van der Have, former Deputy Editor of Recycling International and now Project Consultant at ARN Advisory in the Netherlands, reached a similar conclusion at the BIR Convention in Rome after having outlined a



The two-tonne 'Reclining Man' sculpture by renowned artist Henry Moore fell victim to thieves, who cut it up and sold it for scrap metal.

# REQUIRED A SALES MANAGER

## WHO

Has good appetite for learning with positive attitude.

Knows English as his business language and German or French.

Has minimum 5 years' experience of selling Plastic raw materials.

Is willing to work for long hours in search of opportunity and excellence.

Has good negotiation skills and ample Techno-Commercial knowledge of plastic.

*For detailed Job description please visit [www.geminicorp.be/careers.asp](http://www.geminicorp.be/careers.asp)*

## COMPANY'S OVERVIEW

Gemini Corporation N.V. is a sourcing, inspecting and logistic company for recyclable raw material. It is based in Belgium where it employs over 25 specialists. It is supported by over 100 professionals in associate offices spread over China, India, Vietnam, UAE, Pakistan, Indonesia, Egypt, Saudi Arabia, U.K. and U.S.A.



Robert Moser  
Production Manager

### State of the LindnerART: Reduce to the max

**We reduce everything. Almost everything. But never our know-how.** You can profit from this too, because you are in good company among our numerous renowned customers worldwide. More than 1.000 shredders and plants for processing refuse derived fuels sold - they speak for themselves.

[www.l-rt.com](http://www.l-rt.com)

The ART of innovative SHREDDING!



**VISIT US** RWM 2012 | 11. - 13. 09. Birmingham | hall 18 | booth M35L34



scrap-related fraud he first described in the August 2011 edition of this magazine. To recap briefly, the scam revolved around the establishment of a bogus trading company - Central European Waste Management - which was backed up by false documentation, fake identities and fictional media mentions. The fraudsters also registered an inspection agency under a name almost exactly the same as that of an existing and well-known business.

**Empty office**

The 'company' offered competitive prices, while its 'personnel' had sufficient knowledge of scrap qualities and trading arrangements to engage prospective buyers in telephone conversations. All the victims were asked for cash pre-payment or an Irrevocable Letter of Credit and an estimated US\$ 10 million duly made its way into the scammers' pockets, all from businesses in Asia. Some of the buyers using this firm's 'services' ultimately grew suspicious and flew to the company's supposed base at Wels in Austria - but were greeted by nothing but an empty office.

**Counting the cost**

In addressing the Metal Bulletin conference in Brussels, BIR's International Trade Committee Chairman Robert Voss used data from the Association of British Insurers to illustrate the extent of the metal theft problem. In the UK alone, there are an estimated 1000 thefts per week leading to insurance pay-outs of more than £1 million or US\$ 1.5 million. The cost to the UK economy has been calculated at around £770 million per year, equivalent to well over US\$ 1 billion. And as Mr Voss pointed out, the financial gain made by the thieves often bears no relation to the loss inflicted: for example, the theft of a bronze statue of a reclining figure, created by world-famous British sculptor Henry Moore, would have netted the perpetrators around £2000 in scrap terms and



Voss International's CEO Robert Voss.

yet the original work of art was valued at £3 million. According to Mr Voss, fines levied in the UK in relation to metal theft had been 'ridiculous' until quite recently. But 'it is changing', he added.

Mr Van der Have dubbed the victims of this fraud 'the weakest link' because of their willingness to rely on internet-based resources to verify the identity of someone to whom they were prepared to hand over considerable sums of money. In an echo of Mr Voss' comments, Mr Van der Have urged traders to become acquainted with prospective new partners 'face to face' and to visit their yards/offices. He also blamed financial institutions and authorities

*'Every document used in the shipping process can be forged with ease.'*

for making it too easy to open accounts or complete registrations using false identification. He concluded his presentation by calling on individuals and companies within the recycling trade to report suspicious activity to the appropriate authorities. Indeed, some BIR members have called on the world recycling organisation to create a theft/fraud 'blacklist' - but the world body must be 'extremely cautious' and wait for court judgments before taking 'appropriate action', explained Mr Voss.

**Remain alert**

Mr Mukundan was adamant that every document used in the shipping process can be forged 'with ease' and that there is 'no exception to this'. He pointed by way of example to the 'completely spurious' bills of lading - featuring the letterhead of an existing company - which were used in one particular fraud that had come to his attention.

He underlined to traders the importance of remaining alert for news of any recent frauds or thefts and of communicating the details to those employees 'on the front line' who are dealing with other people on a daily basis. There is no substitute for 'robust due diligence' - and this diligence should be as overt as possible in order to deter criminals who will tend to prey on the 'soft target', he said.

Mr Voss also highlighted some of the ways in which scrap-related fraud can be perpetrated, including the opportunity presented by differ-

ent VAT rates in Europe. The European Metal Trade and Recycling Federation (Eurometrec), of which he is President, has been successful in convincing most countries to zero-rate scrap for VAT purposes, but the UK and Sweden do not. The UK has seen a 'huge' increase in VAT fraud but authorities are 'not interested' in discussing zero-rating at the present time, he went on to say.

Just like Mr Van der Have, he referred to the misuse of reputable companies' names to obtain a downpayment for goods that will never arrive, as well as to the seemingly inevitable increase in the number of claims made by buyers at a time when the market is falling.

**'Vastly underrated'**

'I'm not sure "My word is my bond" works in international trade any more,' lamented Mr Voss in Brussels. For this reason, it is essential to scrutinise a contract before signing it - including terms for resolving any dispute that may subsequently arise, he insisted.

In certain transactions, said Mr Voss, such disputes can be settled amicably or, failing that, via what he described as the 'vastly underrated' mediation route. The next step is then arbitration, for which the BIR has just finalised new rules so that it now offers a modern solution which is quick, less expensive than legal action and carried out by industry experts who operate in this line of business all the time.

The BIR has also looked to adopt a proactive approach to the issue of metal theft and fraud, Mr Voss went on to say. The world organisation recently carried out a survey of the membership to gauge their own experiences - and some of the responses were 'frightening', he acknowledged. BIR members have been urged to continue to report any instances of theft or fraud to help the world body to fight this twin menace and to improve the industry's image as a result.

And as announced in Rome, the world organisation has become 'an active member' of the IMB which specifically targets crimes relating to maritime trade and transportation. □



ARN Advisory's Project Consultant Gert-Jan van der Have.

## Lamacart

# Driven by a 'powerful engine'

One of Italy's leading paper recyclers, which is said to thrive in equal measure on passion, perseverance and innovation, has a track record dating all the way back to 1934. Initiated by Francesco Nicolis and further developed at an international level by Luciano Nicolis, Lamacart was at the beginning of the country's paper processing efforts. 'Recycling was virtually non-existent then; everything had to be discovered and created,' remarks current Managing Director Thomas Nicolis, who still regards his family's forerunners as exemplary businessmen.

Headquartered in the northern Italian town of Villafranca, just a few kilometres from the city of Verona, recovered paper authority Lamacart owns five main processing facilities that are scattered across the region. First taking small steps, then eager leaps, the company eventually reached the very top of its profession domestically and currently recycles roughly one million tons of paper each year. This accounts for approximately 15% of the fibre processed by all operators on the Italian market today. Considering that only an average of 50 kg of recovered paper is being collected each year for every inhabitant of Italy, the Managing Director is sure there is plenty of room for improvement. 'The rate per individual remains quite low. This is why we strive to help along the national goal of reaching an additional 500 000

tons more each year, allowing us to arrive at 9 million tons in total,' says Mr Nicolis, adding that Lamacart intends to contribute to the cause by investing further resources in innovation. 'All our facilities are equipped with modern-day technologies, allowing an excellent collection and processing performance.' With already 78 years of experience under its belt, the spectrum of communities and industries benefiting from the company's network of owned or partnership-based platforms is very broad, explains Mr Nicolis. 'Our services cover parties ranging from the packaging and bookbinding sector, municipalities, large-scale traders and industries to banks. We also work with several insurance companies, as they require a proper way of disposing of classified documents.'

Luciano and Thomas Nicolis at the Nicolis Museum; known to many as a shelter to thousands of old-timer cars.



Former Lamacart CEO Luciano Nicolis (first from the right) is remembered for helping to make the Italian recovered paper industry into what is today.





### 'Number one priority'

Since the start-up years, the principal activity of Lamacart consisted of acquiring used sacks designed for cement; all residues were removed and predominantly sold as recovered paper to the nearby paper mills or promptly repaired and resold 'as good as new'. Over time, this grew into a more substantial and general recycling service, involving all types of recovered paper. 'At present, Lamacart also handles other recyclable and non-recyclable materials - like plastics,' points out Mr Nicolis. 'However, even though we seek to update our portfolio, paper remains our number one priority.'

Seeking steadily to 'widen the scope' of the company as much as possible, his grandfather and, even more so, his father Luciano before him enforced a hands-on approach from the very beginning: one that ensured that Lamacart's premises grew alongside its ability to react according to the market. With the launch of brand new offices in the works, the recycler's domain currently extends to 150 000 m<sup>2</sup>.

Apart from exploring the potential of its home base, Lamacart has also seen cross-border developments in recent years which have impacted on the wider European and global market. According to the company's Managing Director, this is largely due to the fact that Italy has been able to position itself as a leading export authority within the EU. He explains: 'Around 6 million tons of recovered paper are collected here every year, resulting in around 1.5 million tons of superfluous material, which is commonly being exported to other countries faced with a lack of supply. This makes us an interesting partner for markets abroad.'

### 'Made by new ideas'

The company's horizons don't stop at neighbouring European countries. Mr Nicolis comments: 'Europe is getting too small for any businessman who really wants to grow and expand his enterprise. This is the reason why we are so dedicated to position Lamacart as a truly globalised company.'

Such an objective is both healthy as well as familiar for the company, Mr Nicolis insists. 'Lamacart was made by new ideas - by adopting an international vision, thinking on a big scale and taking risks every now and then,' he says. Mr Nicolis was taught that it does not pay to be too careful and that if you want your fair share of business, you simply 'can't afford to hide'.

Quite recently, the Nicolis family's sense of adventure has been rewarded in a unique way. 'We have recently acquired a licence to take our trade to China. This is great news for us and for our country because we represented one of the first Italian players who gained access to the biggest market in the Far East,' exclaims Mr Nicolis, who recognises this meaningful benefit might secure the company's key ambition of doubling its operations within the next five years.

Another company milestone followed this year, when Lamacart became the first Italian company to take home the much-coveted Papyrus prize, awarded by the Paper Division of the BIR world recycling body to companies, organisations and individuals which have made a singular contribution to the paper recycling cause. Not only grateful but also humbled by such major international recognition, Mr Nicolis declares that the award is a good indicator of Italy's entrepreneurial capabilities and professional teamwork. He adds: 'This is the ultimate compliment to us and goes to show that even a small player can amount to big things as long as they are passionate about it.'

### 'Flag-bearers'

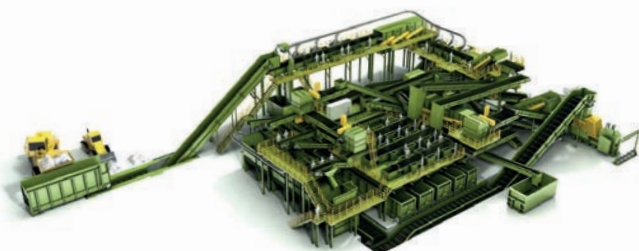
The BIR's Paper Division President Ranjit Baxi, who was there in Rome at the Papyrus prize presentation ceremony, described the Nicolis family as inspirational 'flag-bearers' and 'ambassadors' for the paper recycling sector, praising the company as 'a champion of our industry'. Deeply touched by these words, Mr Nicolis says he attributes all results so far to an 'enduring passion for recovery', adding that instead of being driven by monetary motivations, Lamacart aims to consolidate its knowledge by 'reclaiming the past'.

Giving an account of his father at the helm of the company, the Managing Director describes him as 'a brilliant man with an acute intelligence' who saw the value in things other people threw away. Working from home in a small, makeshift warehouse, Luciano started to bring back bulk amounts of old newspapers which he had picked up from all over town. This was initially greeted with raised eyebrows and a little apprehension. 'In those days, recycling wasn't considered fashionable because it wasn't recognised as an actual industry,' says Thomas Nicolis. 'It simply meant you were always dirty, so my father had to work extra hard to show



Fte/tonne

The recycling business is a profit-driven operation. Bollegraaf aims to make your business as profitable as possible. That is why our recycling solutions focus on maximizing the quality of separation and minimizing operational and establishment costs. Not surprisingly, the Bollegraaf recycling solutions are the very best in the market. Versatility is key, enabling you to process the most various input into the most valuable output to anticipate market prices of recyclables and their demand. Whether you want the highest capacity, the lowest labour costs or the world's most durable machinery, as the world's leading supplier of recycling solutions, Bollegraaf knows how to serve you. For further information, contact our technical advisors directly at +31 (0)596 65 43 33. Be rational, choose wisely. Choose Bollegraaf.



Bollegraaf Single Stream recycling solution in Philadelphia.  
Capacity up to 50 tonnes/hr.  
[www.bollegraaf.com/singlestream](http://www.bollegraaf.com/singlestream)

Sorting your business



**Bollegraaf**  
RECYCLING SOLUTIONS



people he was managing a “serious business”. The development of the industry was no overnight job, he notes, pointing by way of explanation to the complete lack of associated legislation and, first and foremost, to the lack of dedicated processing equipment. ‘As no-one had tried to recycle recovered paper before, there was no technology to fall back on,’ he explains. ‘Basically, every aspect of the sector - from baling to sorting - depended on manual labour, long hours and a disciplined mind. I guess, you could say we were like today’s emerging countries back then.’

**‘More than dreamers’**

The scenario changed during what Mr Nicolis refers to as Lamacart’s technological revolution, spurred on by cutting-edge science and engineering. ‘In the time when my father was in charge of the business, much less work was done by hand as workers were slowly substituted by machinery,’ he says. ‘This finally paved the way for very precise and automated recycling methods, as we are familiar with at present.’ As a result, he adds, the Italian recycler has been able to advance and to prove ‘we are more than dreamers’.

The current Managing Director suggests enhancement of processing operations is what can really set a recycler apart and can dictate whether a business surges forward or is left behind. ‘One of the quickest ways to gain more influence is by installing new equipment,’ he states. However, he notes, the magnitude of the economic crisis has made a lot of fellow recyclers nervous about making extensive financial commitments, thus shaking a lot of long-term goals. Mr Nicolis concludes: ‘Many of them don’t trust in the future anymore,’

According to him, vision and organisation are the two building blocks of any venture - ‘at least, this is what my father and grandfather taught me when I was growing up, which set in motion the self-made-man culture so alive within Lamacart today’. Looking back, Thomas Nicolis insists the company is still driven by their ‘powerful engine’. Although material gain may lend credibility to an operation, he says, the measure of genuine success is a company’s views and overall character, provided by the people.

