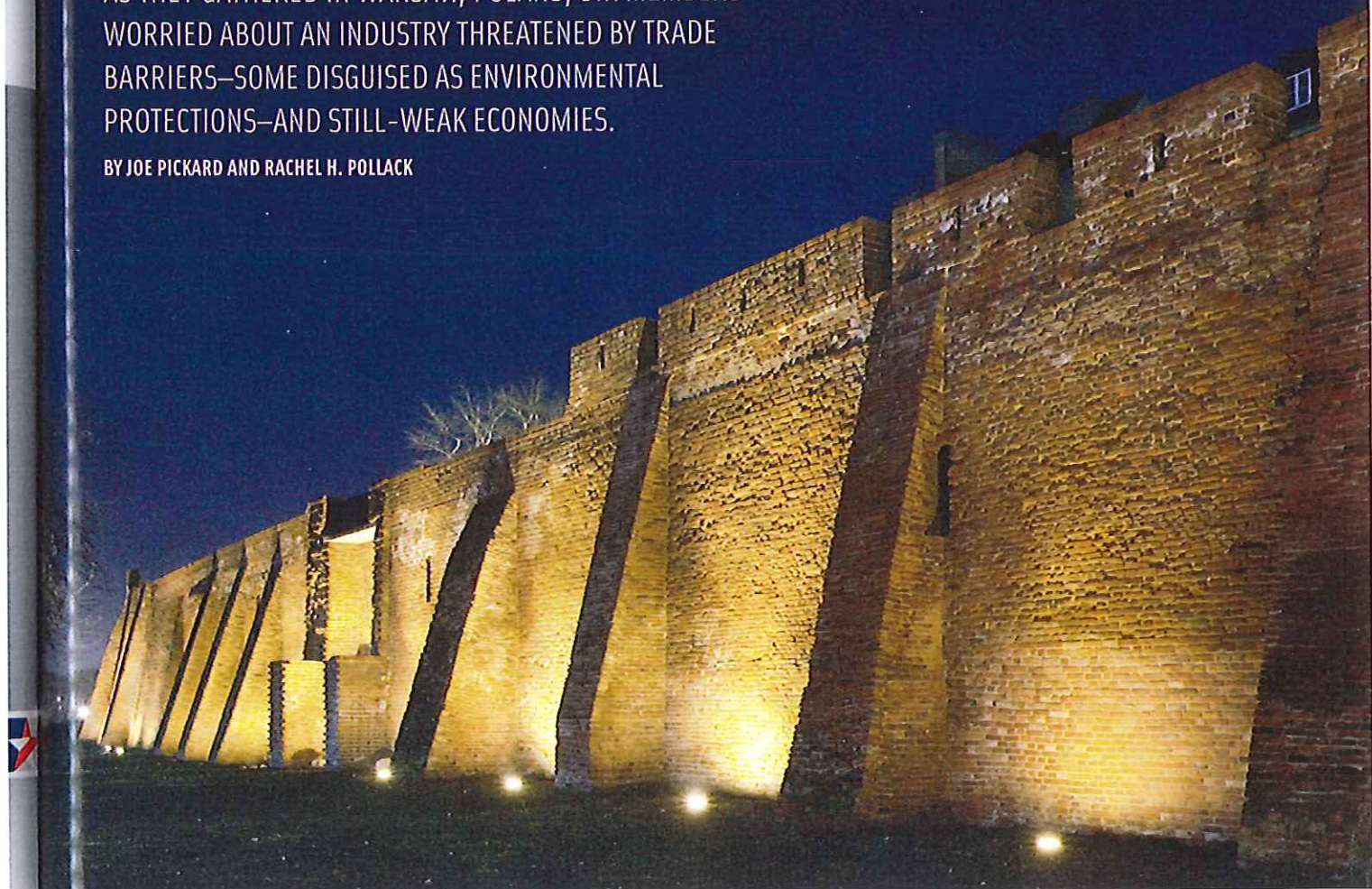


AN INDUSTRY UNDER SIEGE

AS THEY GATHERED IN WARSAW, POLAND, BIR MEMBERS WORRIED ABOUT AN INDUSTRY THREATENED BY TRADE BARRIERS—SOME DISGUISED AS ENVIRONMENTAL PROTECTIONS—AND STILL-WEAK ECONOMIES.

BY JOE PICKARD AND RACHEL H. POLLACK



Although Poland dates its origins to the first century A.D., and its history includes achievements such as the first European constitution, in its recent past it repeatedly has been besieged by outside forces. In the late 1700s, Russian, Prussian, and Austrian forces conquered the country and divided it among them, literally erasing Poland from the map for 123 years. Those attending the Brussels-based Bureau of International Recycling's fall 2013 convention seemed to feel equally besieged when they met in Warsaw, Poland, in late October. Weak economies in Europe; slow growth in North America, China, and India; and protectionist moves by many countries to secure their scrap supplies—some of which were disguised as measures to protect the environment—all seemed to be weighing on participants' minds.

