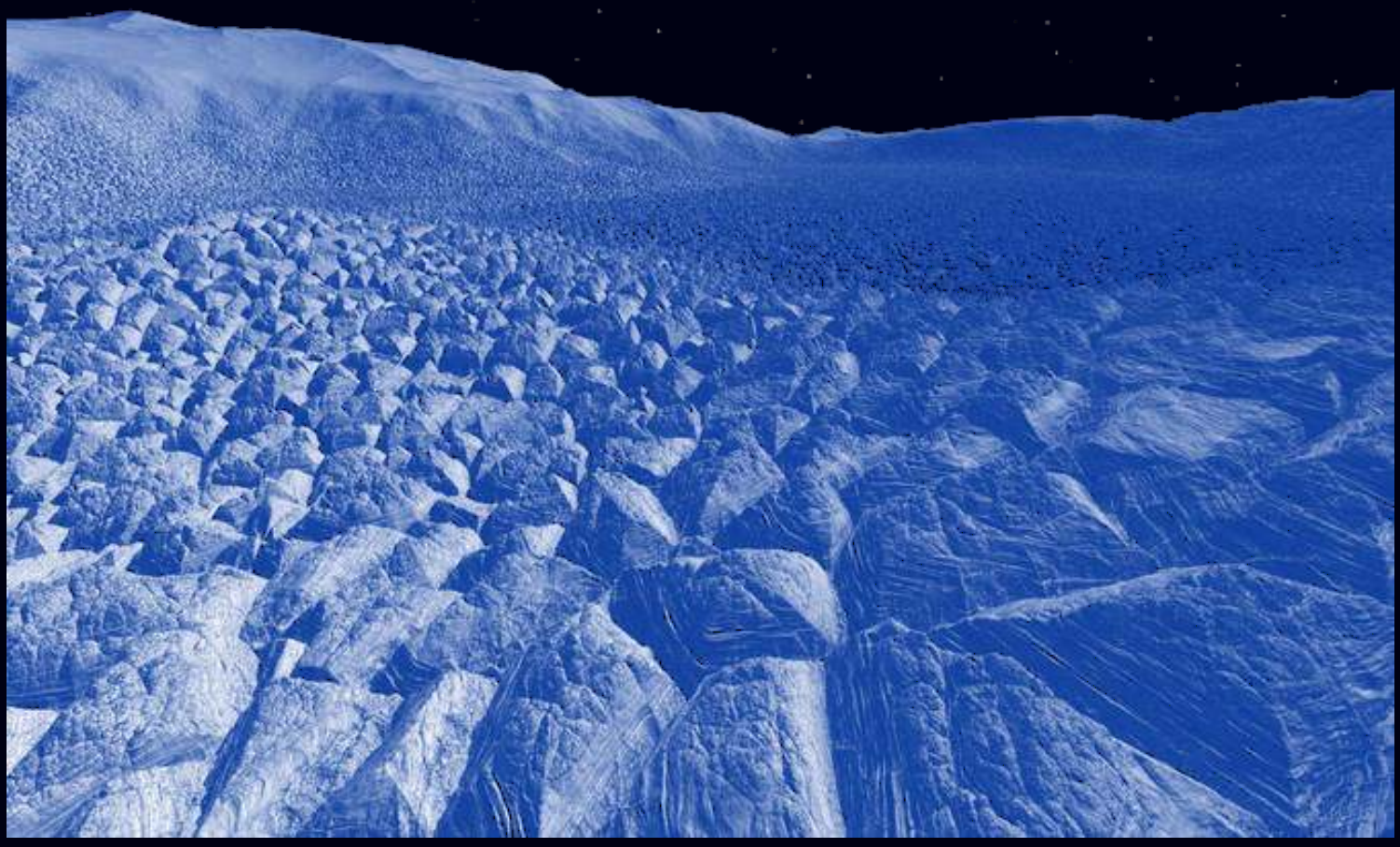
The Crucible

Mining Perspectives—on Earth and Beyond

Proposed European Conflict Mineral Regulations



The magazine of the Minor Metals Trade Association

2nd Edition 2014/April www.mmta.co.uk

INSIDE THIS ISSUE

CONFERENCE SPONSORS

MMTA'S INTERNATIONAL MINOR METALS CONFERENCE, 27th-29th APRIL 2014, VICTORIA PARK PLAZA, LONDON

Time is running out if you have not yet registered for THE minor metals conference of 2014.

28th APRIL—**Guest speaker: Mark Miodownik, University College London, University of London, United Kingdom;**

Keynote presentation — **"China: Great expectations?" by Dennis Unkovic, Meyer, Unkovic & Scott LLP, USA;**

Session 1: Automotive and aerospace:

"Sourcing critical metals and raw materials for the automotive industry: Latest developments for electric, hybrid and low carbon emission vehicles", **by Philippe Schultz, Renault SA, France;**

"A changing world with different rules – the re-introduction of lightweight magnesium alloys onto civil aircraft", **by Graham Wardlow, Magnesium Elektron, United Kingdom;**

"Recovery of rhenium in Poland", **by Kamil Kozub, KGHM Group, Poland;**

NEW "Is Dodd-Frank working for the people of Rwanda and for the tantalite-tungsten industry? A ministerial view", **by Evode Imena, Minister of State for Mining, Ministry of Natural Resources, Government of the Republic of Rwanda, Rwanda;**

Session 2: Recycling and secondary:

"Latest developments in minor and electronics metals recycling", **by Christina Meskers, Umicore Precious Metals Recycling, Belgium;**

"Welcome to the ever-evolving world of super-alloys recycling", **by Duncan Birchley, Select Alloys & Materials Ltd, United Kingdom;**

16:00 MMTA Annual General Meeting

19:00-21:00 Tate Britain Reception – join us for canapés & drinks at Gallery 9 at the newly reopened Tate Britain kindly sponsored by Lipmann Walton & Co Ltd

28th April

Session 3: Markets in steel, specialty and stainless:

Keynote presentation – "Global trends for specialty, tool and stainless steels", **by Marcus Moll, SMR, Austria;**