**Move into Germany**

These hallmark beliefs were strongly shared by his father, who took it upon himself to take

Lamacart abroad by setting up the first Italian recycling network in Germany in the 1970’s. However, perhaps his most notable legacy extends far beyond the world of recycling and reflects man’s fascination with elegant cars and impressive machines in general: it was in the year 2000 that the recycling family opened the doors to its very own private museum - the Museo Nicolis.

‘My father had always been very fond of mechanical devices and technology,’ explains Thomas Nicolis. ‘Day by day, his interest grew - spanning anything from antique cars to bikes, motorcycles and various other mechanical objects, such as old typewriters and music boxes; the most incredible things, really,’ he says. The project initially sprouted from Luciano’s desire ‘to tell the story of how transport has evolved over the years’.

**‘Mechanical jewels’**

The museum conceived by Luciano Nicolis is today home to a huge collection which attracts thousands of automobile enthusiasts every year; it encompasses a kaleidoscope of hundreds of fully-intact veteran vehicles featuring popular brands such as Ferrari, Fiat and Ford. ‘He put so much work into this, doing all the repair work himself and making sure everything was spotless and running,’ says Thomas Nicolis. He proudly remembers that his father, who died earlier this year, had an ability to see beyond the damage and the rust - convinced that each of these cars hid ‘mechanical jewels’ which could be recovered and restored to ‘match their original splendour’.

Regarding the museum as something that reflects the whole family’s own ‘personal history’, Thomas Nicolis still looks after the museum throughout the week. ‘It was created with so much dedication and affection - It feels like my father is somehow alive in there. After all, it was his life-long dream to create that place and he used to say; “We are not the owners of all of this, we are the custodians for the future”’ □



This year, Lamacart secured Italy’s first-ever Papyrus Award.

Metal Bulletin's Copper Recycling Conference

# Red metal a hot prospect

This may have been Metal Bulletin's first-ever Copper Recycling Conference but, as the content of the Brussels event amply illustrated, by no means did this indicate a coming-of-age for a sector that has been crucial to the copper industry as a whole for generations and is likely to become even more of a factor in the years ahead. This article reflects the key issues raised at the conference, including the growing feed complexity facing recyclers as well as the market outlook for the red metal.

Recycled copper forms 'an essential part of the metal supply chain' and accounts for between 30 and 40% of its total consumption. And this contribution will expand in the future, with post-consumer products representing the 'biggest growth potential' for recycled copper units. Thus was Metal Bulletin's inaugural Copper Recycling Conference launched on an unequivocally positive note by Dirk Vandenberghe, CEO of Belgium-based Metallo-Chimique NV.

And despite regular acknowledgement at the event of challenging issues facing the sector both now and in the future, the evidence presented to the 100-plus conference delegates argued overwhelmingly in favour of bright prospects for the metal. In essence, the outlook is one of strong and sustained demand growth for copper with which the mining industry is failing to keep pace. In the coming three to five years, suggested one speaker, the potential for the copper market to go higher is 'enormous' against a backdrop of 'staggeringly high' demand.

### Broadly in balance

The statistical foundations were laid principally by Carlos Risopatron, Head of Environment & Economics at the International Copper Study Group (ICSG) in Portugal. He pointed to record global copper scrap usage of more than 8 million tonnes in 2011, driven by secondary refined output at a time when 'scrap

Klaus Hieronymi:

*'There are three kinds of lies: lies, damned lies, and statistics.'*

directly melted by fabricators has stagnated worldwide'. It was his contention that the copper market has remained broadly in balance over recent times 'just because of scrap use'.

Refined red metal output from scrap is growing rapidly in the key market of China where around two-thirds of copper and copper alloy

scrap requirements are currently satisfied by imports - a dependency on overseas suppliers which is set to continue, according to Mr Risopatron. His figures indicated that Chinese imports amounted to around 1.8 million tonnes last year but are likely to push very close to 2 million tonnes in 2012. The country's total supply is expected to exceed 3 million tonnes, with the remainder split relatively evenly between old and new domestic scrap.

While Chinese imports of copper scrap are currently significantly larger than the volume coming from domestic sources, Mr Risopatron stressed that the latter 'is expected to grow fast'. However, he also pointed out that perhaps 1.6-1.8 million tonnes of China's annual copper use is in products which go for export and therefore is not available for collection from the domestic market.

### 'Diminishing factor'

China is 'nowhere near self-sufficient in scrap', agreed Michael Lion, Chairman and Director of China-based Sims Metal Management Asia Ltd (see Table entitled 'Top copper-bearing scrap

## No place for protectionism

On the very day that Robert Voss addressed Metal Bulletin's Copper Recycling Conference in Brussels, the 'Financial Times' newspaper ran an article detailing the substantial growth in protectionism during 2010 and 2011 as governments bowed to pressure to 'keep jobs at home' by favouring domestic industry needs.

Mr Voss, who is Managing Director of Voss International in the UK, President of the European Metal Trade and Recycling Federation (Eurometrec) and Chairman of the BIR world recycling body's International Trade Council, argued that governments cannot be selective in what they choose to allow freely for export and what they attempt to keep at home. 'It is essential that the free flow of scrap around the world continues,' he insisted. The reciprocal measures that often follow acts of protectionism serve only to stem material flows even further, he added.

### Drop in local prices

Major international players such as Russia, South Africa and India are among those countries to have considered or introduced restrictions with a direct bearing on the scrap sector, according

to Mr Voss. He also highlighted moves by the East African Community in 2010 to ban the export of scrap metals - including copper scrap - even though local demand is 'many times' lower than availability. The end result of a ban, the speaker argued, would have been a drop-off in local prices paid for scrap and a reduction in domestic recycling rates, in addition to the 'probability' of illegal exports.

While insisting that recycling activity tends to decline in situations where pricing structures become 'non-international', Mr Voss also recognised some of the advantages of selling into local markets, including lower transport costs and increased speed of delivery, as well as no language barriers or currency fluctuations with which to contend. The scrap industry 'needs a strong local consuming industry', he stated.

### 'A lot of creativity'

Volker Pawlitzki, Vice President of Commercial Recycling/Precious Metals at Aurubis in Germany, noted that the European Commission listed more than 450 'trade distortions' in 2008 covering in excess of 400 raw materials. 'The number is rising

and it's getting more and more difficult,' he said. 'There is a lot of creativity in this area.'

The danger of export restrictions or import duty rebates leading to trade distortions between nations and/or regions was also highlighted by Dirk Vandenberghe, CEO of Metallo-Chimique. 'EU trade policy should aim to create a level playing field in access to raw materials as well as in export outlets - this point is particularly important,' he stated.

Mr Vandenberghe's presentation also suggested that diversified VAT regimes 'may cause fraud following price inflation, often affecting the end user who is held responsible for paying any unpaid VAT amounts'. For his part, Mr Voss indicated that the failure of the UK to follow other countries in zero-rating scrap for VAT has helped to foster a 'huge' rise in associated fraud.

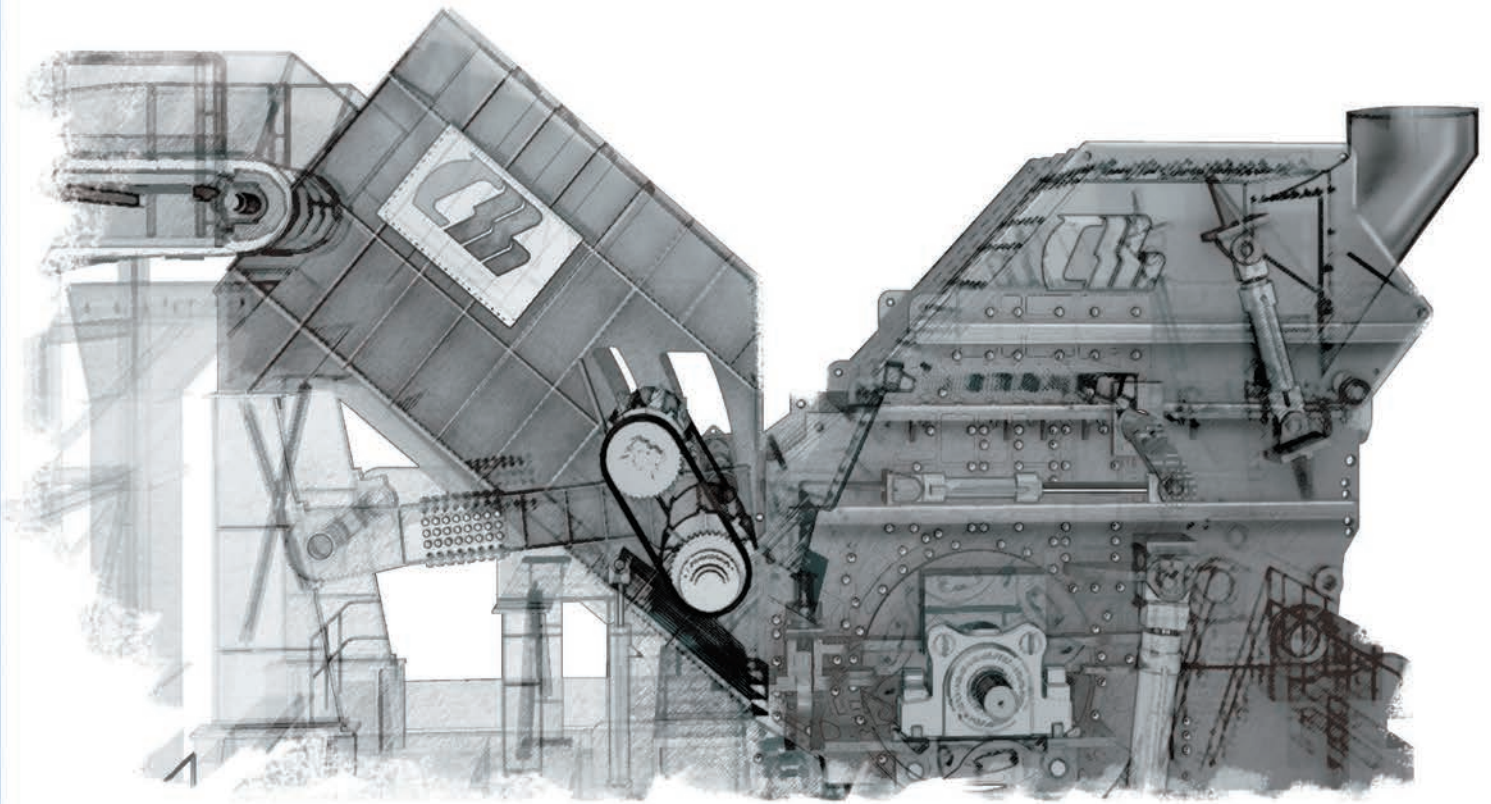


Robert Voss, Managing Director of UK-based Voss International.



**CHENG HO HSING**  
HEAVY INDUSTRIES CO., LTD.

# Scrap Shredder



**The strongest hammer mill for shredding steel scrap!**

"We offer customized service... second to none".

Technical support, best pricing and quality, most efficient downstream, only from CHH.

Contact us now !



TEL:+886-7-6975188

FAX:+886-7-6960326

sales@chhm.com.tw

www.chhtw.com



importers'). But while China's domestic collections are 'embryonic' at present, the country can be expected to bring through 'vastly more of its own scrap' over the coming years. Figures from Global Trade Information Services Inc. reveal that the USA was China's largest foreign supplier of copper scrap by volume last year with a 22% share, followed - perhaps surprisingly, said Mr Lion - by Spain on 15%, and then by Australia on 12% and Germany on 10%.

Sims Metal Management has reinforced its own commitment to developments within China by announcing earlier this year that it had agreed a holding of around 20% in Chiho-Tiande Group - the fast-growing metals and electronics recycler - with a view to the development of mutually beneficial operating platforms in the Chinese market. Traditionally, low labour costs in China have favoured the purchase of low-grade scrap which needs pre-processing or sorting; this includes, but is not limited to, copper recovered from Zorba and heavies sortation, processing of insulated cables, and the breaking of motors and transformers. However, this advantage is a 'diminishing factor' as rising wage costs in China are intensifying the pressure on consumers to become more efficient in their use of labour; in South China particularly, said Mr Lion, recyclers are being driven towards greater use of technology. And experience suggests, he added, that China will adapt 'quickly and well' to technology that is 'first world and of the first order'.

**Stimulating growth**

China's share of global copper consumption has soared from around 15% at the turn of the Millennium to nearer 40% at present. And so Ryan Belshaw, Base Metals Analyst at Macquarie

Capital (Europe) Ltd in the UK, was delivering distinctly encouraging news when revealing that real copper demand 'is picking up strongly' in China. The country's inventories had declined sharply - by around 200 000 tonnes - in the two months prior to the conference despite surprisingly strong import figures. Meanwhile, the

Michael Lion:  
*China is 'nowhere near self-sufficient in copper scrap.'*



Sims Metal Management Asia Ltd's Chairman and Director Michael Lion.

recent decision by the People's Bank of China to cut interest rates suggested to the speaker a fundamental shift away from 'controlling inflation' and towards 'stimulating growth'. According to his figures, global refined copper consumption can be expected to increase from 20.1 million tonnes in 2011 to 20.6 million tonnes in the current year, and thence to 21.4 million tonnes in 2013. By 2016, he maintained, global consumption is likely to be approximately 20%

higher than it is today at around 23.8 million tonnes. The long-term outlook for China's copper demand remains 'strong', not least because of its expansion of the electricity grid. Mr Lion also highlighted China's focus on electricity provision as one of the key means of closing the gap between the country's wealthy and poor. Such massive infrastructure projects will help ensure that China remains a major consumer of copper 'for many years to come', he said.

**'Not unified'**

Mr Belshaw was echoing Mr Risopatron when declaring that 'global copper mine output has repeatedly fallen short of forecasts in recent years'. The ICSG's stats wizard had earlier pointed out that world copper mine supply has been struggling to reach 16 million tonnes in recent years and that miners are also 'delaying planned additions'.

More than 1.4 million tonnes of proposed expansions were either delayed or cancelled last year. An extra 1.5 million tonnes is scheduled to come on stream in 2012/13 as well as some 4 million tonnes in 2014/15. But Mr Risopatron conceded: 'I cannot tell you when all this capacity will hit the market.' And his presentation conclusions contained the additional comment: 'Delays in copper mine capacity plans for 2015+ may keep recyclers busy.'