FERROUS FACES ECONOMIC, ENVIRONMENTAL BARRIERS

Ferrous Division Chair **Christian Rubach** of TSR Recycling (Bottrop, Germany) described the "miserable" situation facing ferrous metal recyclers this fall: Economies in the



Christian Rubach

developed world were struggling or at most breaking even, while traditional ferrous importing countries such as Turkey and India were facing their own difficulties, with India cutting its ferrous imports more than 50 percent. In Europe, only two steel producers are making a profit, he added.

Such conditions often lead to efforts to prop up domestic industries by protecting raw materials, Rubach pointed out. A recent South African regulation, for example, forces domestic recyclers to offer their material

to domestic mills at a price 20 percent below a specified imported-scrap price. Guest speaker **Veyssel Yayan**, secretary



Veyssel Yayan

general of the Turkish Steel Producers Association (Ankara, Turkey), also expressed concern over protectionism, noting the "increasing tendency in the global markets to restrict raw materials export, especially ferrous scrap, might threaten free trade in finished steel products."

Recent European Union efforts to cloak trade restrictions with environmental arguments might be used as a blueprint by other countries, Rubach

warned. Proposals include scrap export monitoring, mandatory certification of recyclers and scrap consumers outside the EU, defining ferrous scrap as hazardous waste, and making the EU waste shipment directive more restrictive. Guest speaker **Marcel Genet** of consulting firm Laplace Conseil (Paris)



Marcel Genet

cited the Steel Action Plan the EU government published in June, which made such a proposal. Genet's firm evaluated the potential implications of scrap export restrictions and found they could have several negative consequences, whereas policies to

move more European steel production from integrated mills to electric-arc-furnace mills would have a beneficial impact. The evaluation found that EA and scrap companies combined

- employ more workers than integrated mills;

- contribute €11 billion to the EU's balance of trade by exporting scrap and finished products, compared with integrated mills' €19 billion trade deficit from importing virgin materials;

- produce 42 percent of Europe's crude steel but consume only 22 percent of the sector's energy and emit only 15 percent of its carbon dioxide; and

- can produce steel for 20 to 30 percent less than integrated mills.

E-SCRAP GROUP ADDRESSES COLLECTION, CERTIFICATION, AND EXPORTS

Electronic scrap markets are changing, recycling processes are improving, and positive net values for electronic scrap are altering the logic of the marketplace, reported **Phär Oscár** of Stena Metall (Gothenburg, Sweden), chair of BIR's new Electronic Scrap Committee. Consumers across Europe and in Italy in particular are buying fewer appliances, resulting in less e-scrap generation, he said, but new e-scrap markets continue to open up in China as it collects more appliances. Oscár reiterated BIR's commitment to free and fair trade and stressed the need for common standards and e-scrap treatment procedures.

Norbert Zonneveld, executive director of the European Electronics Recyclers Association (Arnhem, Netherlands), provided an overview of EU legislation and regulations related to e-scrap collection and processing, including changes to the Waste Electrical and Electronic Equipment Directive. EERA aims to promote a free market for e-scrap supply and demand, harmonized global legislation for WEEE recycling, and environmentally sound operating practices to protect both human health and the environment, he said. Among its achievements, Zonneveld highlighted its advocacy for a 65-percent collection target for WEEE put on the European market and noted the successful efforts to raise collection rates in Sweden and the Nordic countries.

EERA also has lobbied for auditable and traceable collection and processing systems that would prohibit the illegal export of WEEE from Europe, he said. Zonneveld suggested that WEEE exports to operators with substandard treatment should be stopped and that exports should only be allowed if the receiving treatment operator is EN 50574/50625 certified. To raise WEEE collection rates in Europe, he advocated mandatory certification and reporting

requirements, along with stricter enforcement to ensure that free-market parties report volumes to independent national registries.

ISRI's **Eric Harris** spoke about electronics recycling in the United States and the "era of certifications." The majority of used electronics generated in the United States is managed domestically, he said, and approximately 17 percent is exported as working products or commodity-grade scrap. While there is still too much e-scrap being sent to landfills, used U.S. electronics are not being "dumped" into countries that are not in the Organization for Economic Cooperation and Development (Paris), he said. As global demand for electronics continues to rise, and with e-scrap generation in the developing world poised to exceed what is generated in developed economies, the market will increasingly expect that electronics recyclers become certified, he said.

Efforts to ban U.S. exports of used electronics rely on outdated data, Harris said, and they would violate U.S. trade obligations and be politically unachievable. Exports of electronics for reuse and repair are not hazardous waste and should not be treated as such, he asserted, and there should be no restrictions on the export of commodity-grade scrap or fully tested and working used electronic products for reuse. Instead of export bans and arbitrary distinctions between processing facilities in OECD and non-OECD countries, Harris advocated using downstream due diligence and voluntary third-party certification such as R2 and R2/RIOS. He encouraged BIR members to support and promote the benefits of certification while working to maintain a competitive global marketplace.

In the subsequent discussion period, ISRI President **Robin Wiener** affirmed that ISRI fully supports shutting down informal and illegal processors of electronic scrap. It was suggested that opportunities exist for BIR, ISRI, and EERA to cooperate in promoting design for recycling to electronics manufacturers.

