

# The Crucible

**Radical Changes in Mining Practice**

**UK Modern Slavery Act comes into force**



# ADVANCED ALLOY

## SERVICES LIMITED



### We focus on quality

Established over 21 years with an unrivalled reputation for supplying pure metals and high temperature super alloys into the aerospace, oil, medical and associated industries

Accredited **ISO 9001**, **ISO 14001**, **BS OHSAS 18001**



### We buy & sell

Specialists in the supply of

- Mo
- W
- Nb
- Ta
- Hf
- All Nickel / Cobalt based alloys



### Full revert management/processing

- Shot blast
- Size reduction/plasma
- Bar cutting
- Turnings degreased

**Suppliers of High Temp  
Raw Materials & Pure Metals**

Call us on **01909 569930**

Email us at **info@advancedalloys.co.uk**

Website **www.advancedalloys.co.uk**





# IN BRIEF

## Great Lakes countries seek support in “market crisis”

The International Conference on the Great Lakes Region (ICGLR\*) published an open letter on the 20th January addressed to all ICGLR stakeholders, donors and international organisations emphasising their concerns over the impacts of the current market crisis on the 3T (tin, tungsten and tantalum) mineral business in central Africa, and the need for financial support from others besides the upstream industry sector. The ICGLR describes the effort that has been made by their organisation and its member states to implement the Regional Certification Mechanism (RCM) which has already achieved the issuance of ICGLR certificates on traceable exports and thanks the contribution of iTSCi and others to the progress made in the last 5 years.

The letter goes on to highlight funding concerns for traceability and due diligence programmes in the wake of the fall in metal prices, and emphasises that any reversal of progress would lead to 'deterioration of local livelihoods and national revenues' and 'revive illegal exploitation of natural resources' in the region. The ICGLR concludes with a call on downstream industry, donors and all peacemakers to financially support the regional initiative and traceability and due diligence programmes.

\*The ICGLR is the intergovernmental organization for 12 States, including the main countries of iTSCi implementation in DRC, Rwanda and Burundi which was created in order to address political instability and promote sustainable peace. This letter from ICGLR follows a similar call for assistance from upstream industry.

Adapted from 'Tin in the News' from ITRI

## INSIDE THIS ISSUE

|                                 |       |
|---------------------------------|-------|
| In Brief                        | 3     |
| Elementary...                   | 5     |
| New Reports from Metal Bulletin | 6     |
| Radical Changes in Mining       | 7-10  |
| UK Modern Slavery Act           | 12-15 |
| COP 21 & Minor Metals           | 16    |
| Letter from America             | 17    |
| Update from N. America          | 18    |
| Terrorism: How exposed are you? | 19    |

**The MMTA promotes essential elements that add quality, safety and enjoyment to our lives.**

The MMTA is the world's leading minor metals industry organisation.



### Contact Us:

Address: MMTA, Suite 53, 3 Whitehall Court, London, SW1A 2EL, UK

Tel: +44 (0)207 833 0237

Email: [executive@mmta.co.uk](mailto:executive@mmta.co.uk)

**Disclaimer:** The information and data contained in this edition of the Crucible (the Material) has been compiled by the Minor Metals Trade Association (MMTA) from sources believed to be reliable at the time of writing but the MMTA makes no representation or warranty (express or implied) as to the accuracy, timeliness or completeness of the Material. The Material is provided for information purposes only, but is not to be relied upon as authoritative or taken in substitution for the exercise of the reader's own skill and judgment. It should not be relied upon for any specific or general application without first obtaining competent advice. The MMTA, its members, staff and consultants accept no liability whatsoever (however that liability arises) for any direct, indirect or consequential loss arising from any use of the Material.

The Crucible contains links to third party websites and material and information created and maintained by organisations other than the MMTA. These links are provided solely for your convenience. The MMTA does not guarantee the accuracy, relevance, timeliness, or completeness of any third party information or material accessed by means of a link within the Crucible. The inclusion of a link is not intended to reflect the importance of the third party materials accessed through it, nor is it intended to endorse any views expressed, accuracy of material, products or services offered or other information made available via the link.

## CORRECTION



## APOLOGIES FOR THE TYPO IN THE PRINTED EDITION OF JANUARY'S CRUCIBLE

Lewis Winters, Account Executive Purity Certification Services @ EAG Labs, Inc.

Vast skills and abilities that span more than seventeen years in technical sales focusing on the establishment of long-term customer relationships, advanced technology product knowledge, and superior client services. Interpersonal and articulate, able to pursue initiatives that capitalize on strengths and opportunities, and a proven track record of effectively building and leading sales teams to attain/exceed imposed goals and objectives. Lewis resides in Austin, Texas and he supports the Evans Analytical Group (EAG Labs, Inc.) Materials Characterization Division's Purity Survey Services.