The same speaker also issued a plea for copper traders and recyclers around the world to lend their support to a necessary improvement in scrap supply statistics. Increased communication with experts is required, he added, in order to produce reliable figures for the recycling efficiency rate - in other words, how much copper is available for recycling. The rate of scrap

**Table 1**  
Top copper-bearing scrap importers (tonnes)

	2008	2009	2010
China	5 577 045	3 998 018	4 364 362
Germany	579 487	495 560	623 915
Belgium	246 897	214 775	270 685
South Korea	217 008	163 020	202 898
Japan	138 729	97 144	159 424

Source: Global Trade Information Services Inc.  
Presented by: Michael Lion, Sims Metal Management Asia Ltd.

**Table 2**  
Total output of refined copper (million tonnes)

	2006	2010	2012P	2014P	2020P
Total	17.2	18.8	20.7	25	26.6
Secondary/ recycling contribution	2.4	3.2	3.6	4.2	6.1

P = predicted.  
Presented by: Dr Michael Landau, Aurubis.

# Recycling

## International

### Recycling International

- Signals worldwide recycling trends
- Reaches more than 33 000 readers in over 120 countries
- Brings you market analysis, news, legislation updates and reviews from the major recycling conventions, congresses and trade shows around the world
- Is received by the international recycling community's top decision-makers, including processors, traders, brokers and consumers
- Is read by trade organisations, research institutes and key (inter)national agencies
- Is written by recycling experts

### [www.recyclinginternational.com](http://www.recyclinginternational.com)

is a news portal dedicated to the global recycling industries. It is a state-of-the-art resource in the best Recycling International tradition, delivering quality information about the world of recycling to the highest and most modern standards.

[www.recyclinginternational.com](http://www.recyclinginternational.com) provides daily news updates straight from the recycling industry, serving all prominent secondary commodities.

**For information on advertising in the magazine or advertising opportunities on the website, please contact:**

Vincent Smit

T +31 267 410 200

F +31 263 120 630

E [advertising@recyclinginternational.com](mailto:advertising@recyclinginternational.com)



[www.recyclinginternational.com](http://www.recyclinginternational.com)



**RWM Birmingham**  
Visit us at booth 19T44

input to copper use was calculated to be 33.9% in 2010 but such figures can be 'misleading' at the regional level, according to Mr Risopatron. He added that Chinese scrap flow data are 'improving' and that the ICSG will be commencing an EU-27 copper scrap supply survey this year. In the same context, Mr Lion argued that meaningful copper scrap data are difficult to collect as the industry is 'fragmented' and 'not unified' in its measurement approach; there is a world of difference, he went on to underline, between copper-containing material tonnages and actual copper contents.

### Enormous discrepancy

The ability of statistics to confuse as well as to clarify was spotlighted by Norbert Zonneveld, the Executive Secretary of the Netherlands-based European Electronics Recyclers Association. Kicking off a session devoted to electronics scrap as a source of copper, he dubbed waste electrical and electronic equipment (WEEE) collection rate stats as 'weak', alleging an enormous discrepancy between what is being recycled in many EU countries and what is being reported to governments; this is because, he explained, used equipment heads down a number of channels. He estimated by way of example that Dutch take-back schemes have control over only around a third of what has been generated domestically. Mr Zonneveld called on EU member states to adopt a policy of inclusiveness towards all parties, and to let recyclers report on all volumes received and treated to their government or to an independent third party. He also called for mandatory conformity with treatment standards and control of exports through the EU Waste Shipment Regulation (WSR). Producers whose responsibilities are delegated to producer take-back schemes should ensure that they use only certified recyclers while scrap traders should: sell WEEE only to certified recyclers; avoid mixing WEEE with other scrap metal streams; and export whole and untreated WEEE only with proper WSR notifications.

### Lies and statistics

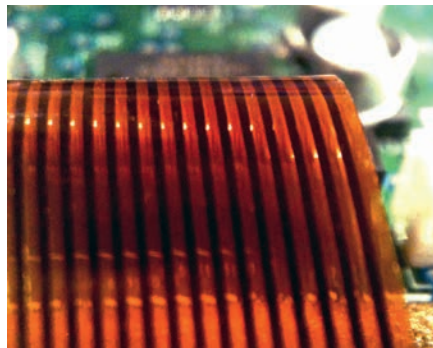
In offering delegates what he described as a personal opinion on the recycling of office equipment, Klaus Hieronymi recalled the words of 19th century British Prime Minister Benjamin Disraeli: 'There are three kinds of lies: lies, damned lies, and statistics.' Chairman of the Environmental Board, Europe, Middle

East and Asia for Hewlett Packard, the speaker argued that official figures tend to mask just how much recycling is taking place. Governments need to understand, he said, that not all used office equipment follows municipal and retail collection routes; a large proportion is also going to scrap collectors who recognise that 'most e-waste has a net recycling value'.

Several studies have found, he said, that around 82% of the EU's used office equipment heads into the region's domestic treatment channel while 11% goes for export and the remaining 7% into the waste bin. Acknowledging metal recyclers' claims that they do not see this 82%, Mr Hieronymi offered the following explanation for this 'leak': domestic treatment in the



Alter Trading Company's Senior Vice President of Non-Ferrous Marketing & Trading Robert Stein.



Klaus Hieronymi, Chairman of the Environmental Board, Europe, Middle East and Asia for Hewlett Packard.

EU is often followed by component parts being exported rather than being sent to the EU's metals recycling community. There are no actual figures to support this contention, he added, 'but we know it's happening'.

### 'Not economic'

The 'unequal' cost burden imposed on EU-based operations provided one of the main themes for Dr Michael Landau, Member of the Executive board at Aurubis with responsibility for recycling and precious metals. By way of example, he noted that his group's electricity costs soared from around Euro 37 million in the year 2000 to more than Euro 90 million in 2011, putting the Germany-based group at a 'clear disadvantage' to other parts of the world. 'Energy must be available at reasonable prices,' he maintained. 'Our industry cannot bear any additional cost burdens that our global competitors do not have.'

Despite fulfilling the highest environmental standards, Dr Landau added, recycling in Europe is weighed down by: the contradiction between the necessity of recycling more complex materials and EU regulations requiring emission certificates for the European recycling industry; complicated regulations with regard to cross-border waste transport to Europe endangering the flow of recycling materials; and emissions trading threatening the continent's energy-intensive industry.

Dr Landau went on to argue that only large smelting/refining operations have a chance to survive today 'because of the high cost load', including investment costs. 'A low capacity, in my opinion, is not economic,' he told delegates. Operators need to be 'very skilled' to carry out the complex, multi-material recycling that represents 'our industry's chance for the future', he said.

The same speaker also added to the immense pool of statistics gathered for the Brussels event in forecasting that total output of refined copper will climb from 17.2 million tonnes in 2006 to 20.7 million tonnes this year, while over the same period the secondary/recycling portion is expected to leap from 2.4 million tonnes to 3.6 million tonnes. By 2020, secondary recycling is predicted to contribute 6.1 million tonnes to a total output of 26.6 million tonnes (see Table entitled 'Output of refined copper').

### 'Needless fear'

In a presentation covering the relationship between buyers and sellers in his domestic US

# Sure, you could live without copper

But

## 200 km

of our copper wire alone are needed for each wind turbine:  
Without copper no green electricity.

[www.aurubis.com](http://www.aurubis.com)

**Aurubis**  
Our Copper for your Life



JMC Recycling Systems

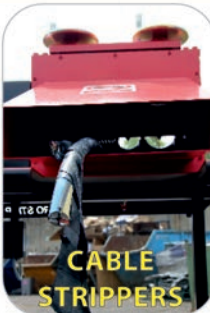


## The New and Used Machinery Specialist

JMC Recycling Systems offer a HUGE range of New & Fully-Reconditioned recycling machinery to meet the high demands of the metal recycling industry.



**SHEARS**



**CABLE STRIPPERS**



**CABLE GRANULATORS**



**BALERS**

Also Available from JMC:  
Can Balers and Sorters  
ELV Recycling Equipment  
CAT Recycling Systems  
Container Tilters  
Metal Analysing  
Shredders  
Engine Crushers  
and much, much more... Visit our website for full details of all our products and services!

**Whatever your recycling needs  
we have the perfect machine to  
suit all your requirements**

**[www.jmcrecycling.com](http://www.jmcrecycling.com)**



TEL: 0044 (0)115 9409630 FAX: 0044 (0)115 9791478 EMAIL: [phillip@jmcrecycling.com](mailto:phillip@jmcrecycling.com)

**RWM**

11-13 SEPT 2012  
NEC BIRMINGHAM

**WE ARE EXHIBITING  
COME AND VISIT US!**

Indoor: 17H45  
Outdoor: OA253



market, Alter Trading Company's Senior Vice President of Non-Ferrous Marketing & Trading Robert Stein sought to allay what he described as 'the needless fear' among consumers that more copper scrap is currently controlled by fewer people than has ever been the case in the past. These suppliers, he explained, have a need to sell material every month and to 'keep their inventories turning', with the result that consuming businesses will continue to be supplied with appropriately-priced material. Mr Stein went on to predict further consolidation in the sector as smaller companies are generally more vulnerable to market volatility. 'Cash tie-ups are enormous,' he said. Meanwhile, purchasers in China have 'meshed perfectly' with the process of domestic demand erosion in the USA. 'They are major buyers of all grades of copper scrap today,' he stated. 'It is hard to imagine where we would be without them.' Acknowledging China as the 'market setter', Mr Stein pointed to Asia in general as likely to be the dominant overseas buyer of US copper scrap going forward. More specifically, he identified India and Indonesia as potentially significant importers of US material but also argued that the former's 'ossified' bureaucracy will remain an issue for exporters to the country.

#### Innovation key

A recurring theme at the Brussels conference was the increasing complexity of products from which copper can be derived. Indeed, Dr Landau of Aurubis identified a number of growth areas for copper recovery - such as shredder material, circuit boards, WEEE and industrial catalysts/slimes - before stating: 'More and more complex recycling materials will be the focus for 2020 and beyond'. Recycling growth



will be determined, he later added, by the high-tech recycling of complex materials - and the key word, he stressed, will be 'innovation'. But according to Mr Vandenberghe of Metallo-Chimique, one of the many unfortunate side-effects of the 2008/09 global economic crisis has been the more limited access to credit, thus preventing the recycling industry from optimising investment in new capacities or in the new technologies that will enable it to tackle ever greater product complexity. His presentation also insisted: 'Recyclability should become an integral part of the thinking process of new product design.'

#### Bismuth 'tricky'

A specific example of how product complexity is already affecting the scrap industry was provided by Mr Vandenberghe's colleague at Metallo-Chimique, Chief Sales Officer Inge Hofkens. Having noted the existence today of more than

400 copper and copper alloy compositions, she pointed to the increasing incursion of bismuth into the red metal arena as a replacement for lead in certain applications such as water taps. She confirmed that the presence of bismuth in scrap attracts a penalty under her company's pricing system. 'That doesn't mean we cannot cope with it (but) bismuth is really a tricky thing if you want to produce copper anode,' she told delegates. 'I would say it would be best to keep bismuth-containing material separate if you can.' Having also highlighted the growing use of antimony in anti-microbial copper products, she said red metal recycling today is less about extracting the copper than about 'managing the impurities'. Although the high price of copper has 'drastically impacted the requirement for working capital', she added, its elevated value has also 'supported decisions for new investment projects' and given 'increased access to raw materials'. □

## Copper price to slide in 2014

'We expect copper to continue to trade at a premium to marginal cost of production,' it was asserted in Brussels by Ryan Belshaw, Base Metals Analyst at Macquarie Capital (Europe) Ltd. But while global copper consumption is likely to remain on an upward curve over the coming years, the company's researchers believe the red metal price will begin to lose momentum before the middle of the decade as the refined metal balance swings from shortfall to oversupply.

The LME cash price averaged US\$ 8811 per tonne last year when demand exceeded supply by 462 000 tonnes in total, but this average is expected to drop

to US\$ 8428 this year with a narrowing of the shortfall to 297 000 tonnes. Even though the market is projected to flip into oversupply next year (albeit by a meagre 27 000 tonnes), the LME cash average for 2013 is projected to climb to US\$ 8538 per tonne, according to Macquarie Capital's figures. However, refined copper oversupply is expected to gather pace in 2014 to reach 241 000 tonnes, sending the LME average price crashing to US\$ 7675 per tonne. And the analysts at Macquarie Capital are expecting no improvement in the three subsequent years, with the average price forecast to remain at or only slightly above US\$ 7500 per tonne.

## Victim of its own success

The high prices paid for copper in recent years have earned the red metal an unwanted tag as the 'number one target' for metal thieves, according to Robert Voss. And this is an issue about which 'we should all be concerned', delegates at Metal Bulletin's Copper Recycling Conference were told by the Chairman of the BIR world recycling body's International Trade Council.

These comments formed part of a speech in which Mr Voss outlined not only the scale but also the growing sophistication of metals theft and fraud. This is covered in a separate article beginning on pages 46-49 of this issue of Recycling International.

## Platinum group metals



# Record in prospect for palladium recycling

The continued weakness of the Euro has limited any measurable appreciation in precious metals prices so far this year. Platinum and palladium values have struggled to gain traction as consumers and investors remain apprehensive of a further slowing in the world economy. This article explores the platinum, palladium and rhodium markets, including recycling developments, and is based on the latest report prepared by Patrick Magilligan, Ashok Kumar, Rajesh Seth and Suresh Khosla of US autocatalyst recycler A-1 Specialized Services & Supplies ([www.a-1specialized.com](http://www.a-1specialized.com)).

**P**alladium recycled from scrap converters could see an increase of more than 20% from 1.35 million ounces in 2011 to 1.62 million ounces in the current year - a record volume that would rank third in size only to Russian and South African primary mine production. Platinum from recycled converters

could manage an equally sizeable jump from 1 million ounces last year to 1.2 million in 2012, while rhodium could record a 15% increase to 260 000 ounces from 225 000 ounces.

Furthermore, it is believed that the total volume recycled of all three of these metals could appreciate over the next five years to nearly 5 million

ounces, rising potentially to more than one-third of total annual platinum group metal (PGM) supply. Recycling volumes have risen substantially over recent years, principally as a result of solidly higher metals prices and improved efficiencies in the collection process, broadening environmental regulations, an increasing commercial need for the metal and a growing pool of ageing vehicles. A great speculative presence in the markets has resulted in a sizeable appreciation in precious metals prices, with platinum recording its highest-ever average yearly value in 2011 of US\$ 1721 an ounce. The sharp sell-off in commodities around the turn of the year, however, slowed the sale of salvage converters to consolidators, but volumes have improved to more normal levels in the months since January along with the recovery in metal prices.

#### Safety-related closures

Available supplies of primary platinum have been declining owing to a series of safety-related closures at South African mines and to a

## Platinum

Following a remarkable recovery from late-December lows of US\$ 1355 an ounce, platinum has fallen back from an end-February high of US\$ 1740 in response to investor fears and a declining trend in economic data from China where the government has made significant strides to intentionally slow its economy. The metal has traded only briefly above its 2011 average value of US\$ 1721 an ounce and has been well short of last year's cyclical high of US\$ 1912.