Despite those benefits, the scrap recyclers and EAF mills bear a disproportionate share of the regulatory burden—54 percent—compared with their proportion of steel production or CO₂ emissions, Genet said. Making the regulatory burden proportional to their CO₂ emissions would save EAFs and recyclers €763 million, or €11 per metric ton of finished steel produced. This would have a much greater impact than any scrap export restriction, he asserted. Export restrictions would reduce scrap revenue by 18 percent, most likely leading to job losses; would separate EU prices from international scrap trading prices; and would create a major dispute with Turkey, Genet said. He urged scrap recyclers and EAFs to work together for their common interests.



Blake Kelley

Despite these economic threats, **Blake Kelley** of Sims Group Global Trade Corp. (New York) and **Tom Bird** of Van Dalen UK (Sheffield, England) were

somewhat more optimistic in their economic and market reports. Overall economic conditions were looking better in late October



Tom Bird

than they had in recent months, Kelley said, even though the International Monetary Fund (Washington, D.C.) recently cut its estimate of 2013 global growth to 2.9 percent and 2014 growth to 3.6 percent, pending U.S. budget decisions. World steel production is up 2.7 percent, year to date, compared with 2012, to an annualized rate of 1.58 billion mt, according to the World Steel Association (Brussels), he said. Its projections based on the first nine months of the year are for 70 million mt more steel production and 14 million mt more purchased scrap consumption in 2013 than in 2012. World steel consumption

will reach 1.48 billion mt in 2013 and 1.5 billion mt in 2014, worldsteel says, he added. Even so, competition for steel sales is severe, Kelley said, and "excess capacity will continue to limit margins for steelmakers, miners, and scrap processors."

In the United States, prices were holding steady in October at roughly \$400 to \$420 for prime grades, \$350 to \$355 for shredded, and \$340 to \$350 for heavy melting steel. Expectations were for prices to increase "significantly" in November, especially for prime grades, Kelley said.

After strengthening in July and August by about €15 a mt, European steel scrap prices were down that same amount in October, continuing a pattern of small peaks and troughs that started about 18 months ago, Bird said. Even though European mills are suffering from overcapacity and finished steel demand that's down about 8 percent over the past year, scrap processors face fierce competition for raw materials, with some reporting volumes down 50 percent. Things were looking better in late October, Bird said, with improved prices for both scrap and finished steel, low inventories and tighter supply across the region, strong continued demand from the eastern Mediterranean, and more activity and interest in the containerized scrap market.

Turkey's Yayan painted a somewhat less optimistic picture for Europe, pointing out that its share of world steel production and consumption had not rebounded after the 2008 recession, with its production shrinking from roughly 15 percent to 11 percent of the market in 2012. Its consumption has shrunk 25 percent from 2008 and is expected to grow less than 1 percent this year. Thus, Europe has become a net exporter of steel.

Yayan spoke further about trends in worldwide and Turkish steel production. Worldwide steel production capacity is growing more quickly than

demand, he said, with the surplus expected to reach 592 million mt this year, he said. Only 33 percent of world capacity—and 34 percent of steel production—is in EAFs. He pointed out that Turkey is second only to Iran in the proportion of steel made in EAFs, 74 percent compared with 85 percent. Of the European countries among the world's top 15 steel producers, Italy makes the largest proportion of its steel in EAFs (66 percent), followed by France (39 percent) and Germany (32 percent). In the United States, 59 percent of steel is made in EAFs.

Sixty-four percent of the scrap consumed in Turkey's EAFs is imported, he said, though that proportion has been shrinking since it peaked at 76 percent in 2010. The European Union is Turkey's top supplier of steel scrap, providing 42 percent of its imports in the first eight months of

2013. The United States is the single largest exporting country, providing 28 percent of Turkey's imported steel scrap in that period.

Turkey's EAFs are using only 70 percent of their scrap consumption capacity, Yayan noted, with steel production this year hurt by the slowdown in scrap exports, excess worldwide steel production capacity, and low demand for steel in its main export markets. Turkey's continued investment in infrastructure and low interest rates are likely to result in the industry's continued growth, however.

Andrey Moiseenko of Urkmet (Doneck, Ukraine) reported that the Russian domestic market was well-balanced and stable in the fall, with scrap collection down 10 to 15 percent compared with last year and little expectation of demand growth this winter. Russia continues to bring its export duties

ENVIRONMENT COUNCIL ADDRESSES ESM, EPR, ELECTRONICS

At the International Environment Council meeting, Joachim Wuttke of Germany's environmental protection agency, the Umweltbundesamt (Dessau-Rosslau, Germany), described the latest work of the Congress of the Parties to the Basel Convention on transboundary movement of hazardous wastes (Châtelaine, Switzerland) to develop a framework for the environmentally sound management of "wastes," which it defines to include scrap. In general, ESM means managing wastes in ways that protect human health and the environment, he said. The framework applies across the entire waste management hierarchy, with defined responsibilities for national governments, waste generators, and waste management facilities. It was unclear what the next steps were for the proposed framework or how implementing ESM might affect the transboundary movement of waste.

In related news, BIR is funding a study it plans to release early this year on ESM at secondary smelters around the world, noted Ross Bartley, the group's environment and technical director. "We often face politicians looking over borders, having a fear about [the environmental management] of a facility in another country," he said, thus the group expects this research will provide a "reality check" about the practices in these politicians' own countries.