"Vanadium market overview: Rebar, redox – reasons to be optimistic?, **by Jack Bedder, Roskill Information Services Ltd., United Kingdom;**

Session 4: Refractory metals and applications:

"Hafnium and zirconium: Growing demand in alloys?" **by Cyrille Rontard, AREVA – Fuel Zirconium Sales, France;**

"From gritty to nitty-gritty: Mining, investing in its future", **by Andrew Hinkly, Anglo American Platinum, United Kingdom;**

"New ways of formulating with flame retardants: A story about antimony tri-oxide and alternatives", **by Dirk Rimaux, Campine, Belgium;**

"Fanya's role in the global minor metals industry", **by Scarlett Zhang, The Fanya Metal Exchange, China;**

MESSAGE FROM THE EXECUTIVE TEAM—FRAUD ALERT

The MMTA has been informed that a number of trading companies have recently had their email systems hacked. According to information received from MMTA members more than one case has occurred where emails have been intercepted and invoices have been amended to incorporate incorrect account details, which has led to funds destined for sellers as part of a transaction being diverted to a third party account. Members are advised to pay close attention to any unexpected changes in account details on an invoice and should contact suppliers by phone to confirm any changes, rather than by email.

Members are also reminded to pay particular attention if pre-paying money to companies they do not know, even if their websites and communications appear legitimate.

VISIT TO ROLLS-ROYCE, DERBY—30th APRIL 2014

ONLY A FEW PLACES STILL REMAINING



To round off the MMTA conference, Rolls-Royce has kindly offered to host the MMTA at its heritage centres in Derby.

Take the coach with us from London Victoria for the tours and lunch, returning to London by early evening.

The first tour is an overview of the Rolls-Royce story from its beginnings to present day product range.

We will then be taken by coach for a three-course lunch with wine.

After lunch, there will be a tour of the Light Alloy Foundry, where we will see the largest collection of aero engines in the country, ranging from World War 1 era piston engines, the famous Merlin, right up to modern day jet engines. The collection also includes examples across Rolls-Royce's product range including marine and industrial applications. There are a small number of vintage cars, some of which hark back to the early days of Rolls-Royce and the start of the motor car era. There are also examples of engines and motor cars from distinguished names such as Armstrong Siddeley and Napier, whose companies became part of the Rolls-Royce group in their latter years.

The MMTA Member/Conference Delegate cost for this event including lunch and transport will be £70 (+ vat).

Places are strictly limited for this event. To book, click **HERE.**

HOW SERIOUSLY SHOULD WE TAKE CURRENT CONCERNS OVER RESOURCE DEPLETION?

Euromines is the recognised representative of the European metals and minerals mining industry. The association's main objective is to promote the industry and to maintain its relations with European institutions at all levels. Euromines provides services to its members with regard to EU policy and serves as a network for cooperation and for the exchange of information throughout the sector within Europe. The association also fosters contacts with the mining community throughout the world. Euromines represents large and small companies and subsidiaries in Europe and in other parts of the world which provide jobs to more than 350,000 people. Through the activities and operations of these members, more than 42 different metals and minerals are produced. For some metals and minerals, Europe is the world's leading producer.

Euromines members have articulated their "Views on Indicators of Resource Efficiency". Trade-offs always exist between different environmental objectives and the environmental, social and economic imperatives of sustainable development, and resource efficiency should ideally yield optimum solutions to those. The European mineral supply industries fully support the premise that life cycle management approaches are required to describe and monitor resource efficiency. However, some serious methodological issues remain to be resolved before existing Life Cycle Assessment (LCA) indicators can be used to reliably measure the environmental impacts of resource use. Notably, an improved uniform model should be developed that adequately reflects the full range of resource depletion potentials, so that efforts are not diverted away from more acute pressures on the environment.

If applied incorrectly, "resource depletion", "material footprint" and "material consumption" concepts divert attention away from the environmental impacts of dispersive use and release by over-estimating the environmental impact of resource extraction (e.g., mining of phosphate rock). Recent EU research has revealed that current assessments of "Abiotic [non-living] Resource Depletion" vary by several orders of magnitude, and that there is no consensus amongst LCA practitioners on the issue of concern. In practice, some LCAs have prioritised "conservation" of abundant mineral resources over more pressing environmental concerns. Insufficiently informed interpretation of these studies (e.g., by a member of the public confronted with a single number representing "total environmental impact"), is likely to lead to counter-productive diversion of effort.

As several geologists and resource economists have shown, "depletion" of mineral resources is not considered likely enough even to be systematically included as an impact category in Life Cycle Impact Assessment (LCIA). "Scarcity" of these raw-materials is an economic issue arising from a lack of efficient forward -looking use of capital and is not indicative of any environmental impact.

Society's current concerns over 'resource depletion' are partly fuelled by high prices due to the relatively recent emergence of the Brazilian, Russian, Indian and Chinese economies. However, prior to that, commodity prices were in continual long-term decline. Price peaks from the 20th Century corresponded to wars and revolutions – and did not result from depletion of the natural resources.

Otherwise, many commentators point to declining ore-grades as evidence of an environmental issue that should be of societal concern. However, the ore-grades referred to in those studies are invariably "run-of-mine" ore-grades, i.e. the grade of the ore that is sent by the mine for further processing. Run-of-mine ore-grades are not indicative of the state or condition of the natural resource; they are indicative of the improved efficiency of the mineral supply industry. Run-of-mine ore-grades have declined over time due to a complex set of influencing factors including the inherent competitive advantage of large established mines and - most especially - technological advances that have enabled the profitable extraction of metals from lower-grade ores despite long-term price erosion. The volume of a mineral reserve increases as the cut-off grade of extraction technologies decreases, so as technology enables profitable processing of lower-grade ores, the volume of the available mineral reserves increases. Production of many metals, e.g., copper, has increased dramatically over the same period that run-of-mine ore-grades have declined. Still, the net result of resource extraction and resource discovery over a given period of time is almost always an *increase* in available natural resource. Meanwhile, the range of copper content in discovered porphyry copper deposits, for example, has remained remarkably similar since 1845, with no discernable decrease or increase over the last 150 years.