Platinum prices have won some support in recent months from a loss of primary supply from the world's largest producer, South Africa, and by further threats to future mining efforts. It has been estimated that some 300 000 ounces of platinum may have been forfeited over the past year due to a succession of safety-related mine closures by order of the country's Department of Mineral Resources so as to investigate on-site deaths. In addition, the six-week strike at Impala in the first quarter could cost at least 120 000 ounces of platinum outturn.

As a result of these developments, platinum production in Southern Africa could fall as much as 10% this year to 4.8-4.9 million ounces.

## Palladium

Palladium values rose sharply in the early months of this year, gaining more than US\$ 100 to reach a high in February of US\$ 723 an ounce. Subsequently, however, the metal has been unable to sustain a move above US\$ 700 an ounce as global growth concerns have stifled investor interest. Compared to platinum and gold, the price of palladium has remained relatively stable; it is still perceived as the favoured metal for automotive catalysts as the increased manufacture of smaller-engine cars now common in China and the USA can be fitted with lower-cost, palladium-rich converters. Supplies of primary palladium are expected to be lower this year as South African production is affected by a significant number of safety-related mine closures and other disruptions for worker actions, and also because of an announced decrease in sales from the world's largest producer of palladium, Norilsk.

## Rhodium

Rhodium values continue to drift on very light volumes and a lack of any incremental consumer demand. Market supplies apparently remain more than ample to satisfy current levels of industrial offtake. Investment demand also appears to be virtually flat at this time as the possibility of lower prices over the near term still persists.

Supplies of primary rhodium have been on the decline as South African production, which accounts for more than 80% of global supply, has been adversely affected by safety-related work stoppages, which may cost the industry an estimated 30 000 ounces of rhodium this year. Also, the recent six-week strike at Impala's Rustenburg lease area is likely to result in a loss of 12 000-15 000 ounces.

Demand for rhodium in the automotive sector should also remain firm as global vehicle sales continue to expand, albeit at a modest pace. Current market values for rhodium should make the metal more attractive to commercial users than it has probably been for several years, possibly limiting price declines from present levels.

recent six-week strike at the world's second-largest producer, Impala Platinum. Similarly, annual palladium deliveries from Russia, the world's leading producer, have fallen by perhaps 15-20% as the sale of state stocks has been substantially reduced, and is likely to decrease further as these inventories are depleted. The processing of salvage catalyst scrap along with primary feed will be essential in containing the current rampant cost increases at the South African producers. The inclusion of lower-cost, higher-content scrap can effectively reduce the overall unit cost of the smelting and refining process. To compensate for the potential shortfall in new mine supplies, the growth in secondary supplies of PGMs has effectively led to less volatility in the market and lower, more consistent pricing levels. Palladium from recycled salvage converters has enjoyed the most growth in recent years as a wave of scrap vehicles dating from the late-1990s make their way through the scrap processing system. Platinum reclaim totals have also grown solidly over the past year

as more converters from both diesel- and petrol-engine vehicles built in the EU over the past decade now flow through to the market.

### Easing growth

US vehicle sales in 2012 continue to outperform most other world markets despite only 2.3% year-on-year growth in April for an annualised rate of 14.4 million units. However, GM (-8.2%), Ford (-5.1%), Honda (-2.2%) and Nissan (-0.3%) all registered lower sales for the month, thus suggesting that the pace of growth in vehicle sales in the USA may be starting to ease. Nevertheless, industry estimates are for up to 14.5 million vehicle sales in the USA this year from 12.8 million in 2011. Vehicles sales in the EU-27 were down by 7.7% at 3.31 million units in the first quarter of 2012, indicating a possible total of 13 million vehicles for the full year. EU registrations totalled 13.34 million units in 2011, off by a marginal 1.7% from 2010. For the same quarter, total sales in China fell 3.4% to 4.79 million vehicles, offering an early indication of full-year sales of

18 to 19 million units. Vehicle sales in China climbed only 2.4% in 2011 to 18.5 million units after a 32% jump in the previous year.

### Pent-up demand

In the first three months of this year, Japanese vehicle sales leapt 52.2% to 1.1 million units, although it should be noted that the same quarter last year was affected by the earthquake and tsunami. The Japan Automobile Manufacturers Association has projected growth in 2012 sales of as much as 19% to 3.6-3.8 million units as a result of pent-up demand, increased production and fresh buyer incentives.

For the financial year ending in March 2012, Indian vehicle sales climbed a modest 2.2% to 2 million units but the Society of Indian Automobile Manufacturers is reckoning on growth of 10-12% for the 12 months ending March 2013. Meanwhile, Russian car sales are projected to reach 2.8 million units this year, the highest annual total since the 2.9 million units recorded in 2008. □

## Ferrous

Closed: July 30 2012

### Brighter outlook or false dawn?

Ferrous scrap prices have been mounting a recovery in more recent weeks. At the time of writing, latest cfr indications for shipments from Europe to Turkey are as follows: US\$ 385-390 per tonne for standard quality HMS I/II 80/20 scrap; US\$ 390-395 per tonne for shredded; and US\$ 360-365 per tonne for the HMS I/II 70/30 mix. US prices are normally around US\$ 10 per tonne higher but some experts claim this differential has widened of late.



The consensus among industry experts is that ferrous scrap prices reached the bottom during the course of July. However, some are wondering whether the subsequent upward price progress will be sustained, especially as many consuming mills are under pressure regarding their sales. 'I don't trust this upturn necessarily to be long term - it could be just a small correction,' comments one trader. Since our previous report in early June, Turkish mills booked well over 40 car-goes in the ensuing four-week period.

However, purchasing momentum slowed in the run-up to Ramadan which started on July 20, partly because a number of the country's scrap consumers have planned production stoppages for the holy month. Shipments of HMS I/II 80/20 scrap from Europe to Turkey had been commanding typically US\$ 380-385 per tonne on a cfr basis at the time of that earlier report and subsequently headed lower. However, as Recycling International heads to press, the lost ground has been recovered and the same grade is

now commanding US\$ 385 per tonne and above while shredded scrap is attracting more than US\$ 390.

#### Improving returns

As ever, US ferrous scrap exports are fetching even higher prices - with some experts claiming the differential to Europe is even wider than normal at US\$ 15 per tonne or more. In the USA itself, domestic scrap prices fell typically US\$ 50 per long ton in early July, thus almost matching the drop seen in the previous month. Into the second week of July, however, returns for the scrap yards showed signs of improvement - not least because of the dampening effect on incoming flows of the sharp decline in prices and high temperatures in many parts of the country. Prices for ferrous scrap exports to India have continued to be undermined by low demand from the country's mills and also by the weakness of the rupee in relation to the US dollar. However, there has been some improvement of late, with US shredded scrap sold at US\$ 415-420 per tonne cfr Nhava Sheva.

Domestic scrap prices in China have been on a declining path for most of July - a reflection of ailing steel prices. Scrap prices in South East Asia turned

the corner in early July, although increases were limited to US\$ 5 for HMS I/II 80/20 to give a range of US\$ 390-395 per tonne cfr.

Meanwhile, Japan's leading ferrous scrap consumer Tokyo Steel Manufacturing has provided its market with a greater degree of stability by pegging its H2 purchasing prices between the middle of June and late July at Yen 26 500-27 000 per tonne (US\$ 340-353) depending on the receiving works. H-2 fob values for exports to South Korea have also improved towards the top end of this same range.

#### 'Flat' third quarter

The latest World Mirror produced by the BIR world recycling organisation offers a range of expert views on market prospects for the coming months - none of which could be described as buoyant. Tom Bird, President of the European Ferrous Recovery and Recycling Federation (EFR), argued that the third quarter 'looks flat' before adding: 'Many feel we are at the bottom, anticipating a possible upturn towards the end of the quarter.'

And Blake Kelley of Sims Group Global Trade Corporation in the USA listed a number of industry concerns - including energy cost increases, an uncertain Euro







and China's economic slow-down - before concluding that buyers and sellers of scrap will probably remain cautious, minimising inventory and other costs. As a result, he added, supply lines were likely to remain 'very tight'.

The most specific market outlook was offered by Hisatoshi Kojo of Metz Corporation in Japan who predicted that his country's H-2 scrap price will range lower at between Yen 26 000 and Yen 26 500 per tonne in the coming months - not least because electric arc furnace steelmakers cut production over the summer. 'Once shipment of outstanding July/August contracts is completed, it might prove difficult to sustain the current market level,' he added.

#### Higher Turkish imports

The world's leading ferrous scrap importer, Turkey, received 1.96 million tonnes in May for an increase of around 13% over the same month last year, according to latest data from the Turkish Statistical Institute (TUIK). The USA was the leading supplier on 631 623 tonnes, followed by Russia on 311 377 tonnes and Romania on 196 027 tonnes. Across the first five months of the year, Turkish purchases from abroad leapt 17% to some 9.36 million tonnes.

Figures from the US Commerce Department suggest that Turkey imported 604 600 tonnes from the USA in May versus 617 711 tonnes in the previous month. But despite this decline, US ferrous scrap exports overall were approaching 8% higher in May when compared to April at 2.035 million tonnes. However, the total was more than 20% short of the 2.58 million tonnes shipped overseas in the fifth month of last year.

US shipments to China fell more than 14% from 176 620 tonnes in April to 151 324 tonnes in May. Among the leading climbers in terms of importers of US ferrous scrap, South Korea purchased almost 50% more in May than in April, with the respective totals being 317 993 tonnes and 213 065 tonnes. Meanwhile, more recent figures from China Customs indicate that the country's ferrous scrap imports in June were some 10% lower than in the previous month at 460 578 tonnes.

#### Competing commodities

Iron ore has been tracking lower in recent weeks. Having touched US\$ 140 per tonne cfr China soon after the midpoint of June, the value of 63.5% Fe content Indian fines subsequently entered a period of steady and then

## USA and EU trade top exporter status

In the first three months of this year, the EU overtook the USA as the world's leading exporter of steel scrap after running up shipments that annualise to around 25 million tonnes - described as 'a level which has never been seen before' by Christian Rubach, President of the BIR's Ferrous Division.

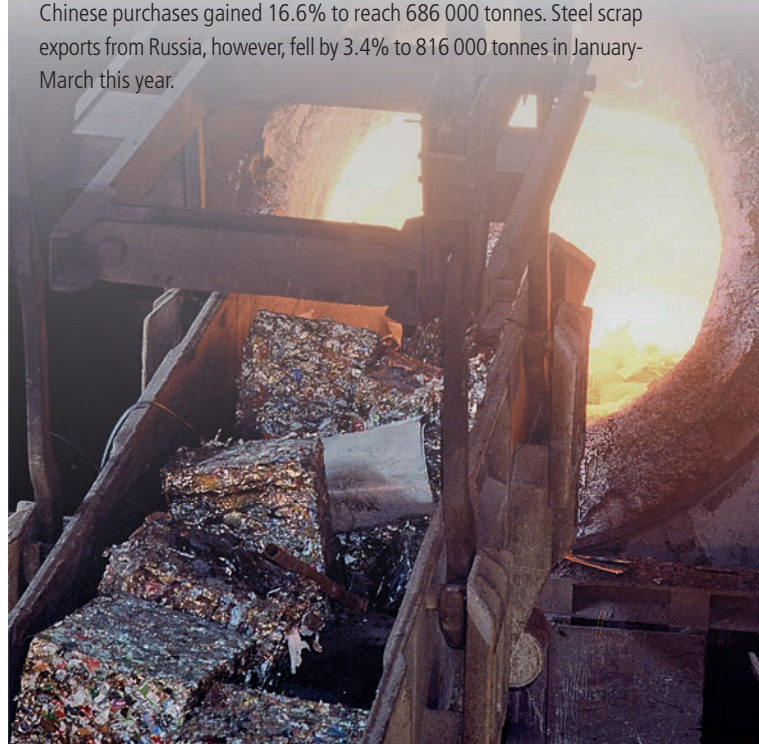
The previous 'World Steel Recycling in Figures' review from divisional Statistics Advisor Rolf Willeke had revealed that US steel scrap exports jumped 18.6% last year to 24.373 million tonnes whereas the EU's total shipments to third countries slid 1.4% to 18.77 million tonnes. But his latest update confirms that EU exports sky-rocketed 38.3% in the first quarter of this year to 6.152 million tonnes while the gain in US overseas shipments was a more conservative 7.7% to 5.439 million tonnes.

Turkey maintained its position as the biggest buyer of EU steel scrap in upping its purchases by 28.3% to 3.366 million tonnes while India increased its EU imports by a massive 204.4% to 831 000 tonnes when comparing the first quarter of 2012 with the corresponding period last year.

#### Fall in Chinese usage

The 'World Steel Recycling in Figures' update also noted that, in percentage terms, Turkish steel scrap consumption matched the increase in domestic steel production during the first quarter in rising 13.8% to 8.1 million tonnes. However, China's steel scrap consumption dropped 10.1% to 21.3 million tonnes despite a 2.5% increase in the country's crude steel production in January-March this year.

Over the same period, there was a decline in the EU-27's steel scrap usage of around 5% to 24.7 million tonnes while the Japanese total fell 6.5% year on year to 9 million tonnes. Russia cut its steel scrap consumption by an even more substantial 8.1% to 3.4 million tonnes even though domestic crude steel output climbed 4.9% in the first quarter of 2012. Turkey and the Republic of Korea set the pace in terms of steel scrap imports: the former increased its requirements from overseas by 11.8% to 5.338 million tonnes in the first quarter of this year while the latter recorded an import increase of 32.8% to 2.403 million tonnes. Chinese purchases abroad declined 4.2% to 1.291 million tonnes. Japan's export volumes rebounded from a difficult 2011, leaping 36.8% to 1.948 million tonnes in the first three months of 2012; its shipments to the Republic of Korea soared 48.6% to 1.204 million tonnes while Chinese purchases gained 16.6% to reach 686 000 tonnes. Steel scrap exports from Russia, however, fell by 3.4% to 816 000 tonnes in January-March this year.





# RELIABLE EQUIPMENT PROVEN RESULTS



# Harris

Harris maintains the largest selection of heavy-duty scrap processing equipment, featuring everything from Shredders, like our HS 125125, to our extensive list of two ram balers. If you are in the scrap processing industry, we have the machine that fits your facility.





## Eurofer more pessimistic about demand outlook

European steel association Eurofer believes the EU market could remain depressed 'longer than expected', with an improvement in the region's demand now likely to be delayed until the second quarter of 2013.

In its latest market outlook, the organisation's Director General Gordon Moffat comments: 'Weak confidence in combination with liquidity and credit issues is showing a negative impact on the EU business climate. With global economic growth currently hitting a soft patch, export growth is also cooling down, despite the weaker Euro. This is bad news for the manufacturing sector and for steel consumption in the EU.' Confidence and access to finance need to improve to get the market moving upwards again, he adds.