Wuttke also described the Congress of the Parties' latest discussion of "e-waste." The group wanted to clarify under what circumstances used electronics intended for reuse are considered waste. Discussion of the proposed changes raised red flags for some attendees, according to ISRI's Eric Harris, when the scope seemed to expand beyond electronic devices to cover anything with electronic circuitry, including an end-of-life vehicle.

Bartley noted other work in which BIR has been involved lately, most notably providing information to policymakers at the Organization for Economic Cooperation and Development (Paris) as it updates its guidelines on extended-producer responsibility based on 28 countries' experiences with that approach. He noted the 2014 OECD forum will focus on EPR. IEC Chairman Olivier François of Galloometal (Menen, Belgium) noted the European Union's Directorate General for Enterprise and Industry recently discussed the feasibility of a landfill ban for recyclable material across the EU.

down according to its World Trade Organization obligations, but it is now considering an ecological tax on exported scrap to compensate for the lost revenue, he said. He expected Russian scrap export volumes to be down 25 to 30 percent for the year.

Looking at the Asian countries, Kelley reported that in China, recent scrap imports had been minimal due to adequate domestic supply. Through August, Chinese ferrous scrap imports were about 3.2 million mt, down nearly 12 percent compared with the January-to-August period in 2012. Steel exports were in excess of 62 million mt through September, with steel production up nearly 2 percent over August, to an annualized rate of 796 million mt. Kelley cautioned, however, that China's pollution concerns might result in "significant corrective efforts" that could affect steel and scrap.

India's weak rupee has put imported steel scrap out of reach for many of its steelmakers, Kelley said, presenting the India report for Zain Nathani from the Nathani Group of Cos. (Mumbai, India). This has left small steelmakers without captive sponge iron or direct-reduced iron mills to reduce their output. Pig iron and steel exporters have benefited from the weak rupee, however, with September's raw steel production up 2.6 percent, to an annualized rate of 79.6 million mt. Nathani echoed Rubach's concerns about EU export regulations, noting the government might restrict the scrapping of EU-registered ships to "EU-approved compliant third-country operations," which would further limit scrap availability.

Elsewhere in Asia, Kelley reported that South Korea has been an active purchaser of domestic and imported scrap, though its August imports were down 10 percent, to 651,000 mt. September raw steel production in South Korea was up 8.8 percent, to an annualized rate of nearly 63 million mt. Taiwan has been buying containerized and bulk cargo steel scrap, with

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domestic rebar and scrap at \$578 and \$385, respectively. Inquiries from Malaysia, Vietnam, Indonesia, and Thailand are leading to expectations of more demand for steel scrap from those countries, but their steelmakers have "sticker shock" and complain they can't afford to pay current prices, Kelley said.

Japanese steel scrap prices fell slightly at the beginning of September, reported **Hisatoshi Kojo** of Metz Corp. (Tokyo), but strong demand from Japanese and Korean mills and other factors brought prices back up to the equivalent of about \$342 to \$347 a mt, FOB, making Japanese scrap seem expensive compared with European, U.S., or Russian scrap. Thus, he expected little export growth, but steady demand from domestic mills, keeping a tight balance between scrap supply and demand.

NO IMPROVEMENT IN NONFERROUS MARKETS

Low volumes and reduced margins are still plaguing the nonferrous markets, reported **Peter Dahmen** of Metallhandels-gesellschaft Schoof & Haslacher (Munich), senior vice president of BIR's Nonferrous Division, although moderate growth in the developed economies and economic stabilization in emerging markets could eventually lead to better scrap market conditions. Dahmen highlighted the problems facing the European aluminum market, as refiners and remelters increasingly compete for the same scrap grades, making it difficult to source material. While the aluminum scrap supply is expected to become even tighter, the importance of the scrap recycling industry will also increase as aluminum consumption rises, he added.

Theft is perhaps the only area of the nonferrous industry that is

currently growing, quipped **Robert Voss** of Voss International (Rickmansworth, England), chairman of BIR's International Trade Council, as he provided an update of theft and fraud issues affecting the industry. He advised BIR members to report any instances of overseas fraud or theft to the International Maritime Bureau (London), as more complete information will help address the problem. Voss also recommended that BIR members check with the IMB when doing business with new overseas partners because it has an extensive database of illegal shipments.

In his overview of world nonferrous



scrap markets, **Sidney Lazarus** of Non-Ferrous Metal Works (Durban, South Africa) listed the many challenges the industry is facing: decreased scrap generation, more competition for supply, and lower profit margins. In South Africa, the Metal Recyclers Association of South Africa (Craighall, South Africa) filed a court challenge to a proposed directive that would force scrap sellers to offer domestic consumers the opportunity to purchase scrap at a 20-percent discount to the international price. MRA lost the case, he said, and the directive has been enacted.

In India, the manufacturing sector is struggling, and nonferrous scrap demand has been sluggish, although the country is still "an attractive market destination" for aluminum and zinc scrap, Lazarus said. In Europe, several scrap metal traders have filed for bankruptcy, but the outlook is improving as consumers remain short on material and scrap prices are high. The U.S. economy is improving, but scrap availability is low, he said, and the prices now being paid for scrap are "sometimes higher than the intrinsic value." While it is still difficult to do business in Russia and the introduction of a consumption tax in Japan is a

concern, it's not all bad news, Lazarus said, because Chinese import demand is rising as consumers there are starting to restock.