Those concerned about depletion of abiotic resources have claimed that Domestic Material Consumption increases inexorably with Gross Domestic Product, the resources are non-renewable, and therefore such economic growth is unsustainable. Such assertions have contrasted strongly with data typically presented by geologists and minerals economists. New studies present an opportunity to analyse these differences and attempt resolution. A recent report by the Sustainable Europe Research Institute (SERI) analyses the Resource Productivity trends of all countries worldwide between 1980 and 2008. It confirms that each economy takes a slightly different path according to its industrial base, inherent strengths and weaknesses and historical context and that, as a whole, the world has been progressively de-coupling from resource consumption for at least the last 40 years. The European Environment Agency recently confirmed that "Resource Efficiency in Europe is generally improving and the environmental pressures related to resource use are declining" [European Environment Agency, 2013: http://goo.gl/Lpdq0L].

Rather than being truly depleted, the majority of mineral resources are used to continuously serve valuable purposes in the built environment. The Resource Depletion impact category should therefore only be included in LCIAs of products that are consumed (typically those derived from biotic resources such as fish, crops, some forest products, livestock, foodstuffs, oil, gas, peat and coal) for which there may be imminent risk of environmental impacts if stocks cannot be regenerated. It is suggested that efforts to improve resource depletion indicators and methods should continue, in order to make them fit for purpose; however they should only be applied where sustainable yield is threatened. At the very least, the full range of depletion potentials (from extremely low to high enough for concern) needs to be captured; and reporting needs to transparently illustrate which datasets are used for which materials.

Johannes Drielsma, **Euromines**

NEW RESOURCES IN THE MEMBERS' AREA OF THE MMTA WEBSITE

There is a new category in 'Minor Metals Applications & Overviews': By-Products

NEW Study of by-products of copper, lead, zinc, nickel 2012, Oakdene Hollins

NEW Study of by-products of copper, lead, zinc, nickel, P. Willis, Oakdene Hollins, 2013

NEW Cu, Ni, Pb, Zn Australian Government 2013

NEW Cobalt as a by-product of nickel and copper production 2013

NEW US perspective on by-products and critical materials 2013

NEW USGS By-product commodities used for the production of photovoltaic cells 2010

Other new documents and papers:

NEW Indium Recovery and Recycling of LCD panels

NEW Minamata Conference Text 2014 (Mercury)

NEW The life cycle of mobile phones – a UL White Paper

NEW TTIP: The opportunities for small and medium sized enterprises

NEW Critical Metals in the Path towards the Decarbonisation of the EU Energy Sector 2013

To log into the Members' Area, go to www.mmta.co.uk/members-login where you can reset your p/w if you have forgotten it. Your user name is your email address.

MMTA AGM

The MMTA's AGM 2014 will take place during the conference at **16.00 on Monday 28th April 2014**.

Venue: Victoria Park Plaza Hotel, London, UK

All Members are welcome to attend.

The Notice of AGM and Agenda have been circulated to all Members and are available in the Members' Area of the website.

The AGM offers an ideal opportunity to hear about the ongoing work and projects of the MMTA. Members are encouraged to attend.

Minor Metals Trade Association
Suite 53
3 Whitehall Court
London
SW1A 2EL
Telephone: +44 (0)207 833 0237

Fax: +44 (0)207 839 1386
Email: executive@mmta.co.uk

ASTEROID MINING—THE FINAL FRONTIER?

Manned mission to Mars? Why not look to the heavens for our mineral resources?

At first glance, it seems like pure science-fiction (the spaceship in the 1979 film Alien was carrying iron ore mined from an asteroid), but there are in fact two well-financed and serious companies focused on asteroid mining already in business: Planetary Resources and Deep Space Industries, which have the commercial mining of asteroids and the development of space industry in their sights. This may be one sci-fi fantasy for which the technology has caught up.

To add more weight to this growing trend towards space industry, NASA is currently holding a call for projects to capture an asteroid and drag it closer to earth for studying. They are also holding a competition with cash prizes for those who can come up with improved algorithms to identify asteroids - #AsteroidHunters for those who are mathematically inclined.

Planetary Resources announced in 2012 its plan to mine asteroids for their mineral resources. This company also has the not inconsiderable benefit of having some billionaire investors behind it, including Sir Richard Branson and Google's Larry Page. Apart from an asteroid's mineral wealth, the company would also like to create a space 'fuel station' by using the water found in asteroids to make rocket fuel, using electricity from solar panels to split water into oxygen and hydrogen. The advantages of this lie in the fact that fuel from Earth would not need to be transported into space and the re-fuelling needs of satellites and spacecraft would be taken care of. This is a first key step to creating a space infrastructure which could eventually lead to more cost effective space travel and exploration. Cost effectiveness is, of course, the key factor. The technology may have caught up, but making such mining ventures financially viable is a different matter. An upcoming NASA mission set to launch in 2016 (OSIRIS-REx) plans to return 60g of material from an asteroid to Earth; unfortunately, however, this will cost around $1bn to recover.

Deep Space Industries' vision is to begin prospecting for asteroids suitable for mining by 2015 and by 2016 return asteroid samples to Earth. Then in 2023 plans for mining will begin.

Are these projects realistic? Is there enough mineral wealth to justify the expenses of space missions?

Sensational headlines like that below ignore the complications of such ambitious projects.

Single asteroid worth £60 trillion if it was mined – as much as world earns in a year

Source: Mail Online 7 April 2014

A study published in 2013 may serve to dampen optimism surrounding some of these objectives. The Harvard astrophysicist, Dr Martin Elvis, argues that there are only around 10 nearby asteroids that may be suitable for commercial mining. Asteroids that could be mined for water to make fuel were also fed into the equation, with Dr Elvis coming to a total of around 18 viable ones. This figure is strongly disputed by Planetary Resources, which estimates that there are over 1500 asteroids that are as easy to reach as the moon.

Dr Elvis has developed an equation to estimate the number of asteroids in the Solar System that could be exploited in a cost-effective way. He used the number of M-type asteroids, (iron-nickel type with the most platinum group metals) and the parameter of delta-v, which is the change in velocity needed to send the mining equipment to the asteroid and then return with the mined ore.