Corporate and consumer retrenchment will translate into new orders remaining subdued for the time being while construction activity across the EU is expected to remain under pressure owing to a lack of new publicly- or privately-funded projects, says Eurofer.

### Gradual bottoming

Overall this year, EU apparent steel consumption is forecast to fall around 5%. Having predicted a figure of 153 million tonnes only a few months ago, Eurofer now believes apparent consumption will total around 149 million tonnes this year compared to 157 million tonnes in 2011.

The outlook for the second half of 2012 is for 'the downward trend in apparent consumption to gradually bottom out', according to Eurofer. 'In 2013, improving end-use demand fundamentals and the need to rebuild to some degree inventories in the steel supply chain will be supportive to apparent steel consumption growing by 2.5%.'

Wolfgang Eder, President of Eurofer and CEO of Voestalpine had told delegates at the steel association's European Steel Day in Brussels in late June that a return to 2007 market conditions was not expected 'anytime soon'. But he added: 'Having in mind that we have experienced a price level this year that is lower than the average for the past five years, it is not unrealistic to see an upturn in 2013.'

sharper decline, reaching US\$ 136 around mid-July before sliding to around US\$ 124 at the time of writing. Forward bookings have weakened from China where steelmakers have generally become more cautious against a backdrop of difficult finished product sales. The current circumstances contrast with those in the first half of 2012 when China increased its receipts of iron ore by almost 10% year on year to just over 366 million tonnes, according to customs statistics.

Researchers at Morgan Stanley are reckoning on a world iron ore price average of US\$ 141 per tonne for 2012, rising to US\$ 155 in 2013 on the back of improved steel demand and supply constraints. Meanwhile, Australia's Bureau of Resources and Energy Economics (BREE) reckons the country's 62% Fe iron ore export price will average around US\$ 131 per tonne fob next year compared to an estimate of US\$ 136 for 2012. The anticipated decline is attributed to lower demand colliding with increased supply. BREE is also predicting that Australian exports of iron ore will climb some 10% to around 510 million tonnes in the 12-month period beginning in July this year. World trade in iron ore can be expected to advance around 5% in calendar year 2012 to 1.1 billion tonnes and thence to around 1.2 billion tonnes next year, according to the same organisation.

### Steel

Mid-year statistics from the World Steel Association (WSA) confirm that the EU-27 was largely responsible for applying the brake to global production growth. Output among the 62 countries reporting to the WSA was just 0.9% higher than in the first half of 2011 at 766.861 million tonnes, with EU production sliding 4.6% or more than 4.2 million tonnes over the comparative periods to 88.934 million tonnes. Although output was 2.5% lower in Brazil at 17.39 million tonnes, most of the other major steel producing countries of the world avoided negative

growth territory. Turkey and the USA returned some of the most encouraging stats: the former saw its output rise 9.3% from 16.404 million tonnes in the first half of last year to 17.924 million tonnes in the corresponding period of 2012; while the latter enjoyed year-on-year growth of 8.4% from 42.686 million tonnes to 46.257 million tonnes. In both cases, however, year-on-year production growth was slower in June (at 4% for Turkey and 0.8% for the USA) than across the first six months of the year as a whole. In Russia too, output in June is estimated to have climbed only 0.3% year on year to 5.78 million tonnes whereas the half-year total was 2.7% higher at 35.686 million tonnes. The Ukraine, conversely, increased its output by 3.4% in June and yet the first half of the year saw a production drop-off of 3% to 17.176 million tonnes.

### Negligible change

In Asia, China achieved a crude steel output of just over 60.2 million tonnes in June for a year-on-year increase of 0.6%; however, the 357.197 million tonnes produced in the first half of 2012 represented a slightly greater hike of 1.8%. Japan upped its production by 3.5% to 9.199 million tonnes in June although the running total of 54.066 million tonnes reflected negligible change from January-June 2011. India recorded year-on-year output gains of 2.1% in June and 3.1% for the half-year as a whole, while South Korea increased its production by 4.3% to 5.895 million tonnes and by 3.1% to 35.02 million tonnes when making the same respective comparisons. By the mid-point of 2012, steel output in the Africa/Middle East region was 0.3% lower than in first-half 2011 at 17.456 million tonnes while production in Oceania plunged 33.3% to 2.388 million tonnes. In June, the average crude steel capacity utilisation rate among the 62 countries reporting their statistics to the WSA climbed to 80.4% from 79.7% in May, but remained 2.5 percentage points below the figure for June last year.



**Buyers of all Ferrous,  
Non-Ferrous Metals &  
End of Life I.T. Equipment**

**Tel: +44 141 440 0424  
Fax: +44 141 440 0874**

E-mail: [sales@jradam.co.uk](mailto:sales@jradam.co.uk)  
Website: [www.jradam.co.uk](http://www.jradam.co.uk)

**Riverside Berth, King George V Dock  
Renfrew Road, Glasgow, G51 4SD**



**Quad Plus**

**Better Controls  
for BETTER  
SHREDDER DRIVES!**



**Main Motors  
for Auto Shredders**  
Preferred by Power Company  
Lower Power Bills  
AC & DC  
500 - 10,000 HP

**+1-815-724-2242 • [www.quadplus.com](http://www.quadplus.com)**

Mobile and Portable Shears & Balers



**Wherever  
you need  
they can go!**

- Easy to transport.
- Dual wing Precompression box.
- Strength and durability with minimum weight.
- Fast and Efficient.
- High productivity, up to 20 Ton/h.
- Reliable with minimum maintenance and Downtime.
- Machine can be operated by crane operator via remote control.



**Industrias Hidráulicas, s.a.**

P.I. Malpica, calle E, nº 54-55  
Apartado 662 - 50016 ZARAGOZA - Spain  
Tel. +34 976 57 34 10\* Fax +34 976 57 23 54

[www.moros.com](http://www.moros.com)



**RED GIANT**



**The multitalent for  
wood, waste and scrap!**



**WE SHRED  
EVERYTHING**

mobile systems & stationary plants | economical & reliable | service worldwide

HAMMEL Recyclingtechnik GmbH  
Phone: +49 (0) 36 95 / 69 91 -0

Leimbacher Straße 103  
E-Mail: [info@hammel.de](mailto:info@hammel.de)

D-36433 Bad Salzungen  
Internet: [www.hammel.de](http://www.hammel.de)

**Visit us! rwm, 11 - 13 September 2012, NEC Birmingham!**

### Production cuts

Although US steelmakers were among the most active in the first six months of the year, the second term started at the slower pace seen in June. For the week ending July 21, domestic raw steel production was broadly unchanged from last year at 1.837 million net tons while capacity utilisation dipped to 74.3% - its lowest level of the year so far. Adjusted production to this point of 2012 amounted to 55.767 million tons (6.1% up on the same period in 2011) while the year-to-date utilisation rate was 3.3 percentage points higher than last year at 77.8%.

In China, meanwhile, a growing number of steelmakers are cutting production in the face of poor sales, with the China Iron & Steel Association calculating an almost 0.4% dip in average daily output to 1.958 million tonnes for the first 10 days of July. Anshan Steel and Jinan Steel are among those to be taking assorted maintenance over the next few weeks. Domestic scrap prices have duly suffered, with heavy scrap values falling typically US\$ 35-40 per tonne over the course of a week towards the end of July.

The production cuts were greeted almost immediately with a slight increase in

some hot rolled coil prices although the rebar market continued to weaken.

Looking to the longer term, annual crude steel production in Russia is expected to climb around 14% to 80 million tonnes in a decade from now, Mikhail Makarov told delegates at Metal Bulletin's 10th Russian and CIS Steel Summit in late June. The Russian Steel Consortium's Managing Committee Chairman said growth would be underpinned by the shift towards electric arc furnaces.

many regions of the world, it is traditionally more difficult to give an accurate market reading because trading levels are generally lower and many of the major consumers are largely absent from the market.

Ferrous scrap prices have been moving higher of late but caution is advised when assessing forward prospects, not least because of the high stocks of finished steel reported to be sitting in mill warehouses in Turkey and elsewhere around the world. □

### Outlook

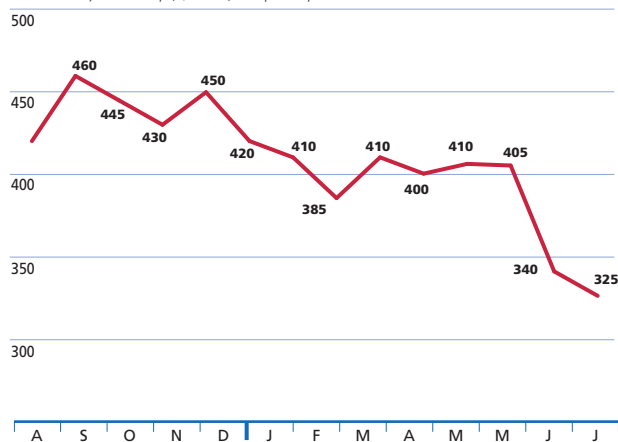
At this point of the year, when summer holidays become a dominant factor in

## Ferrous Scrap Prices

Reference date: August 1, 2012

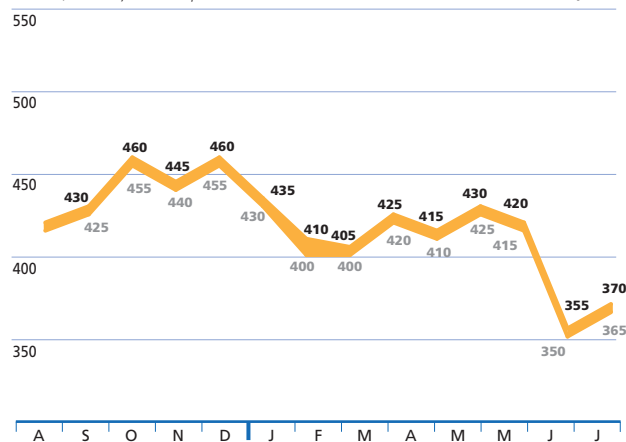
### USA Domestic Scrap Prices (US\$/GRT)

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



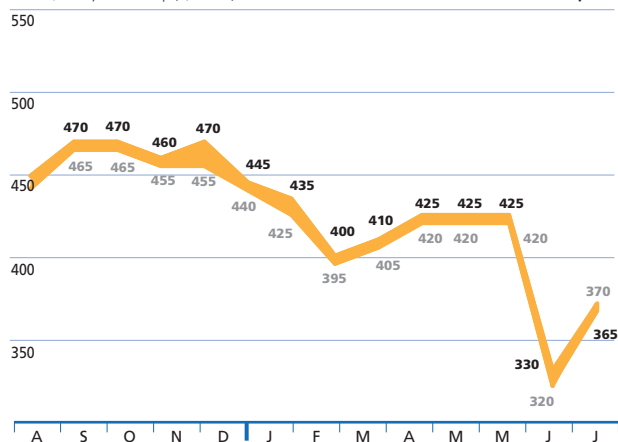
### Fob Rotterdam Export Prices (US\$/t)

HMS 80/20 heavy steel scrap



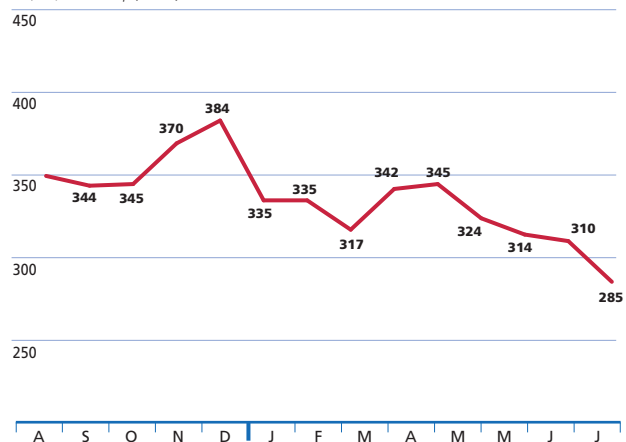
### USA Export Prices (US\$/GRT)

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



### Average German Scrap Prices (€/t)

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





# E-SCRAP CONFERENCE

*Tune into E-Scrap Conference*

September 19-20, 2012  
Hyatt Regency Dallas at Reunion



*For more information on how  
you can sponsor, exhibit and  
attend E-Scrap Recycling  
Conference 2012 visit  
[www.e-scrapconference.com](http://www.e-scrapconference.com)  
or call Resource Recycling,  
Inc. at (503) 233-1305*



en.cmra.cn  
cmra@chinacmra.org  
8610 82298684

## **The 12<sup>th</sup> Recycling Metal International Forum The International Recycling Metal Exhibition & Trade Fair**

| 7-9 November 2012 | Beijing, China | China World Exhibition Hall |





Visions become reality.

# ALUMINIUM 2012

09 - 11.10.2012 | Messe Düsseldorf  
9th World Trade Fair & Conference

[www.aluminium-messe.com](http://www.aluminium-messe.com)

Organiser:



Partner:



Aluminium ALUMINIUM



**MetalBulletin**  
Events



# Steel Scrap Conference

12-13 September 2012  
Movenpick Hotel, Istanbul

Your gateway  
to the ferrous  
scrap market

**“This conference is current and establishes the positive direction for the steel scrap business globally.”**

Alex Chang, GSL Materials Recycling

For more information and to register please visit [www.metalbulletin.com/events/scrap](http://www.metalbulletin.com/events/scrap)

# Nickel & Stainless

Closed: July 27 2012

## A market short on confidence

Negative data and sentiment have pushed the stainless scrap market even lower. The 304 grade is now attracting US\$ 1620-1670 per tonne as against US\$ 1720-1770 in early June while 316 material has seen its value drop over the same period from US\$ 2420-2470 to US\$ 2340-2390. Chrome scrap price ranges have also suffered: 430 material has declined from US\$ 560-600 to US\$ 510-550 per tonne while the 409 quality has slid from US\$ 460-500 to US\$ 410-450.



The fall in stainless steel scrap prices has continued since our previous report in early June. The 304 quality has suffered a decline of US\$ 100 per tonne to trade currently at US\$ 1620-1670 while 316 scrap is now attracting US\$ 2340-2390 owing to the impact of a lower molybdenum price. As regards chrome scrap, the 430 quality is fetching US\$ 510-550 per tonne while 409 material is valued at US\$ 410-450 because of lower steel scrap prices and the change in the Euro/US dollar exchange rate (which stands at 1.21 at the time of writing). A market observer with more than 40 years' direct experience of the stainless steel sector has identified a cycle of almost exactly a decade where low nickel prices coincide with a downward trend in stainless steel production: the years 1971-72, 1981-82, 1991-92, 2001-02 and 2011-12 offer the best examples of this phenomenon. Recently, nickel prices fell to below US\$ 15 650 per tonne on July 24 thanks in no small measure to weak economic data from the USA and China, together with worsening debt issues in Europe. Speculative short selling and, more recently, long liquidation have maintained the downward pressure on nickel, as the US dollar and the government bonds of the

major economies have been the beneficiaries of safe-haven investment flows. Further price weakness looks likely in the absence of production cuts to restore balance to the market in the face of weak physical demand.