Guest speaker **Martin Abbott**, former



CEO of the London Metal Exchange (London), expressed his appreciation for the scrap industry, saying the sector has the greatest concentration of

Martin Abbott sophisticated users of forward and futures contracts. Abbott stressed that in order for derivatives markets to exist, the industry must recognize that a problem needs to be solved, and derivatives must have contractual integrity and homogeneous products. As an example, he noted that while there are many types of scrap, scrap industry members can use copper contracts to hedge the copper content of scrap. The world "doesn't need scrap contracts," Abbott said, because the liquidity of primary metal contracts can better fulfill scrap hedging needs. He added that LME prices reflect what someone is actually prepared to pay as well as what is going on in the world. For those frustrated with LME prices, he suggested they tell Federal Reserve Chairman Ben Bernanke to "stop blowing bubbles." In recognition of his support of the secondary metals industry, BIR presented Abbott with a Certificate of Merit.

Guest speaker **Alexey Alipchenko** of Trimet Group (Moscow) spoke about



aluminum recycling in Russia and other Commonwealth of Independent States countries, which include Ukraine, Kazakhstan, and Belarus. Russia will recycle

Alexey Alipchenko 15 percent less aluminum scrap in 2013 than in 2012 due to "global economic difficulties," he said, while its aluminum scrap exports will be unchanged from the previous year, at no more than 280,000 mt.

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Alipchenko described various challenges facing CIS countries. In Russia, business leaders listed corruption, administrative barriers, and the lack of financing and qualified staff as ongoing obstacles at a recent World Economic Forum meeting in Moscow, he said. In Kazakhstan, the secondary industry is "practically not working," he added, while conditions in Ukraine are more depressed and the export licensing system is more difficult than in Russia.

Russia's entry into the WTO is resulting in step-by-step reductions in its export taxes on aluminum scrap, he said, which should decline from the current 40-percent level to 10 percent in 2016. He warned, however, that Russia could pursue other ways to limit scrap exports, including a potential ecological tax.

STAINLESS STEEL PICTURE UNCERTAIN

Saying the stainless steel business is moving through "a period of uncertainty," Mark Sellier of



Mark Sellier

OneSteel Recycling Hong Kong (Hong Kong), interim chairman of the Stainless Steel & Special Alloys Committee, presented market reports from past stainless chairs Barry Hunter of Hunter Alloys (Boonton, N.J.) and Sandro Giuliani of Giuliani Metalli- Cronimet Group (Milan) as well as Ildar Neverov of Steelway Co. (Moscow). Hunter reported the United States was moving toward a relatively tight stainless supply market through November, with manufacturing levels generating less prompt scrap. Mill

scrap prices continue to reflect high nickel discounts, he said, helping U.S. stainless mills compete with Chinese mills using what had been less expensive nickel pig iron. They will lose this price advantage, however, if they cannot procure prompt scrap. Recyclers have few export options for the material, he added, due to the "lack of any offshore interest" in U.S. stainless scrap.

Calling the European economy "fraught with problems," Sellier noted European stainless production has fallen, but not dramatically so. Stainless scrap prices also have fallen in relation to LME nickel prices, and a new balance between supply and demand at a lower volume has been found. This has helped margins in Italy, Giuliani reported, but the biggest

issue for that country is uncertainty surrounding the sale of and future plans for the Acciai Speciali Terni mill in Terni, Italy. Russia is lowering its export duties for the first time in 14 years per its WTO obligations, Neverov reported, but domestic demand for stainless scrap is high enough that there is "no rush to export."

Guest speaker **Heinz Pariser** of Heinz H. Pariser Alloy Metals & Steel Market



Heinz Pariser Research (Xanten, Germany) gave an extensive overview of stainless steel and stainless and alloy scrap. The market for stainless scrap has grown nearly 8 percent a year since 1960, Pariser said, but the stainless steel market has changed

dramatically since 2000, with China now meeting about half the world's stainless needs, taking market share from Europe, Japan, and the United States. Despite growth in stainless demand, only 10 percent of publicly listed companies that produce the alloy have made a profit in the past five years, he said. That's despite industry consolidation that has reduced the number of stainless companies in Europe from 21 to four.

The U.S. stainless market has exhibited "very healthy" demand over the past four years, he said, in contrast with Germany, where demand is falling, and Japan, where demand is level. Chinese demand, on the other hand, has grown substantially. Stainless production outside of China and India is likely to be down 1.5 percent

in 2013, while Chinese production will be up 14 percent and Indian production up 4 percent. He projected 2.7-percent growth in production this year outside of China and India, 10-percent growth in China, and 5-percent growth in India. The Chinese are "overdoing it," Pariser said, with plans to reach 30 million mt of melting capacity by 2015. This will only exacerbate an overcapacity problem that has been growing for about a decade, he added.