Also contributing to Dr Elvis's low estimate is the fluctuating prices of ores meaning that profitability on individual missions is highly variable. Very small asteroids less than 100m were also discounted as possible resources, as there would not be enough material to cover the cost of the mission.

However, Planetary Resources says that they are not just planning on targeting M-type asteroids, but also C-type (carbonaceous) which, they assert, are the most platinum rich. They also have a more ambitious delta-v limit than used in Dr Elvis' calculation. This all means that the work by Dr Elvis could be off by a factor of 100 or, more optimistically, 1,000.

"We have only discovered 1% of the asteroids in the Solar System - and we are discovering them at a larger and larger rate. We discover two or three asteroids a day. If we get from 1% to 10%, then the 650,000 asteroids we have discovered jumps to 6.5 million."

It seems that although there may be potential to mine space, there first needs to be very significant capital investment. Infrastructure, including refining and transportation, are also key challenges to the development of a viable space industry. It also seems that there is much debate in the science world on what is realistic or not. It will be interesting to see what the next few years bring for asteroid mining.

Tamara Alliot, **MMTA**

NASA Asteroid Facts

Asteroid: A relatively small, inactive, rocky body orbiting the Sun.

Comet: A relatively small object whose ices can vaporize in sunlight forming an atmosphere of dust and gas and sometimes a tail.

Meteoroid: A small particle from a comet or asteroid orbiting the Sun.

Meteor Shower: The light phenomena which results when a meteoroid enters the Earth's atmosphere and vaporizes; a shooting star.

Meteorite: A meteoroid that survives its passage through the Earth's atmosphere and lands upon the Earth's surface.

About once a year, an automobile-sized asteroid hits Earth's atmosphere, creates an impressive fireball, and burns up before reaching the surface.

Asteroids that populate the main asteroid belt between Mars and Jupiter, can be as big as 940 km across.

Meteorites yield significant amounts of precious metals like platinum, rhodium, iridium, rhenium, osmium, ruthenium, palladium, germanium and gold.

DIARY DATES

MMTA's International Minor Metals Conference
27th -29th April 2014
Victoria Park Plaza, London

Rolls-Royce Visit
30th April 2014
London/Derby

Legal Aspects of Contracting Course
4th June 2014
MMTA Office, London

Technology & Applications of Minor Metals Course
5th June 2014
MMTA Office, London

Drinks Reception
9th June 2014
New York
Sponsored by Metal Pages

Technology & Applications of Minor Metals Course
10th June 2014
New York

41st Anniversary Dinner
21st October 2014
Intercontinental Hotel, London

New York Dinner
4th December, 2014
Circus, New York

MMTA Christmas Lunch
17th December 2014
Ironmongers' Hall, London

MMTA SPONSORSHIP FOR 2014

As always, there are a range of sponsorship opportunities available for MMTA events throughout the year. We can tailor sponsorship packages to meet specific requirements and budgets. Just contact the Executive Team to discuss, or speak to us at the conference.

CHECK OUT THE MMTA WEBSITE

We like to keep the MMTA website looking fresh, so we have made some changes to the way it looks. We are also now able to display Member companies better in the Members' Directory, as well as displaying Members' logos on the homepage. We'll be changing these throughout the year—the first logos on the homepage are our new Members from 2013.

A lot of work has been done improving the Resource Centre in the Members' Area, too. We hope you like the changes.

mmta
Minor Metals trade association

PROPOSED EUROPEAN CONFLICT MINERAL REGULATIONS—HOW DIFFERENT ARE THEY FROM THE US DODD-FRANK ACT FOR METAL TRADERS?

The global guidance on responsible supply chains for conflict minerals was developed via inter-governmental consultation at the OECD in May 2011, building on the Kimberley process adopted by the diamond industry to address widespread concerns over human rights abuses.

After lengthy consultation, the European Commission published its proposed regulations on conflict minerals in early March 2014. The expectation was that a similar and potentially broader approach to the US Dodd-Frank Act would be adopted. However, the European Commission has proposed a very different approach which is likely to have significantly lower costs for the economy as a whole.

The most striking feature of the EU approach is removal of the burden of supply chain due diligence from manufacturers. In the US, publicly-traded manufacturers and retailers of products containing tin, tantalum and tungsten, their ores and gold, are required to publish reports on their supply chain due diligence processes and their effectiveness in ensuring that only conflict free sources are utilised. This is a costly process requiring suppliers stretching down the supply chain through to smelters to confirm that they have appropriate systems in place.

"a manufacturer only needs to buy from a 'responsible importer' to be able to declare themselves a conflict free manufacturer".

The EU proposal is somewhat simpler. In effect, as material enters the European Union the 'importer' who clears customs can choose to be a 'responsible importer'. A 'responsible importer' must have in place supply chain policies consistent with the OECD guidance, which allow them to trace the metals to smelters and obtain the smelters' third party audit certificate demonstrating its compliance with the OECD guidance. This effectively ring fences the European Union, so that a manufacturer only needs to buy from a 'responsible importer' to be able to declare themselves a conflict free manufacturer.

What options exist for metal traders?

Metal traders selling metals or minerals sourced from outside the EU could supply these resources duty unpaid. This would pass the requirements for 'responsible importer' status onto their customer. However, many of these customers do not have the necessary systems in place to fulfil this duty and are unlikely to accept this, making this an unrealistic option.

A metal trader could choose to only acquire products already in free circulation within the EU. This however would seem to be a limited strategy that is unlikely to maximise profitability.

The trader could choose to continue importing into the EU but not as a 'responsible importer'. The risk here is that customers may not wish to acquire materials that are not certified as 'conflict free'. In US, major companies such as Apple and Intel have used early compliance with the legislation for public relation purposes. It is possible that a two tier market could develop over time.

The other option is of course for traders to instigate systems to allow them

to operate as 'responsible importers'. Commercially this is likely to be the preferred option over time, as many traders will be trading globally, including locations such as the US where non-compliance might preclude entry into the supply chain of major businesses.