### Stunning rise

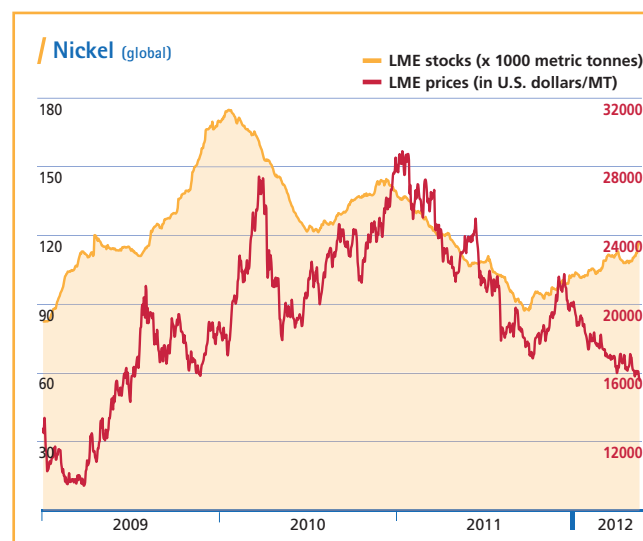
Latest statistics from the International Nickel Study Group indicate a rising output of primary nickel to 708 800 tonnes during the first five months of 2012 - an increase of 11.5% from the same period in 2011. It is worthy of note that Russia exported 105 700 tonnes in January-April this year for a stunning rise of 50.2% compared with

the same months in 2011. Figures available to date show primary nickel usage did not keep pace with output: some 681 800 tonnes was consumed in January-May 2012 for an increase of 4% over the previous year. Nickel usage actually declined in most market areas. Meanwhile, crude stainless steel production in the EU-27 dropped 2.1% from 3.482 million tonnes in January-May 2012 to 3.408 million tonnes in the same period of 2012, according to Market Research Heinz H. Pariser. As a consequence, there was a decline demand for stainless steel scrap - as was the case for all primary and secondary raw materials - and stainless

steel scrap trade bounced back by 8.8% between January and May 2012 when compared to the same period last year. EU-27 stainless steel scrap imports fell by 13.3% and exports slowed by 8.6%. Orders from the region's steel mills are very poor and experts doubt whether this situation will change in the fourth quarter following the holidays.

### Ferro-chrome

During the course of April, South Africa's exports of charge and high carbon ferro-chrome dropped to a more than one-year low; volumes fell by 26.1% when compared to March.



Closed: July 27, 2012

### Entering the Death Zone

Nickel has broken the 16,000 \$/t resistance line and it has to be feared that the price could slip further over the summer in absence of any stimulus for stainless steel growth. The unsolved debt crisis in Europe, the slowdown in China and Asia fuels the fear that the Nickel surplus for 2012 will much be higher than previously expected. SMR has lowered its stainless crude steel growth forecast to only +1.5% this year.

©copyright SMR GmbH 2012  
www.smr.at







## Minor metals

Ferro-tungsten - the high flyer at the time of our previous report - has lost some of its altitude in recent weeks, falling from US\$ 54.25-55.50 per kg W to the still very good price range of US\$ 50.75-52.25. Ferro-vanadium has followed ferro-tungsten on its way down and is currently at US\$ 24.40-25 per kg V. Meanwhile, there has been a further reduction for ferro-titanium (maximum 4.5% Al), the price of which has fallen to US\$ 7.30-7.40 per kg Ti.

The exchange metals have followed the general trend on the LME. Although cobalt has showed some turnover, its price has dropped from more than US\$ 30 000 to US\$ 27 300-28 200 per tonne for a loss of nearly 10%. Molybdenum has been hit by lacklustre demand from the stainless steel industry; with hardly any trading on the LME, prices have hovered between US\$ 26 000 and US\$ 28 000 per tonne.

Year-to-date exports reached 963 000 tonnes, which was 19.8% lower than during the same period in 2011. The EU-27 benchmark price for charge chrome has been settled at US\$ 1.25 per lb. It is reported from Johannesburg that the ANC-Youth League intends to dramatically change the mining sector - a development which could also have consequences for the domestic chrome situation. Ferro-chrome producers will intensify their efforts to convince the South African government to introduce an export tax on chrome ore. Exports of cheap, unbeneficiated ore to China are helping to erode South Africa's ferro-chrome market share and are undermining prices of both ore and alloy. A close adviser to South Africa's minerals department has said that a chrome ore exchange would be a better option than an ore export tax. Chrome market participants are keenly monitoring developments.

## Europe

At the time of writing, the nickel market appears to have stabilised at a lower level. Meanwhile, stocks in LME warehouses have continued rising and stand at more than 110 000 tonnes. Nothing much has moved in the physical market; demand for both primary

and secondary nickel remains weak and alloyed scrap prices have fallen slightly yet again. In Germany recently, V2A scrap (304) has been yielding some US\$ 1669 per tonne while V4A scrap (314) has been fetching nearer US\$ 2381. Nickel cathodes have been traded of late at US\$ 15 000 per tonne.

## China and elsewhere in Asia

On a year-on-year basis, Chinese imports of nickel and its alloys declined almost 30% in June to 9826 tonnes, while incoming volumes across the first half of this year were 28% lower. The country's net imports of nickel are projected to increase given that the stainless steel market is recovering slowly. The nickel price on the Shanghai spot market has fluctuated over recent weeks, with downward pressure applied by the European debt crisis among other factors. As a result, many traders have chosen to remain on the sidelines.

According to China's National Bureau of Statistics, domestic nickel production went up by almost 22% in June, contributing to an increase of 2.3% to 101 101 tonnes for the first half of the year. With China upping its nickel output, yet more pressure will be exerted on the market's fundamentals.

## North America

Compared to the same month last year, US stainless steel consumption jumped 12.3% in April to 211 015 tons while imports surged 22.5% to 78 523 tons, according to the Specialty Steel Industry of North America. More recently, however, US stainless scrap prices have been afflicted by the desire to keep a tight rein on stocks amid softer

demand for stainless steel finished products. Leading producer North American Stainless has cut prices on some of its grades in response to competitively-valued imports.

According to the latest forecasts from Bank of America Merrill Lynch, meanwhile, the nickel price will average US\$ 18 067 per tonne this year, rising slightly to US\$ 18 250 in 2013. □



## Non-Ferrous

Closed: July 30 2012

### Caution is the buyers' watchword

The European debt crisis continues to hang like a sword of Damocles over the metals markets. Orders are being placed – but largely in line with immediate needs rather than for stocking purposes. As per July 30, LME cash prices were at the following per-tonne levels: aluminium US\$ 1859.50; copper US\$ 7554.50; lead US\$ 1907; zinc US\$ 1834; and tin US\$ 18 175.



#### Aluminium

In both the primary and secondary aluminium sectors, supply is currently exceeding demand within Europe. Stocks of primary aluminium in LME warehouses have remained above 4.8 million tonnes, although it is worth remembering that a large proportion of this volume is not available to the market.

Aluminium scrap prices fell again in late July. In Germany, aluminium wire scrap (Achse) is being quoted at

US\$ 1847 per tonne at the time of writing while aluminium turnings (Autor) are yielding around US\$ 1252. In the UK, meanwhile, prices of commercial pure cuttings stood recently at US\$ 1129-1203 per tonne, mixed alloy/old rolled cuttings at US\$ 945-1006 and commercial turnings at US\$ 822-883.

In China, the aluminium price on the Shanghai Yangtze spot market was at Yuan 15 900 per tonne (US\$ 2480) in early June. But with the market lacking

confidence and with most smelters purchasing just enough to fulfil their orders, the light metal's value sagged to Yuan 14 900 per tonne (US\$ 2320) at the end of the month. It has since improved - with fluctuations - to Yuan 15 300 per tonne (US\$ 2390). Adequate stocks on the spot market and the advent of the low consumption season are expected to combine to minimise upward price pressure.

Compared to the same period in 2011, China's primary aluminium imports soared almost 167% in the first half of this year to 300 294 tonnes while exports surged 89% to 62 370 tonnes, the country's Customs Office has revealed.

The fall in international aluminium scrap prices over recent months is reflected in latest figures covering shipments from the USA to China: comparing the first five months of 2012 with the same period last year, the volumes shipped increased 4% to 584 000 tonnes whereas the overall value dipped 4.5% to a fraction over US\$ 1 billion. In late July, secondary aluminium prices in the USA have been holding relatively steady, with old sheet at typically 65-67 cents per lb, old cast at 66-68 cents and MLC at either side of 70 cents.

According to Davenport & Co. LLC, meanwhile, aluminium orders in North America were almost 8% higher in June compared to the previous month on the back of an 11% increase for can sheet. Across the first half of the year, total orders showed an improvement of 2.5% over the January-June period in 2011. Looking at the global picture, the primary aluminium market recorded a surplus of 592 000 tonnes in the first five months of this year; for the whole of 2011, production exceeded supply by approximately 1.7 million tonnes, according to the World Bureau of Metal Statistics. Meanwhile, annual worldwide demand for flat-rolled aluminium will jump from just over 20 million tonnes this year to around 25.4 million tons by 2016 - with China accounting for well over half the increase, reckons Norsk Hydro ASA. The leading light metal producer expects global flat-rolled capacity to more than keep pace with demand growth.

#### Copper

Copper trading in Europe is in a summer lull and LME prices have been moving within a bandwidth of US\$ 7500-7700 per tonne for quite a long period. However, there are indica-



tions that a pick-up could be seen in the second half of the year - not least because China's copper demand is expected to rise. According to analysts, an average copper price of around US\$ 8000 per tonne - considerably above current levels - is still considered a possibility.

Demand for copper scrap has remained low and prices have barely moved during the course of July. In Germany, bright wire scrap (Kabul) has been attracting around US\$ 7415 per tonne of late while copper granules 1a (Kasus) have been valued at some US\$ 7470. As for non-alloyed bright wire scrap (Kader), prices have hovered around US\$ 7132 per tonne in recent times.

In value terms, US exports of copper scrap to China edged 1% higher year on year to more than US\$ 1.3 billion in the first five months of 2012; meanwhile, volumes climbed some 3% to around 380 000 tonnes. The value of US copper scrap dispatched to all destinations in January-May this year was 3.3% lower than in the corresponding period of 2011 at US\$ 1.95 billion whereas volumes increased 3% to more than 509 000 tonnes.

In the first half of 2012, China's refined copper imports leapt more than 73% year on year to 1.88 million tonnes - an indication that the country's demand for copper has not dropped dramatically despite rising stockpiles and weaker fundamentals.

The copper price on the Shanghai Yangtze spot market experienced ups and downs during June and July, ranging between Yuan 52 300 (US\$ 8171) and Yuan 56 500 per tonne (US\$ 8828). Most downstream smelters remain pessimistic about market prospects, and are therefore joining traders in maintaining a cautious approach. The key obstacle to higher copper prices on the Shanghai market is flat demand which is deemed unlikely to rebound in the short term.

According to China's National Bureau of Statistics, domestic output of refined copper gained more than 10% to

2.916 million tonnes when comparing January-June 2012 with the same period last year.

A global production deficit of 104 000 tonnes in April contributed to a refined copper market shortfall of 384 000 tonnes for the first four months of 2012, according to preliminary figures from the International Copper Study Group (ICSG). World apparent usage of copper jumped some 10% in January-April this year when compared with the same period of 2011, although overall consumption declined 2.5% if China is taken out of the equation. Usage in the EU, Japan and the USA declined in turn by 7%, 3% and 1% whereas China's apparent consumption soared 33% in the first four months of this year to account for 43% of world usage. But specifically regarding China, the ICSG points out: 'Comparative net imports in the first quarter of 2011 were weak and anecdotal evidence suggests that the high import level in the first months of 2012 was accompanied by increased inventories held in bonded warehouses.'

World refined copper production climbed 4.5% in the first four months of 2012, the ICSG adds. 'Primary production was up by 3.6% (mainly due to an increase in electrowon production) and secondary production from scrap increased by 8.8%', the organisation notes. 'The main contributors to growth were China (+12%), Japan (+10%) and Africa (+9%) with production declining by 4% in Chile and 1% in the United States.'

The average world refinery capacity utilisation rate edged up to 78.9% from 78.5% when comparing January-April 2012 with the same period in 2011.

## Lead

Global consumption of refined lead slid 3.8% in the first five months of this year to 4.069 million tonnes - not least because of a slump of 11.7% in China's apparent demand. Provisional data from the International Lead & Zinc Study Group (ILZSG) also reveal that usage in the USA edged 1.8% lower

over the period whereas demand in Europe was almost identical to that reported for January-May 2011.

Worldwide production of refined lead also dropped in the first five months of 2012 - but by a more pronounced 5.2% to 4.101 million tonnes. Declines in Australia, China, Germany and the USA more than offset the increases in India, Japan, the Republic of Korea and the UK, according to the ILZSG. Thus, for this year's January-May period, the global refined lead market was 32 000 tonnes in surplus.

Although lead prices fell in line with those of the other base metals during the course of July, many market participants are forecasting an upward trend in this market over the coming months. In line with other analysts, the ILZSG sees the possibility of a deficit in the lead market in the medium term - for the first time since 2007. If demand indeed outstrips supply in the coming months, there could be a move to higher price levels. Experts point out that the analysts' forecasts differ in the details but that all parties are anticipating a positive trend in the lead market. In recent months, however, lead demand in Europe has been somewhat lacklustre - a situation attributed to the effects of the continent's debt crisis as well as to the traditional lull in sales during the summer months.

Meanwhile, China's refined lead imports showed a decline of more than 7% to 71 405 tonnes in this year's January-June period. A lifeless domestic market has been blamed for this outcome and weak demand is expected to persist in the near term.

The lead price on the Shanghai spot market was around Yuan 15 030 per tonne (US\$ 2348) in early June. But as most downstream smelters chose to keep their stocks to a minimum, prices were pushed even lower to Yuan 14 500 per tonne (US\$ 2265); at the time of writing, however, there has been an improvement to Yuan 14 900 (US\$ 2328). Most experts appear to be expecting traded volumes to rise once the market price stabilises.

Figures from China's National Bureau of Statistics indicate that domestic refined lead production climbed to 459 000 tonnes in June as a result of, at least in part, demand for lead-acid batteries. Overall demand for lead in China is expected to pick up during the second half of this year.