The external scrap availability picture outside of China and India will improve slightly this year, with 3.3 percent more scrap coming on the market, Pariser predicted. Noting the large volumes available in China, where nickel pig iron is the preferred infeed material, he warned that it "could be a major disaster for the scrap industry."

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For the stainless scrap trade picture, Pariser said imports were down worldwide from 2012 to 2013, and exports were down everywhere but Japan. He questioned the data on scrap imports into India, noting a difference of hundreds of thousands of metric tons between what suppliers say they're shipping to India and what the government says it's importing, which he attributed to "misclassification."

Nickel is the main determinant of stainless scrap price, Pariser said, and the driver of scrap availability. For 304 grade stainless scrap, for example, he calculated that about 64 percent of its price was based on its nickel, 23 percent on its chrome, and 13 percent on its ferrous content. As the nickel content of stainless has fallen, so has the price of stainless scrap, he said. The

nickel value of stainless has closely tracked the LME nickel cash price for most of the past decade, but the scrap price began to fall relative to LME nickel in 2011. "Never previously have we had such a large discount for the nickel in scrap," he said. In roughly the same time period, the chrome in scrap has consistently sold for a 20-percent discount from the South African producer price for charge chrome.

Even though Europe's stainless scrap price has fallen to where it's very close to the nickel pig iron price, the consumption of externally sourced stainless scrap fell slightly in the EU last year, primarily due to closures of mills in Germany, Pariser said. External stainless scrap consumption in the United States was up about 5 percent from 2012 to 2013. China's

consumption of this material was up 10 percent in that period, and he estimates it will be up nearly 19 percent this year, even though its use of external scrap has fallen precipitously in the past decade. Its 200 and 300 series stainless consisted of 52 percent external scrap and no NPI in 2003; in 2013 it's only 11 percent external scrap and 57 percent NPI, he said.

Overall, Pariser said, global stainless scrap availability is growing, estimating it will nearly double, reaching about 16 million mt, in 2025—or nearly 20 million mt if a greater proportion of material is recycled. The global scrap reserve of stainless products in use was about 149 million mt in 2012 and will be about 264 million mt in 2025. He cautioned attendees to watch China's stainless consumption,

however, which has risen from about 1 million mt in 2000 to 10 million mt in 2010. Eventually, the country will recycle between 6 million and 8 million mt of stainless scrap annually, he said, and its stainless scrap reserve could grow from about 20 million mt in 2012 to 164 million mt in 2030. Even projecting a low recycling ratio, China is building up a "scrap bubble" in the next five to 10 years, he said, as external and internal stainless scrap supplies grow while demand is dropping due to its nickel pig iron production and use.

QUALITY ISSUES HOLD BACK PAPER

Quality controls and other regulatory barriers are now the "game-changer" among the elements that drive the international scrap paper trade, said

Ranjit Baxi of J&H Sales International (London), BIR's treasurer. Excessive requests for documentation, as well as physical inspections at both departure and destination ports, are discouraging exports, he said, calling them "a form of protectionism." He warned that European recovered fiber that does not get exported is likely to end up in a landfill.

Though the markets are "coping very well" with China's Green Fence initiative, Baxi said, India and Indonesia are imposing similar quality controls. As in China, India's laws and specifications have been on the books since 2006 or 2007 but only now are being enforced. Many of the specs are more stringent than those in China or the West, he added, with 50 or 60 of them specifying zero outthrows

or prohibitives are allowed. "If India starts enforcing [them], we have to understand how we can meet their requirements," he said.

Looking at recovered paper exports to China in the January-to-June period, U.S. exports were up nearly 30 percent from 2009 to 2013, but European exports were down nearly 12 percent, Baxi said. He questioned whether Europe's results were due to low collections, high domestic consumption, Green Fence, or some other factor. Regardless, European recyclers need to improve their quality to increase their exports to China, he said.

China has been behind much of the growth in recovered paper demand since 1992, noted consultant **Bill Moore** of Moore & Associates (Atlanta). Since 2000, its net imports have grown to

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Bill Moore

nearly 30 million tons. North America is the only region whose net exports have grown since 2000, as other regions have leveled off, Moore said.

Exports have helped compensate for dramatic changes in North American paper production since 2002, Moore said. Newsprint production will be down 57 percent from 2002 to 2016, according to his estimates, with printing and writing paper production down as well. Containerboard and tissue production will continue to grow. Correspondingly, Moore expects North American demand for old newspaper and old magazines to fall 39 percent from 2002 to 2016, with total North American recovered paper demand down about 19 percent. Old corrugated container demand will remain fairly stable, with new containerboard mills or newsprint mill conversions offsetting reductions in capacity at other mills, he said. Though North American mixed paper demand will be down only 12 percent from 2002 to 2016, the grade is "so dirty with nonpaper contaminants" that few North American mills that could use it 20 years ago can use it now, he said, later adding that mixed paper quality has improved over the past two years.

North American recovered paper exports have grown from 24 percent of collections in 1990 to 42 percent in 2012, even though collections seem to have leveled off since 2005. In 2012, 71 percent of U.S. recovered paper exports went to China, with Mexico, India, South Korea, and Canada each taking small portions of the remainder, and India being the only growth market, Moore said. In the first six months of 2013, U.S. recovered paper export volumes and export prices were both down a little less than 5 percent compared with that period in 2012, he said.