One of the significant issues with conflict metals is the control of upstream risk from source to smelter. Once ore is smelted into metal it is no longer possible to determine its components' origin. The draft legislation introduces a central register of responsible smelters and refiners that have third party audits available. This is an improvement on the US system where each customer has to make its own enquiry of the smelter.

Both the US and EU legislation apply to the same substances - tin, tantalum, tungsten and gold - as the OECD guidance and presumably will expand to other substances if that guidance is extended. The US guidance has restricted its application to the Democratic Republic of Congo and surrounding countries in line with UN Security Council Resolutions. The EU proposed legislation follows the OECD guidance and applies to countries that are termed "conflict affected" or "high risk areas". The OECD defines the areas covered as:

> *Conflict-affected and high-risk areas are identified by the presence of armed conflict, widespread violence or other risks of harm to people. Armed conflict may take a variety of forms, such as a conflict of international or non-international character, which may involve two or more states, or may consist of wars of liberation, or insurgencies, civil wars, etc. High-risk areas may include areas of political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence. Such areas are often characterised by widespread human rights abuses and violations of national or international law.*

This definition is arguably too subjective and requires a level of knowledge of geopolitics far beyond many businesses; there are unfortunately many areas to which some of these circumstances apply and perhaps the final legislation should incorporate a mechanism for regions to also be centrally identified.

The proposed EU legislation does not incorporate any transition arrangements. A smelter might be on the approved list in 2015, but this does not mean that it had appropriate systems in place in 2013. Consequently it would not be possible to certify existing metal outside the EU on the day of implementation as 'conflict free' under the criteria of the regulation. The OECD guidance did incorporate the concept of 'grandfathered' stock as part of its Gold Supplement, but did not recognise this for other materials. It is not clear that this provision exists even for gold under the latest proposal.

The OECD guidance excludes metals that can reasonably be assumed to be recycled, whilst no reference is made to processes to be applied to tin, tantalum and tungsten, it does suggest procedures for recycled gold that might act as a basis of other materials. The proposed EU guidance does not incorporate these provisions.

Whilst the proposals seem realistic they still require approval by the European Parliament which has previously adopted a more hardline stance. Some national legislation will be required to implement the proposals, which may impose further local burdens. The proposal also incorporates a three-year review of its effectiveness, which could see amendment to the voluntary status if uptake is poor.

Ian Weekes, **Crowe Clark Whitehill**

Crowe Horwath International through its local offices is a leading provider of services to International traders and is currently advising companies on compliance with conflict mineral legislation.

Crowe Clark Whitehill is the UK member of Crowe Horwath International. Ian Weekes is a UK based partner at national tax, audit and advisory firm Crowe Clark Whitehill with extensive experience of working with international trading and warehousing businesses. Ian can be contacted at Ian.Weekes@crowecw.co.uk.

BOWLING REVIEW

Metal Pages were recently hosts to many MMTA Members for their Bowling Extravaganza. The MMTA General Manager was part of the winning team, although could not with any honesty claim to have been a deciding factor in the win, top scorers on the winning team being Nigel Tunna of Metal Pages and Mark Beddard of Johnson Matthey. The losing finalists' star and top MMTA scorer until the final seconds of the match, was the sole MMTA warehouse representative, Patrick Schols of Euro-Rijn International BV.

In an imaginative and innovative display of skill and control, the teams battled late into the evening, with Nigel's team securing a narrow win.

Independent observers of the game may have struggled to follow the team structure and transparency of scoring, but most importantly, the MMTA office is looking after the winners' cup – until the return match.

TECHNOLOGY & APPLICATIONS OF MINOR METALS COURSE

5th June 2014, London

&

10th June 2014, New York

The MMTA is offering a one-day training course on the technology and applications of minor metals.

The focus will be on steels and other alloy families in which minor metals play a key role.

The morning session will offer an overview of technologies and industrial practices for:

- Metal extraction and primary processing
- Secondary processing – casting, forging, extrusion, powder metallurgy, heat treatment
- Product manufacture – machining, welding, surface treatments and coatings
- Fundamental principles of alloy metallurgy

Technical rationale behind the use of minor metals and their inclusion in common alloys

The afternoon session will provide an overview of markets and applications for minor metals in key industry sectors.

For more information on either course, please contact executive@mmta.co.uk

CRITICAL RAW MATERIALS UPDATE—CRM EXHIBITION & BREAKFAST MEETING

An updated EU critical raw materials (CRM) report is due for imminent release (at the time of writing, the revised publication is scheduled for May 2014). The recent CRM Exhibition held at the European Parliament on the 19th February, offered a valuable insight into the methodology behind the revised list, as well as highlighting the huge importance of CRMs, the majority of which are minor metals, to both the European economy and to our modern way of life.

MEP Prof Panayatov, Roy Walton, Tamara Alliot & Maria Cox at the CRM Exhibition Reception

The Exhibition was hosted by Bulgarian MEP Prof. Vladko Panayotov, Vice-President of the Inter-parliamentary Raw Materials Group to the EU Parliament, with his well-attended welcome address followed by a fascinating perspective on recycling from Egbert Lox, Senior Vice President Governmental Affairs at Umicore. The primary aim of this 3-day event was to emphasise the importance of CRMs for innovation, competitiveness and economic growth in the European Union. The agenda included an extremely well-attended breakfast meeting, hosted by the MMTA, a round-table session and presentations from Oakdene Hollins and Roskill Information Services, both of whom were involved in writing the report.

Nicholas Morley, Director at Oakdene Hollins, explained that there is no absolute definition of 'criticality', with a material's criticality being context dependent – balancing the strategic importance of its applications with its supply chain risks. When defining a critical material, the combination of the results of both the World Governance Index (governmental risk) and the Environmental Performance Index (environmental risk) were used in the final methodology.

On the economic importance axis they looked at the end-use applications, including what percentage of each metal went into which EU industrial (mega) sector. On the supply risk axis the focus was on a supply risk due to poor governance – substitutability, recycling rate, country concentration and governance (potential political unrest or export restrictions) – and/or a risk due to low environmental standards – substitutability, recycling rate, country concentration and environmental standards, Morley explained.