## Zinc

Despite a drop in production, refined zinc racked up a global surplus of 149 000 tonnes in the first five months of this year, according to preliminary stats from the International Lead & Zinc Study Group (ILZSG).



## we take care of your detector - alarms !

radiation protection:



GHS Strahlenschutz GmbH  
Technologiezentrum  
Lohbachstrasse 12  
D-58239 Schwerte  
Tel: +49 (0)2304 945-110  
Fax: +49 (0)2304 945-109

- measurement of radiation
- identification and
- separation of radioactive contaminated material
- transport
- decontamination
- reuse, recycling
- conditioning for dumping

for further details: [www.ghs-strahlenschutz.de](http://www.ghs-strahlenschutz.de)

## BM Eddy Current non-ferrous separators

Complete solutions in separating technology.  
Over 50 years experience!

- Optimum efficiency
- Suitable for extreme large capacities



**Bakker Magnetics**

Bakker Magnetics bv Sciencepark Eindhoven 5502, 5692 EL Son - The Netherlands, Phone +31 (0)40 - 2 678 678, Fax +31 (0)40 - 2 678 899, E-mail: [Info@baktermagnetics.com](mailto:Info@baktermagnetics.com), [www.baktermagnetics.com](http://www.baktermagnetics.com), UK agent: [www.lhs.uk.com](http://www.lhs.uk.com)

Centre of magnetic knowledge...

## Experienced specialists in Collecting and recycling of

- Paper • Board
- Plastics • Archives destruction



**FIBRES s.a.**

Bel Fibres SA | Rue de Monte en Peine 2 | 7022 HYON | Belgium  
Phone (+32) 65.760.960 | Fax (+32) 65.760.965 | E-mail [info@belfibres.be](mailto:info@belfibres.be) | [www.belfibres.be](http://www.belfibres.be)

## Metals Separation by Sink/Float Technology



Double Stage Double Density  
Three Products from Non Ferrous Scrap  
From 3 up 20 tph with 10-150 mm feed



Your reliable supplier of turn key scrap processing plants

[www.protec-srl.com](http://www.protec-srl.com) e-mail: [protec-srl@protec-srl.com](mailto:protec-srl@protec-srl.com) phone: +39 010 414546 fax: +39 010 460929

Compared to January-May last year, output dropped 1% to 5.278 million tonnes as increases in India, Japan, the Republic of Korea, Mexico, Peru and the USA were more than outweighed by declines in Belgium, Brazil, Canada, China and South Africa. Global usage of refined zinc edged 0.6% higher to 5.129 million tonnes over the same period, with demand falling in Europe by 4.6% but rising by 1.4% and 2.4%, respectively, in China and the USA, the ILZSG points out.

Market analysts believe a drop in zinc supply over the medium term will result in firmer prices for the metal. Over the

last two months, however, its value has barely changed.

Zinc demand within Europe has remained low, mainly as a result of the order situation in the construction sector. Investors are sceptical and have delayed many large-scale construction projects. In Germany, old zinc scrap (Zebra) has been commanding around US\$ 1280 per tonne of late.

Across in China, imports of refined zinc totalled 215 139 tonnes in the first half of the current year - a jump of more than 28% when set against the corresponding period in 2011. By the same comparison, exports slumped

83% to 5793 tonnes, prompting analysts to talk in terms of a slow recovery in downstream demand.

Starting out at Yuan 14 800 per tonne (US\$ 2310) in early June, the zinc price on the Shanghai spot market then embarked on a generally downward trend as most traders and downstream smelters declined to enter the market on a large scale. Trading levels have improved since the price hit Yuan 14 500 per tonne (US\$ 2265) towards the end of June but most market participants are still not optimistic about the medium- and long-term prospects for zinc.

According to China's Bureau of Statis-

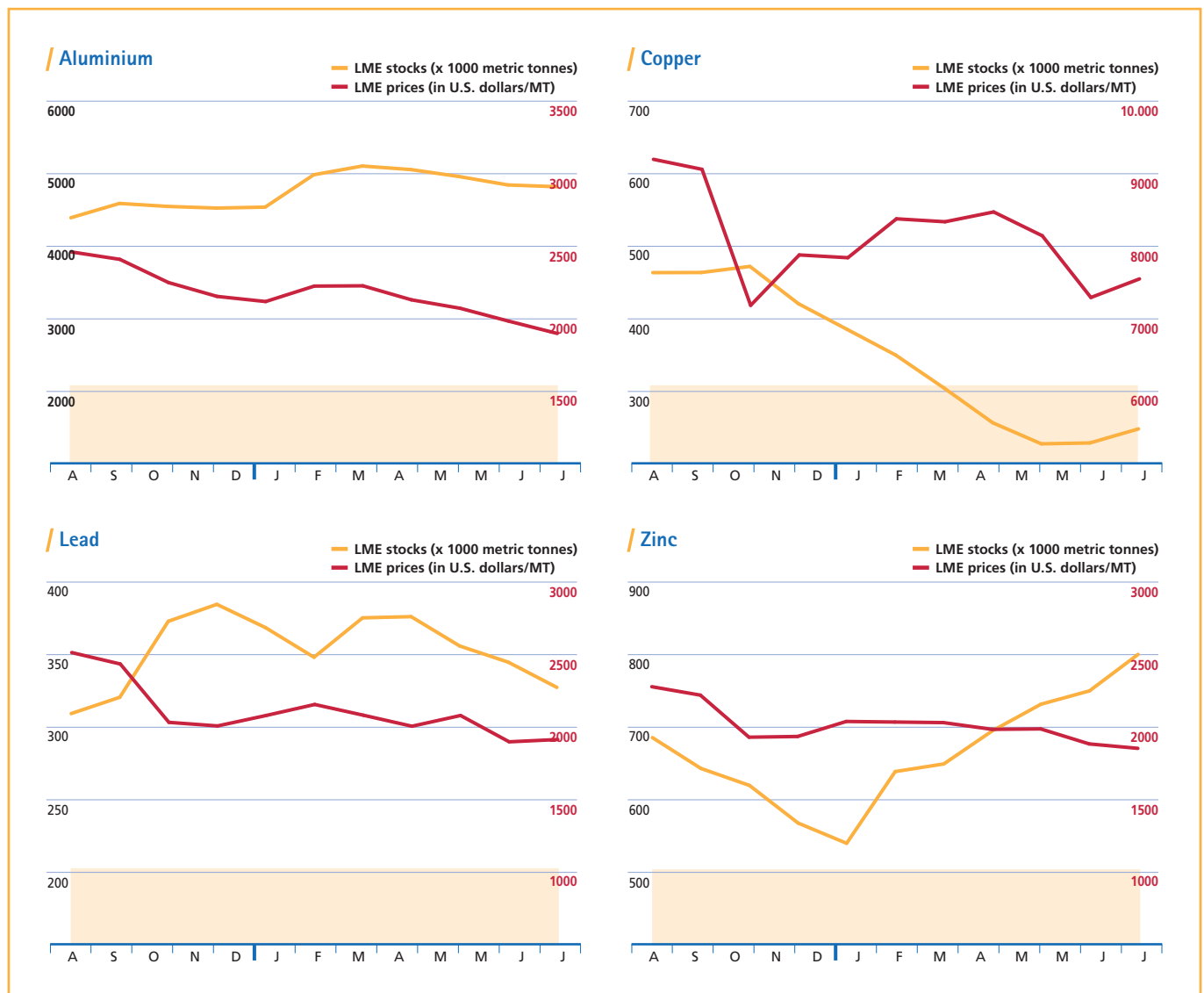
tics, domestic zinc production dropped 6.2% to 2.35 million tonnes when comparing January-June this year with the same period in 2011. Further declines in capacity utilisation are envisaged and the majority of zinc smelters are said to be running at a loss. □

**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: August 1, 2012



# Paper

Closed: July 30 2012

## Summer market malaise

The early summer months in the northern hemisphere produced some steep declines in the values of the lower grades of recovered fibre. At the same time, however, the holiday season in key exporting regions of the world has been capping the tonnages of all grades of fibre collected for processing. The pressure on shipping space has relented slightly in recent weeks, it is widely reported.



### Europe Labourled collections

Owing to the summer holidays and to the widespread economic slow-down, volumes of the lower grades of recovered paper entering merchant processors' facilities can best be described as labourled.

European mills lowered their prices again for the month of July, while export prices to Far East destinations fell sharply during June and July. Higher ocean freight costs were compensated in part by

the favourable Euro/US dollar exchange rate; at the same time, slightly more shipping space was available and booking export containers became slightly easier. As for India, freight rates seem to have become more stable; container availability continues to be difficult but has become slightly less tense of late. Although demand for the brown grades has been reasonable in Europe and Asia, the deep-sea export market has been tending to continue its fall. However, this appears set to stabilise shortly - not least because there is not much OCC or

mixed paper available to the markets and stocks are not very high in Europe. Demand for the deinking grades is reasonable to slow in both Europe and Asia, with India said to be buying virtually nothing; prices fell in June and again in July. Demand has been reasonable to good in Europe for most of the middle grades and prices have tended to stabilise, whereas orders from India and other Asian destinations have been reasonable but at low prices. Incoming volumes of the deinking qualities have been disrupted by a

combination of lacklustre economic activity and the arrival of the peak summer holiday season in many parts of the world. The higher grades of recovered paper cannot be sourced in abundance at a time of stable demand; nevertheless, prices are generally edging lower.

### North America Summer doldrums

The North American market is suffering from an attack of the summer doldrums, not to mention the weakening economies in China and Europe. Domestically, prices fell during July for the brown grades such as OCC and DLK, and are expected to drop again in August. Some board mills took downtime in July.

There has been a slight slowing in orders from Asia - especially from China - and so more tonnage has remained available to the US market. Domestic mills were being offered additional volumes and some duly took advantage of this situation, but most operators are reporting already-high inventories of recovered paper.

All the indications are that the Chinese market will remain relatively quiet for the remainder of the summer although reduced ocean rates have encouraged some of the country's mills to remain

### Green light for DS Smith/SCA deal

UK-based DS Smith Plc has completed the acquisition of the packaging division of Svenska Cellulosa Aktiebolaget (SCA), excluding the kraftliner assets, for around Euro 1.6 billion. 'SCA Packaging is the second largest packaging business in Europe and the acquisition represents a significant opportunity for DS Smith to achieve its stated strategic aim of becoming the leading supplier of recycled packaging for consumer goods in Europe,' the buyer says in a statement.

Service-Links: The board of DS Smith believes the acquisition, first announced at the start of the year, will 'drive growth' and add value for its shareholders by: providing access to new geographical markets across Continental Europe; and developing broader relationships with existing customers as well as the potential to win new customers through an increased ability to supply and innovate new products and improve service levels. SCA's two kraftliner mills in Sweden are not included in the transaction 'as they are well integrated with SCA's forest products operations', states the Swedish group.





in the market despite weaker economic data.

The woodfree deinking grades and pulp substitutes are moving steadily in both the domestic and export markets. Overall, the domestic and export recovered paper markets are expected to remain stagnant at least into September. Meanwhile, latest Census Bureau figures reveal that US overseas shipments dipped around 4% in the first five months of this year to 9.37 million short tons despite year-on-year increases of 1% for OCC, 11% for ONP and 9% for high-grade deinking material. Making the same comparison, exports of the pulp substitutes and mixed papers fell, respectively, 14% and 3%. The value of US exports increased to US\$ 295 million in May this year from US\$ 293 million in the previous month to give a five-month cumulative total of around US\$ 1.5 billion - some 5.6% lower than January-May 2011 revenues. The leading destinations were: China on US\$ 962 million (+2% year on year); India on US\$ 125 million (-4%); and Mexico on US\$ 105 million (-29%).

## Asia

### Weak product demand

Recovered fibre prices started to fall during the course of July, due mainly to

weak demand in both Europe and the Far East. Mills appear to be holding reasonable inventories and demand for their finished products remains weak. Many European mills have opted to take maintenance downtime in the summer, thus making more secondary fibre available for export.

However, the summer holidays are also characterised by a steep drop in paper collection volumes and so this will have the effect of bringing supply and demand into closer balance once again. These conditions are expected to persist into August, therefore reducing the possibility of prices suffering a further fall.

Shipping lines are continuing with their efforts to hike freight rates; on the other hand, they are reluctant to push through increases if this means that significantly fewer containers will be booked. □

### Contributing to the Recovered Paper Market Analysis:

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

# Textiles

Closed: July 30 2012

By Günther Krippendorf,  
FWS Alta-West, Germany

## Collectors still 'at war'

In Europe, originals remain in short supply and the 'war' for available material continues to rage between the collecting organisations. As a result, prices of originals are nearing historical highs and no longer reflect the actual value of the material. Furthermore, this price escalation is not expected to end in the short term.

Demand for original material is far outstripping supply in Western Europe, partly as a result of the capacity expansions introduced by many sorting companies. In addition, there is considerably more demand coming from Eastern Europe and from developing countries elsewhere in the world. The market for sorted clothing is currently quite stable; demand from both Africa and Eastern Europe is healthy, especially for high-quality summer clothing. Wiping cloth orders remain very strong because there are only small volumes of raw materials available to the companies producing these products. Meanwhile, satisfactory demand is reported for the recycling grades and for bed feathers. □

### US initiative to inform about textiles recycling

In order to promote the concept of clothing as a recyclable product, the Secondary Materials and Recycled Textiles Association (SMART) is to develop grade-appropriate educational materials in conjunction with The Education Center in the USA. The promotion through the outlets of The Education Center will reach more than 750 000 educators, 15 million students and 20 million parents.

The programme will run from October through to March next year and will be distributed in 'Learning' magazine, via 'The Mailbox' elementary activities e-newsletter, and on The Education Center's Facebook page, Twitter account and in various blogs. The materials will educate students and families about textiles recycling, and will also involve schools and communities in the effort. The programme includes a send-home component students can share with their parents.

The Education Center 'has a proven track record of developing creative and highly-effective materials which teachers enjoy bringing into the classroom', comments SMART's President Lou Buty. Jackie King, Executive Director of SMART, adds: 'By using these materials, the students will learn that clothing is a recyclable product. People don't realize that 95% of all clothing and textiles can be recycled or processed by our member companies.'



machinery

**BRONNEBERG**  
recycling machines & services

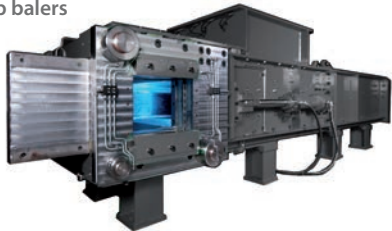


- Cable strippers

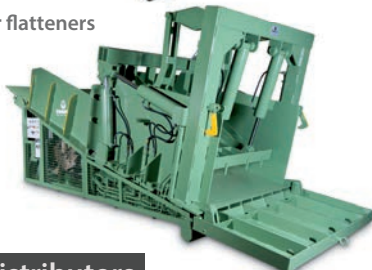
- Scrap balers



- Alligator shears



- Car flatteners



**Distributors  
wanted**

The Netherlands - Helmond  
Germany - Mannheim  
Tel.: +31 492 591900  
www.bronneberg.nl  
info@bronneberg.nl

We are an internationally oriented company active in the growth sector of raw material recycling and located in the Euregio Maas-Rhine (Aachen – Maastricht – Liège). Our good and long reputation is based in particular upon the activity 'Trade - (Oxidic/Metallic) residues'.