Merja Helander of Lassila & Tikanoja (Helsinki) presented a report from the European Recovered Paper Association (Brussels), which she serves as president. At the time of the Warsaw conference, ERPA had a proposal in front of the European Parliament that would have declared when recovered paper was no longer waste, most notably once it was sorted into commodity streams. (The proposal, which



Merja Helander

faced unexpectedly strong opposition from European paper mills, failed to pass in December.) Helander also reported that the European paper recycling rate reached 71.7 percent in 2012. The volume collected that year was 58 million mt, but paper consumption was down 7 percent from 2007, she said. ERPA also is focused on recovered paper quality, she added, with a working group addressing how the material can be tested for moisture and impurities. A report from that group is scheduled for the spring 2014 BIR meeting in Miami Beach, Fla.

"Chaos in terminology" makes it difficult to get a grasp of the global



Ilpo Ervasti

paper recycling market, declared **Ilpo Ervasti**, an industry consultant and professor at Aalto University (Helsinki). As an example, he pointed out that waste paper, recovered paper, recycled fiber, and recycled paper can all mean the same thing or different things. A literature review found 794 different terms used in the industry, he said, along with six different paper classification systems used by countries or regions, not to mention those used by individual companies. He called for a single, uniform, global terminology that would ease comparisons across countries and regions and over time.

The European market reports reflected generally lower collection

volumes, which were attributed to the still-weak economy in many countries, which depressed print advertising, and the continuing slide in paper media consumption. Northern Europe has seen "strong demand for most grades at relatively stable price levels," reported **Lars-Gunnar Almryd** of IL Recycling (Solna, Sweden). Eastern Europe also had stable prices, with Turkish exports down due to increased domestic demand and Czech exports, primarily destined for Germany, trending upward due to a mill closure, according to Helander. Western European mills are "operating at decent capacity utilization levels" with prices in a "relatively narrow price band," and exports to Asia are "reasonably constant" despite the Green Fence initiative, said **Thomas Braun** of German recycling association Bundesverband Sekundärrohstoffe und Entsorgung (Bonn, Germany). Meanwhile, in Southern Europe, lower consumption has left Italian mills in a tight financial situation, and Spain's fiber exports were down 20 percent in the first half of the year, according to **Dominique Maguin** of La Compagnie des Matières Premières (Paris). At the same time, greater mill production for the export market will affect Spain's domestic recovery in the future, he added.

PLASTICS AFTER GREEN FENCE

China's Green Fence initiative has "led to widespread confusion and indecisiveness" among plastics recyclers and traders, according to Plastics Committee Chairman **Surendra Borad** of Gemini Corp. (Antwerp, Belgium), because the developed world has "mountains" of lower-quality plastic scrap that, lacking an export destination, is creating storage and logistics problems. European exports of scrap plastic to China were down more than 16 percent in the first half of 2013



Surendra Borad

compared with the first half of 2012, Borad said. Some of this material has flowed to other countries, primarily in Southeast Asia, but overall exports of scrap plastics from the European Union to non-EU countries were down more than 14 percent by volume in this period, he said. U.S. exports to China were down 7 percent.

While not dismissing the short-term difficulty Green Fence is causing plastics traders, Borad called it a "blessing in disguise" that, in the long run, would benefit plastics processors and traders, the Chinese recycling industry, consumers of reprocessed plastics, and the environment. The new emphasis on quality will lead to more sorting and reprocessing in exporting countries, which will be good news for equipment manufacturers. The higher-quality material that results might interest plastics consumers in the United States and Europe, Borad said, but neither has the capacity to recycle all its own scrap plastics. Transportation costs also favor exporting this material from Europe, he said, noting it costs half as much to ship material from Europe to China than from one European port to another.

Peter Daalder of Daly Plastics (Zutphen, Netherlands) and **Gregory Cardot** of Veolia Propreté France Recycling (Saint-Denis, France) concurred with Borad's perspective on Green Fence. It and related initiatives have led to "improved plastic qualities exported to Asia this year," Cardot said, with low- and medium-quality material either sold in other Southeast Asian countries or staying in Europe for the plastic-to-fuel market or where "technical solutions are about to emerge." Daalder said (via a report Borad delivered) that Green Fence and other developments in China were making the market look "more and more professional, and deals are made with more 'sense and sensibility' rather than ... 'let's see what happens.'"

Borad identified two other trends

affecting the scrap plastics industry. The first is Europe's shift in focus from the environment to the economy. Continued economic stagnation and high unemployment have caused some European leaders to rethink their environmental goals, most notably in Germany, where its transition to green energy has given the country the continent's highest electricity prices, he said. The second trend is the shale gas revolution in the United States, which is shifting petrochemical production capacity there from Europe. The result is likely to be more exports of petrochemicals from the United States to Europe, especially if a current 3- to 6-percent duty on the material is lifted, and substantial growth in consumption of reprocessed plastics within Europe, Borad said. Cardot voiced concern about U.S. shale gas disrupting oil prices and having a "significant impact" on virgin plastic prices.