Robert Baylis, Managing Director at Roskill, further underlined that the main focus of the Critical Raw Materials methodology was on supply risk and economic importance, not on physical scarcity or on oversupply. Additional factors for consideration were geology (the case of niobium), by -products (the case of gallium), commercial and value-chain (the case of cobalt) and price/cost (the case of magnesium).

Mattia Pelligrini, European Commission, speaking at the MMTA hosted Breakfast Meeting

Where the 2010 report mainly focused on the governmental risks, the 2013 report also identified the need to consider more factors when evaluating criticality: ore grades and land use competition in the exploration phase, mining governance and corporate concentration in the mining phase, mined and refined production and by-product dynamics in the refining phase and price volatility and environmental regulation in the end-use phase. It should be borne in mind that in 10 years, the world situation could

look very different, as energy and labour costs will only rise. What is considered a critical material now, could change over time. The main driver for this change is economics, with prices of raw materials having varied significantly over the past decade. If production is increased or diversified, a material could cease to be 'critical', whilst still remaining economically important. (Many Thanks to Heleen Vollers of BeST for these summaries)

The Breakfast Meeting hosted in the European Parliament by the MMTA, was attended by industry professionals, representatives from the European Parliament and Commission, representatives from producer countries, including South-Africa, Namibia and Zimbabwe, as well as associations and other stakeholders. Prof. Dr. Paul Rübig, Austrian MEP, took the floor and highlighted the need for increased competitiveness in European industry and in particular Small and Medium-Sized Enterprises, which is of particular concern to many MMTA Members. He was followed by keynote speaker, Mattia Pellegrini, Head of Unit Raw Materials, Metals, Minerals and Forest-based industries at DG Enterprise & Industry, European Commission. Mr Pellegrini talked about the work of the European Commission in creating the first CRM report and the subsequent successes that this list has had. He reported that the list focused political attention on the subject, mapped the key issues at stake and notably identified those raw materials that were critical for the EU economy. The report was also the orientation for different departments in the Commission responsible for industries such as electronics, defence or medical. He emphasised that the importance of CRMs should be further integrated into European policies.

Maria Cox speaking at the CRM Breakfast Meeting

Maria Cox, MMTA General Manager, also spoke at the breakfast meeting, to increase the awareness of the role of the MMTA, as well as the important function of its Membership in the supply, trade and uses of CRMs, and to raise the profile of minor metals in general. She emphasized that some Members express concern when these materials, recognised as being economically important, and often with few or no substitutes, are also under threat from EU legislation. Some feel that due to the impact of REACH Authorisation, the consequence is that the EU is simply crossing elements off the periodic table and limiting the scope of future European technological innovation, one of Europe's key strengths. This is the equivalent of tying the hands of EU business behind its back when competing with other parts of the world, for whom the entire periodic table is still available.

The next CRM list should be out in May and is expected to include 20 materials, an increase from the 14 identified on the 2010 list. Associations and companies with materials on the list are still uncertain as to the positive or negative impact of being designated a CRM. Does the CRM list allow these materials to be considered favourably from a regulatory or legislative perspective? Or does it simply create a target list for EU-funded substitution programs?

Let us know your thoughts.

TRADE CREDIT AND MARINE INSURANCE SURVEY.

We received a large number of responses to our recent survey. Thank you to those who took part. Here are a couple of key results:

Almost 50% purchase Trade Credit Insurance, 83% of which are on a comprehensive (whole turnover) basis.

Over 77% hold their own Cargo Insurance policy, with a split between those heavily using their own policy and those preferring to purchase from the supplier on terms including insurance, such as CIF.

LEGAL ASPECTS OF CONTRACTING COURSE

4th June 2014, London

Delivered by Penningtons Manches LLP

This not-to-be-missed half-day seminar is an overview of contracts for traders and other interested parties, useful as both introduction and refresher, and will cover the following:

- What is a contract?
- When is it made?
- Does it incorporate your standard terms?
- Why are standard terms useful?
- Variations
- What happens if one side doesn't perform?

To register your interest, please contact:

executive@mmta.co.uk

MMTA SUSTAINABILITY WORKING GROUP

The MMTA is pleased to announce the launch its new Sustainable Development Working Group, which will support Members who are new to sustainability, and assist those wishing to improve or develop their programmes, as well as showcasing Members' own sustainability work.

The Working Group also aims to produce reports on the sustainable uses of minor metals, helping to promote the valuable contribution of minor metals to our modern way of life.

Why is the MMTA ideally placed to undertake this work?

- With increased consumer pressure on 'sustainability' of products, there is increased scrutiny of supply chains.
- The distinctive Membership make-up of the MMTA—with its unique geographical spread, range of metals, mix of SMEs and larger organisations, and from mine to consumer,
- Our access to data—the MMTA liaises with other metals associations and groups, takes part in discussion forums and has access to the input of a range of Member companies.

Why not join the MMTA Sustainable Development Working Group?

All Members with an interest in Sustainable Development are welcome to participate. Email Tamara to register your interest or for more information.

LETTER FROM NORTH AMERICA

Dear Members

Spring it may already officially be, but apart from a few green shoots in Central Park and a couple of desultory snowdrops on the Highline, there's little sign of its arrival here in New York. We were even supposed to get more snow last night. Thank goodness it never materialized.

However, for many Ukrainians in Crimea, it looks, unfortunately, to be the start of a new, second, winter. And, on this front, I should be remiss if I did not refer you to the excellent "briefing paper" put out recently by fellow MMTA member Roskill Information Services. Entitled "*Economic sanctions on Russia: The potential impact on minor metals and industrials minerals markets*", it looks at "*the potential impact that sanctions could have on **cobalt**, **nickel**, **niobium**, **titanium**, **tungsten** and **vanadium** supply chains as well as those of **potash** and **refractory magnesia**.*" I found it most useful.

Having read it, I thought I'd better also have a look at the relevant U.S. Geological Survey (USGS) Mineral Commodity Summaries for 2014 relating to these materials and see just how much of them it reckons the country imports from Russia. According to the USGS, in its "Import Sources (2009-12)", of these Russia accounted for: Cobalt (contained in metal, oxide, and salts) – 11%; Nickel – 16%; Vanadium pentoxide – 43%; and, Potash – 10%. So one wonders, perhaps, just how those purchasers of all that V_2O_5 are preparing for any further eventualities.