For the significant expansion of our second business division 'Trade – Scrap metals' and strengthening of our team we are seeking for earliest possible entry an experienced and motivated

## Trader (m/f)

**Secondary raw materials non-ferrous metals / Fe-alloys / Defective production material (Re-usable scrap).**

**Your tasks**

- International Purchase (mainly Germany/Benelux) and Sales of aforementioned materials (extensive travels),
- Customer care, new business development and after-sales service,
- Market research/market analysis, and strategy development,
- Contribution to and possibly lead position in new business projects.

**Your profile**

- Qualified commercial apprenticeship and/or university (of applied sciences) education,
- (International) experience/

- relations in the secondary metals trading field,
- In-depth IT and language skills (at least German and English, French/Dutch are considered an asset),
- Willingness to travel and (cultural) flexibility.

**We offer**

- Assured and challenging work,
- Performance-based compensation (base salary + commission),
- Perspective of corporate partnership,
- Mobile phone/company car (even for private use in case of assuming individual taxation),
- Broad range of responsibilities and attractive career options.

Have we aroused your interest? We look forward to receiving your detailed application set, stating your desired salary (base salary + bonus) and your earliest availability. Please send your documents under Chiffre 1208100 to Recycling International BV, P.O. Box 2098, 6802 CB Arnhem/The Netherlands.

**We guarantee absolute confidentiality to all applying parties!**

### Lead Acid Battery Recycling Equipment

**Dross Engineering**

Battery Breakers – Reduction Furnaces - etc...  
www.dross-engineering.com

## www.recycledirect.com

New, used and reconditioned recycling machinery  
Service spares and emergency repairs Europe-wide.  
Specialists in Lindemann equipment

Tel +44 (0)1656 724111 Fax +44 (0)1656 729777 info@recycledirect.com



## FELEMAMG magnetism

MAGNETIC FERROUS SEPARATORS

ECCENTRIC EDDY CURRENT SEPARATORS

HIGH-INTENSITY SEPARATORS

STAINLESS STEEL SEPARATORS

HEAVY-DUTY ELECTROMAGNETIC DRUMS

RECTANGULAR & ROUND LIFTING MAGNETS

Phone: + 34 985 32 44 08

Fax: + 34 985 32 42 26

felemamg@felemamg.com

GIJON - SPAIN

Solutions since 1970

REFERENCE  
WORLDWIDE

See us at the  
RWM Exhibition  
Birmingham  
11-13 September 2012  
on Stand 19V49

www.felemamg.com

If you are in... international recycling  
...you'll want to be in Recycling International!!!

**For subscriptions please contact:**

Nichole Pantophlet

T +31 263 120 994

F +31 263 120 630

E subscriptions@recyclinginternational.com

**For advertisements please contact:**

Vincent Smit

T +31 267 410 200

F +31 263 120 630

E advertising@recyclinginternational.com

www.recyclinginternational.com



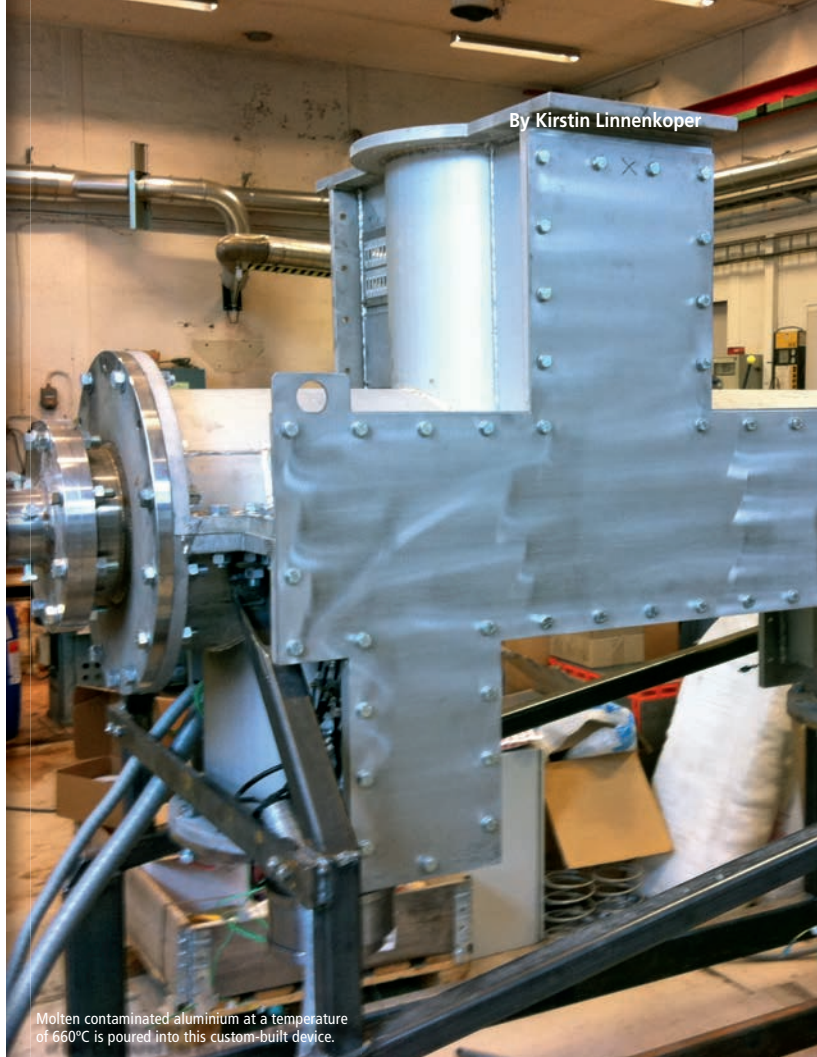


**RESEARCH** recycling of impure aluminium  
**LED BY** SINTEF  
**PARTNERS** Research Council of Norway  
 and Norsk Hydro



## SINTEF scientists target impure aluminium

Following a decade of study and the invention of a specialised piece of equipment, the Norwegian Foundation for Scientific and Industrial Research (SINTEF) is close to the moment of truth for a recycling method for impure aluminium as its team is starting the first round of official tests on a machine containing a cutting-edge purification system.



By Kirstin Linnenkoper

Molten contaminated aluminium at a temperature of 660°C is poured into this custom-built device.

An estimated 9.9 million tonnes of scrap metal is recycled throughout the world on a yearly basis; in the near future, however, much more will be required in order to keep up with the surge in demand, especially in the construction sector. In order to help sustain such a resource-intensive marketplace, metals company Norsk Hydro provided the Norwegian Foundation for Scientific and Industrial Research (SINTEF) with enough financial support to kick-start a project with the aim of getting a step closer to its long-harboured dream of annually recycling 1 million tonnes of aluminium by 2020. At the heart of the Norwegian venture is a four-metre-long piece of equipment containing 40 heating elements, which offers a new type of refining procedure. Molten contaminated aluminium at a temperature of around 660°C is poured into the top of this custom-built device and then passes through a horizontal channel. The whole system is slightly tilted while a

graphite-based rotating screw balances the solidified crystals, thus forcing the pure aluminium upwards to the hottest point whereas the impurities remain in the cooler portion. As a result, pure aluminium is allowed to exit via the machine's two outlets.

### Unwanted elements

One of the SINTEF experts working on the project is Dr Anne Kvithyld, who won the 2011 Vittorio de Nora Award for her work in aluminium recycling. She points out that every time metal is recycled, there is a slight increase in the proportion of unwanted elements present in the smelt. Therefore, industry is forced to take counter measures, such as adding pure aluminium in order to avoid ending up with 'rubbish alloys'. If all goes well, the new refining furnace might just be able to 'reverse that trend', she adds. Recognising the impossibility of stripping metals completely of their impurities, Dr Kvithyld maintains that maximum effort must be made to 'separate

them out properly'. The pilot tests run to date have been encouraging, most specifically because of the machine's ability to expel the material according to the team's detailed wishes.

### Upgrading the purity

'If we put in aluminium that contains 2% iron, there will still be 2% in the smelt when it emerges, but we can choose for equal amounts to take out 3.9% iron on the dirty side and 0.1% on the clean side,' the aluminium expert says. The eventual purity level depends solely on how long they run the process. 'In theory, we can even set it to produce completely pure recycled aluminium,' she continues. 'But then we have to take the economics of the process into account. For the time being, the most important thing is to upgrade the aluminium to a quality that can be reused.'

This is a vital goal, says the team of scientists, as recyclers most commonly run operations using pallets of scrap

metal which are truly a 'mixture of many things'. Dr Kvithyld remarks: 'Impure metal can be used in products that do not need to be pure, such as certain vehicle components, for example.' However, this applies only to a small proportion of items; many commonplace products, such as kitchen foil, rely only 'extremely pure aluminium' and must contain nothing else. The project is currently in its last year of self-financed research, receiving additional aid from the Research Council of Norway. What happens next will be based on the final and official analysis to be conducted in the final week of August, SINTEF has announced. During that test run, a total of 50 kg of contaminated aluminium is scheduled to be poured into the machine and the resultant streams will be closely scrutinised. □

For more information about this technology, contact Dr Anne Kvithyld at: [Anne.Kvithyld@sintef.no](mailto:Anne.Kvithyld@sintef.no)

## Closing dates

### Editorial closing date:

August 27 2012

Contact Manfred Beck

T +31 26 3120 994

F +31 26 3120 630

E manfred@recyclinginternational.com

### Advertisement closing date:

August 29 2012

Contact Vincent Smit

T +31 267 410 200

F +31 263 120 630

E vincent@recyclinginternational.com

## Extra circulation!

Additional copies of the September issue will be on display at:

### Recycling 2012

18-20 September

Gorinchem (the Netherlands)

[www.evenementenhal.nl](http://www.evenementenhal.nl)

### Aluminium 2012

9-11 October

Düsseldorf (Germany)

[www.aluminium-messe.com](http://www.aluminium-messe.com)

# In the September issue

- Radioactivity in scrap
- EU's raw materials strategy
- E-scrap recycling in Bangladesh
- Hunan Vary Co. – Chinese recycling machinery
- Tyre recycling in Sweden
- Company profile: Terracycle

### And, of course, our regulars:

Viewpoint • News • Product News • In-depth Market Analyses covering ferrous and non-ferrous metals, nickel & stainless, paper and textiles • In the laboratory

## Advertiser index

	CMRA	76	Höcker	9	Metpro International	44	Sierra Europe	2
	CP Group	14	ICM	32	MEWA Recycling Anlagen	18	Titech	34
A-1 Specialized Products	24	Danieli Lynxs	7	ILG Industrielärmschutz	18	MG Recycling	30	Untha shredding technology
Adam, John R. & Sons	68	DSM Powders	4	JMC Recycling	60	Moros (Industrias Hidráulicas)	68	ZB Talleres
Aurubis	48	Gemini Corporation	48	KW-Generatoren	30	Pallmann	10	
A-Ward	18	General Kinematics	12	Lefort	39	Protec	76	
Backers	30	GHS Strahlenschutz	76	Levand	15	Quad Plus	68	
Bakker	76	Granutech Saturn Systems	27	Lindner Recyclingtech	48	Recourse Recycling/E-Scrap		
Balcan Engineering	22	Group Galloo	10	Liebherr	16	Conference	70	
Bel Fibres	76	GUT Environmental Technologies	30	Magnapower	17	Recy Systems	42	
BIR	38	Hammel Recyclingtechnik	68	Mantsinen	84	Reed/Aluminium 2012	71	
Bollegraaf	52	Harris	66	Metal Bulletin/Steel Scrap		RIISA	11	
Cheng Ho Hsing Heavy Ind.	56	Hermion	22	Conference	71	Sennebogen	83	

### For advertisements please contact: Vincent Smit (Sales Manager)

P.O. Box 2098  
6802 CB Arnhem  
The Netherlands  
T +31 267 410 200  
F +31 263 120 630

E [vincent@recyclinginternational.com](mailto:vincent@recyclinginternational.com)



SENNEBOGEN 60

1952-2012



-50%  
Nitrogen Oxides

-90%  
Soot particles

-25%  
Fuel  
consumption\*

Up to  
-4.5 dB  
Less noise

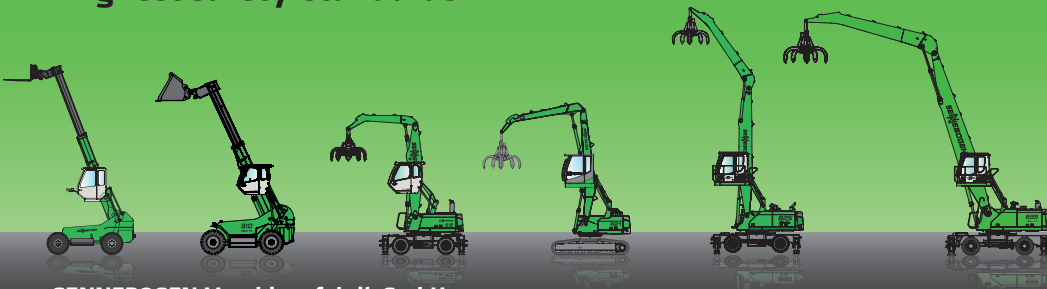
\* Up to 25% depending  
on application

835

## The new E-series

### More performance - less consumption

- **High level performance** due to robust and reliable technology
- **Energy-efficient machine** through improved degrees of efficiency
- **Optimal environmental balance** caused by modern exhaust aftertreatment
- **Comfortable handling** offered by excellent ergonomics and controllable technology
- **Highest safety-standards**



SENNEBOGEN Maschinenfabrik GmbH  
Sennebogenstraße 10, 94315 Straubing, Germany  
Phone +49 9421 540 - 0

GO FOR GREEN

www.sennebogen.com

TIER IIIB/4i  
Total compliance

**2006**

**HybriLift®** Testing  
and Development

**2008**

**200 HybriLift®**  
into Production  
and Operation

**2010**

Brand New  
**120 HybriLift®**  
is launched

# MANTSINEN HybriLift®

Increases  
Energy Efficiency  
by up to

# 35%



The MANTSINEN **120/200 HybriLift®** - Unique energy storage and redelivery system.

# OUR **HYBRID** RECYCLES ENERGY TOO



## Less energy – more load

[www.mantsinen.com](http://www.mantsinen.com)