In the country reports, **Larry Schipper** of International Alloys (Mendham, N.J.) characterized the U.S. market as fairly consistent over the past year, with low-grade plastics the most difficult to sell and better grades finding what's nearly "a seller's market." In the report, which Borad delivered, he described increased competition between foreign and domestic consumers for certain grades, with new markets in Vietnam, Thailand, and Malaysia taking in some grades that previously went to China. Polycarbonate/acrylonitrile butadiene styrene, for example, has rebounded from a 30-percent drop in value it experienced earlier in the year, even though China shows almost no interest in that grade. Schipper noted steady demand for polyethylene terephthalate, polypropylene, and low-density polyethylene.

India's plastic import market, which primarily purchases LDPE and linear LDPE film scrap, has seen lower volumes and lower prices recently

after three months of growth, Borad said. One new government policy might be a factor in this downturn: India now requires importers to re-export 20 percent of their processed plastic scrap. That proportion will increase by 20 percentage points each year until they are exporting 100 percent of their processed imported plastic scrap. India only allows about 30 companies to import plastics, and these companies are not prepared to undertake these re-exports, Borad said.

Reporting on the Chinese market, Cardot said prices were up since the spring BIR meeting, with increases ranging from €40 a mt for PP to €150 a mt for LDPE, with PET prices the exception. PET bottle prices had fallen \$40 a mt in October, he said.

Guest speaker **Szymon Piotr Dziak Czekan** of Kalman Plastic (Warsaw) explained how 2013 had been a banner year for Polish plastics recyclers. A regulatory change now allows them to freely trade plastic scrap with other European Union countries, he



Szymon Czekan said, and the Green Fence initiative made Poland a destination for material that could no longer find a home in Asia. Recyclers in Poland are processing low-grade plastics and selling them to the country's estimated 2,000 to 4,000 plastic manufacturing companies, he said. **Pawel Polonecki** of BYS (Warsaw), told attendees about his company's automated sorting facility, which can process 150,000 mt a year of waste and recyclables from the Warsaw area, producing scrap, compost, and refuse-derived fuel. The



Pawel Polonecki

company's output is 40 percent scrap and 30 percent RDF, with the remainder getting landfilled, he said. A new law that gives local governments control over waste and

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recycling contracts is likely to increase the material collected, he added.

THE FUTURE FOR RECOVERED TIRES

With Europe's strong recovery of end-of-life tires, the markets for tire material were on the mind of Tire Committee Chairman **Barend ten Bruggencate** of Dutch tire industry association VACO (Leiden, Netherlands). Looking at 2012 data, he noted that 10 percent of Europe's collected tires get exported; 9 percent go to retreading; 39 percent are recycled into new products; and 37 percent are used for energy recovery. To move beyond the existing markets for granulate, which are primarily artificial turf infill and rubberized asphalt road surfaces, researchers will need to make advances in devulcanization, ten

Bruggencate said. Once that barrier is crossed, he estimated 40 percent of recycled tire materials could be used in new tires. Before that, however, the industry will need to establish end-of-waste criteria and overcome potential restrictions imposed as part of REACH, the EU regulation on chemical substances, or restrictions on polycyclic aromatic hydrocarbons.

Kees van Oostenrijk of RecyBEM



Van Oostenrijk

(The Hague) spoke further about moving tire retreadings and granulated tire rubber through the end-of-waste process. To be declared a product instead of a waste, he explained, the material must have a market or demand; its use must not

have an adverse impact on the environment or human health; it must be fit for use without further processing; and standards for the product and its trading must exist and the product must comply with those standards. Granulated material has proven it has markets and is safe for use, and a technical committee is working on standards and tests, he said. Retreadings have markets and must meet quality standards in those markets, and they have less impact on the



Grzegorz Karnicki

environment than new tires, he said. The end-of-waste process could benefit both retreading and granulate markets, he added.

Grzegorz Karnicki with Centrum Utylizacji

Opon (Warsaw), a producers' responsibility organization for Poland's tires,



and Hans van Mameren of Ragn-Sells, a recycling firm in Sollentuna, Sweden, spoke about the tire recovery and reuse markets in their countries. Poland

Hans van Mameren implemented an extended-producer-responsibility system for tires in 2002 and since 2007 has been recovering 75 percent of tires discarded, Karnicki said, which was more than 180,000 mt in 2012. Energy recovery is the destination of 54 percent of the tires collected, with five of Poland's 15 cement kilns accepting whole tires. The remainder are used for powders and granulates (29 percent), other products made from tire rubber (13 percent), and retreads (4 percent). Once an initiative for building artificial turf fields and other products from granulated rubber ended in 2012, the country was left with too many tire processing facilities, he said, and the overproduction of granulate is putting pressure on prices.

Sweden has been collecting 100 percent of its end-of-life tires since 2000, Van Mameren said. Although the ratio of material recovery to energy recovery is 45 to 55 currently, he expects that to become 55 percent material recovery with the opening of a new tire granulation plant that will be able to accept 30,000 mt of tires annually. The most promising future market for recycled tire rubber in Sweden is rubberized asphalt, he said, but the country's bitumen industry is fighting against that use. In addition to completing the end-of-waste process, tire recyclers must build closer ties to the tire manufacturing industry, he said. ■

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