On an entirely different front, I noted the other week, with interest, that, according to Reuters, whilst JPMorgan is apparently excluding its metal brokerage business, including its London Metal Exchange (LME) ring dealing team, from the $3.5 billion sale of its commodity business to Mercuria, it *is* believed to be including Henry Bath, its metals warehousing operation. Is anybody prepared to offer me odds on any other metals warehouse owning-banks following suit?

I recently had a quick glance to see if there is anything interesting happening on the T-TIP (Transatlantic Trade & Investment Partnership) front, especially anything relating to minor metals. Based on what's coming out from the office of the U.S. Trade Representative, there doesn't appear to be that much. The EU still seems intent on there being a separate chapter dealing with both energy and raw materials. And whilst I am sure its chief negotiator, Ignacio Garcia Bercero, does a fine job, it appears that he's not had much success on this point with the U.S. – as can be learned from his rather diplomatic statement (given in his last post-negotiations press conference in March) that although "*the discussions have been positive and have been very constructive. We have not yet reached the point in which we can say that both of us have identified the chapter…*" Hmm! That does not sound very encouraging to me. But one never knows.

Finally, as you know, I always like to keep my eyes open for any interesting scientific advances in the use of minor metals here in the U.S. Back on March 3rd, at the American Physical Society's March Meeting, Professor Ivan K Schuller of the University of California San Diego, and his colleagues announced that they had developed a new magnetic material, using bilayers of vanadium oxide (V_2O_3) and nickel that is particularly responsive to heat. As the APS said in its press hand out for the meeting: "*Schuller and his colleagues speculate that the material could serve as the basis for a whole new class of data storage, sensors and energy storage devices*". Now, that could be really interesting!

April has some great things to look forward to, not least our annual conference in London! See you there. Until then, as always, my best wishes from New York

Tom Butcher
Hard Assets Investor

ALL AT SEA—THE RISKS TO MARINE CARGO

From the perspective of a company wanting to transport goods by sea, the marine environment differs considerably from the land environment. Moving cargo by sea means exposure to the risks of a maritime adventure, but as 90% of all cargo moves by sea, these risks are manageable and it must be remembered that this is the cheapest and most environmentally-friendly way to move massive volumes of cargo from one side of the world to the other.

However, the sea poses unique challenges, and both security and insurance are key considerations in mitigating these challenges. Maria Cox has been speaking to Peter Cook, CEO of the Security Association for the Maritime Industry (SAMI), and Erwin Slagter of AON Commodity Commodity Trade in the Netherlands, and a member of the MMTA's Insurance Task Force.

There are many millions of containers in the system throughout the global supply chain and the size of container ships has grown incredibly quickly to meet the demand; ten years ago the largest container ship could carry 9,000 twenty-foot containers, whereas we now have ships that can carry more than 18,000.

Both Peter Cook and Erwin Slagter identify piracy as a major maritime concern, and while Somali piracy has focused on hijacking vessels to ransom crews, elsewhere cargoes are the target. Off West Africa vessels are being attacked, hijacked and their cargoes stolen. It should be noted, however, that container ships do move faster (planning speed 23kts) and have a higher freeboard than other types of ships, making them less vulnerable to boarding by pirates whilst transiting high risk areas.

In areas of SE Asia, it is pilferage of cargoes that is a bigger problem – both from ships and also within ports. Container ships may be less vulnerable to piracy but they are still vulnerable to other forms of crime – and container theft from ports is a major problem which, Peter Cook states, has seen huge investment in state-of-the-art security systems within the world's major ports. Security notwithstanding, according to Erwin Slagter, theft of cargo from containers is a near-daily occurrence, and sometimes the seals of the container remain intact. There are many ways to steal cargo from containers, including known cases where valuable cargoes were replaced by rocks with the same weight, which was only discovered when the receiver was unloading the container. Such situations could even disturb relationships with suppliers, however an experienced insurance broker would be able to co-ordinate and solve the matter in a satisfactory way.

The natural environment can be another huge challenge to cargoes. Perhaps the most recent illustration of what can happen was shown when over 500 containers were washed overboard from the vessel "Maersk Svendborg" recently. Peter Cook reminds us that the sea is a hugely challenging environment, and not one to be treated lightly. The cargo is exposed to the elements and therefore heat, cold and wetting risk. This is all dependent not only the weather itself, but upon what route the ship will take, as well as where and how well the cargo is stowed on the ship.

A vessel can also sink, have a collision or be damaged by fire, or even explosion. There are so many risks which could lead to loss or damage to a cargo when transporting by sea from A to B, as well as during storage. It is incumbent upon the shipper to understand the threats and potential problems posed.

REPORT FROM THE ICMM ASSOCIATIONS MEETING, LONDON

The MMTA recently attended the Associations meeting of the International Council on Mining & Metals (ICMM) which brings together over 20 mining & metals companies and 34 mining & metals associations. We were able to learn more about ICMM's interactions with the Asia Pacific Economic Cooperation metals and chemicals working groups and how it intends to engage with this important group in the areas of metals specific, including alloy, risk assessment.

The meeting discussed metals messaging to improve the reputation of metals in general – eg the development of 'World Without Metals' marketing materials, because if the value of metals can't be established outside of the industry (ie to the public and to regulators) it's difficult to get traction on regulatory issues that are negatively impacting the sector.

Access to market was one of the key discussions with the effect of downstream regulation and its impact on business upstream.

With the metals industry feeling under threat from the impact of a variety of hazard-based regulations in many regions of the world, the need for a harmonised and broad based approach to promote the benefits of metals was discussed, focussing on the importance to the entire value chain.

If there is no market access, there is no reason for production and no reason to dig the hole in the ground.

The MMTA will continue to follow these crucial developments.

ALL AT SEA—THE RISKS TO MARINE CARGO, CONT'D....

This will involve assessing not just the security aspects but the means of transferring risk through insurance, and of limiting potential liabilities and commercial exposure.

Erwin Slagter adds that even when there is no actual loss or damage to the cargo of the trader, it is still possible that the owner of the cargo is liable for costs/expenses or has to contribute to the costs of a General Average.

All Risk insurance provides coverage for loss and/or damage caused by an external cause. Simply said, something must have happened. However there are also situations where the cause of the loss is "unexplained" and/or damage is "inherent to the product".

When cargo is sold on FOB terms, and the trader (as seller) has not been (fully) paid, the seller may consider that they do not have to insure, but they still have a financial interest in the safe arrival of the cargo. Cargo insurance for such a "seller's risk" would be advisable. The financial interest of a trader could further be protected by a credit insurance, which would cover the non-payment of the buyer.

There are many insurance solutions, often tailor-made for trading companies. The brokers who are active Members of the MMTA are specialised in designing tailor-made insurance solutions and provide tailor-made services and support for commodity traders.

Peter Cook – CEO, **Security Association for the Maritime Industry** and Erwin Slagter, **Aon Risk Solutions**

EXPORTING TO CHINA? HOW TO ENSURE COMPLIANCE WITH LOCAL PRODUCT LEGISLATION

China is an important emerging market for many metal producers and traders and since 2010 has been implementing a raft of new and revised chemical legislation, similar to those of Western economies.

Hazardous chemicals are regulated in China through a complex network of regulations, orders and standards, with an overarching law for existing chemicals: the "Regulation on the Safe Management of Hazardous Chemicals", also known as Decree 591. This network of legislations specifies how hazardous chemicals should be identified, specifies the use of labels and safety data sheets to communicate these hazardous properties, details how they should be packaged and transported in China, as well as any entry-exit inspections to which they are subjected.

Finally, production of, as well as import of hazardous chemicals into China requires registration of these products, and special licenses for producers, importers, transporters, and also for owners of warehouses in China. Registration and licensing can only be undertaken by Chinese entities, therefore, by Chinese-based companies or local agents/representatives appointed by foreign suppliers.

Foreign companies experience that compliance with chemical legislation in China is not without challenges: the first challenge consists of finding the relevant, applicable legislations: laws, regulations and standards are in most cases only available on Chinese websites, making them difficult to locate for those who do not understand Chinese.

Once the legal text has been obtained, the next challenge consists of understanding the requirements: legal documents are generally only available in Chinese. Sometimes non-official English translations are made available, however it can be difficult to establish the accuracy of these. Where reliable translations are available, the next hurdle is to understand the use of terminology.

Another challenge consists of maintaining an overview of the different types of hazardous chemicals' lists, determining how they can be linked to each other and understanding their related requirements. These lists are updated on a regular basis, with substances, including metals and metal compounds, being added or removed from the lists. This requires vigilant monitoring to ensure timely compliance with any new requirements.

Many of the Chinese laws on hazardous chemicals are actually national implementations of international model regulations developed by the United Nations (UN). Implementation is, however, not based on a like for like translation, but is achieved through a patchwork of interlinked laws and related standards. For example, the UN Globally Harmonised System on Classification and Labelling is implemented through circa 12 laws and 50 standards.

National legislation can also deviate from the international model regulation by including country-specific requirements e.g. some

products are considered hazardous in China while not in other regions. Chinese compliance procedures also involve a complex network of authorities.

China also has a REACH-like legislation requiring hazard testing and notification. It is, however, focused on new chemicals, i.e. chemicals that are not listed on the Chinese list of existing chemicals, the Inventory of Existing Chemical Substances in China (IECSC). Metals and metal compounds that have been produced and traded for many years and are included in existing chemicals lists in Europe and North America should not, however, be assumed to be Included on the Chinese IECSC list. Not all metal compounds are included in this list, and those that are not will require notification before import into or production in China.

A lack of knowledge of the Chinese language and administrative system can cause uncertainty and make obtaining clarifications and written confirmation challenging for foreign companies. Nevertheless, the consequences of non-compliance include fines, delays in product delivery to customers and, in severe cases, restriction from future import of certain products. Companies based outside of China often rely on local consultants to guide them through the complex Chinese legislation and to overcome the language barrier. However, without a minimum level of internal expertise there is always a risk when relying completely on a 3rd party. A combination of internal expertise and a network of outside experts are needed for effective implementation of the Chinese chemicals legislation and compliance when exporting products to China.

Qiang Fu, **Rio Tinto**

REPORT FROM THE MINVENTORY WORKSHOP, BRUSSELS

Around 50 attendees gathered in Brussels for a workshop on the Minventory portal. The aim of Minventory, a DG Enterprise-commissioned project, is to implement a pan-European database on raw materials' deposits.

It has three main objectives:

- To create a comprehensive directory of information regarding key resources, public and private, are located within the EU28 countries,
- To create online access to this information, and
- To develop an action plan for the harmonisation of European mineral resources' data where this is useful and feasible up to 2020.

During the day, which was the third and final workshop of the project, the group reviewed the portal and discussed the ways that the data for primary, secondary and tertiary mineral resources could be improved over time, working towards the second and third aims of the project. The first phase of the work has been completed and involved surveys of public and private holders of data throughout the EU at national and regional level.

The project is being delivered by a consortium of Geological Surveys from different parts of the EU28, and is being co-ordinated and project managed by Oakdene Hollins in the UK. www.minventory.eu

EXOTECH inc.

For Over 23 Years

STOCKING SUPPLIER OF RECYCLED

PURE AND ALLOY

Tantalum	Molybdenum	Niobium
Tungsten	Nickel	Cobalt
Chromium	Titanium	Indium
Vanadium		Other Exotics

All processing and quality control in house

PRODUCER OF

HIGH PURITY CHROMIUM POWDER

Purity 99.8% to 99.98% • Size -3 to -325 mesh

and

SYNTHETIC TANTALUM CONCENTRATES

SPECIALIZING IN

HIGH PURITY SPUTTER TARGET ALLOYS

RECYCLING UNIQUE TANTALUM REFINERY

Exotech, Inc.
1851 Blount Road
Pompano Beach, FL 33069

Tel: +1 (954) 917 1919
Fax: +1 (954) 917 3033
Exotech@exotech.com

www. Exotech. com