High-purity metals and alloys find applications in automobiles, semiconductor devices, aerospace materials, sputter targets, evaporation sources, magnetic media, and many other products. Accurate and precise determination of their chemical composition ensures that end users have the right materials for their specific applications. EAG can verify the purity of these materials and certify the results under ISO/IEC 17025 Accreditation.

# THE MMTA'S INTERNATIONAL MINOR METALS CONFERENCE 2016

TAKING PLACE AT NH GRAND HOTEL KRASNAPOLSKY,  
AMSTERDAM, THE NETHERLANDS, 17-19 APRIL 2016

Organised by Metal Events Ltd

We will once again be hosting a high quality speaker programme with relevant and topical presentations on a wide range of themes. Make sure you are part of the industry's premier event for the minor metals sector attracting over 200 attendees.

## Platinum Sponsor

We are delighted that [C. Steinweg Handelsveem BV](#) is hosting a reception for all delegates on board the Het Wapen van Amsterdam on Monday April 18.



**C. Steinweg  
Group**



Be sure to take advantage of the excellent value Early Bird Rates:

The current fee for MMTA Members is **£895** (plus 21% VAT) for all registrations received by 25 February 2016

The current fee for Non-Members is **£995** (plus 21% VAT) for all registrations received by 25 February 2016

To register or for more information please visit [www.metalevents.com](http://www.metalevents.com) or [www.mmta.co.uk](http://www.mmta.co.uk) alternatively email [sales@metalevents.com](mailto:sales@metalevents.com)

## Draft Programme:

**Keynote presentation** by **John Emsley**, Chemist & Author;

"Current and emerging applications of Se and Te in optoelectronic devices", by **Dan Hewak**, University of Southampton, United Kingdom;

### Session 1: Wonderful world of minor metals: future movers and shakers:

"The lithium supply chain in batteries and battery materials", by **Martin Steinbild**, Senior Manager, Strategic Marketing, **Albemarle**, Germany;

A presentation by **Jim Hickey**, Procurement Manager, **Magnesium Elektron Ltd.**, United Kingdom;

"Hafnium supply: Past, present & future", by **Alister MacDonald**, Consultant, **Alkane Resources Ltd.**, Australia;

"Self-healing in metallo-ceramics and the use of minor metals", by **Professor Sybrand van der Zwatt**, Novel Aerospace Materials Group, Faculty Aerospace Engineering, **TU Delft**, The Netherlands;

### Session 2: Interactive session on supply chain management and REACH implementation:

"Tungsten – conflict free from mine to consumer", by **Steffan Schmidt**, Board Member, **Tungsten Industry – Conflict Mineral Council (TI-CMC)**

"Are you ready to comply with the REACH 2018 registration deadline?" by **Karine van de Velde**, **KV Consulting Services & REACH Orphan Substances Consortium**, Belgium;

### Session 3: Overview for steel and alloys:

"Alloy steel markets outlook", by **Markus Moll**, Managing Director, **SMR**, Austria;

Tantalum and niobium myths", by **David Henderson**, President, **Rittenhouse International Resources LLC**, USA;

### Session 4: The diagnosis for minor metals post Fanya:

"Expectations for bismuth in a post-Fanya world", by **Sebastian Voigt**, **Hunan Jinwang Bismuth Industrial Co Ltd**, China;

"Selenium in infrared technology", by **Funsho Ojobuoboh**, Consultant, **Vital Materials Co Ltd**, USA;

"Recycling and recovery of minor metals from residues", by **Koen t'Hoën**, Managing Director, **M&R Claushuis**, The Netherlands;

"Indium Market: after the Fanya years", by **Brian O'Neill**, Marketing Manager, **AIM – Minor Metals**, USA;

# Elementary...

Four new elements have been added to the periodic table, finally completing the table's seventh row. The elements, discovered by scientists in Japan, Russia and America, are the first to be added to the table since 2011, when elements 114 and 116 were added.

The four were verified on 30th December 2015 by the US-based International Union of Pure and Applied Chemistry (IUPAC), the global organisation that governs chemical nomenclature, terminology and measurement.

IUPAC announced that a Russian-American team of scientists at the Joint Institute for Nuclear Research in Dubna and Lawrence Livermore National Laboratory in California had produced sufficient evidence to claim the discovery of elements 115, 117 and 118.

The body awarded credit for the discovery of element 113, which had also been claimed by the Russians and Americans, to a team of scientists from the Riken institute in Japan.

Researchers at Riken, said they are now planning to look to the uncharted territory of element 119 and beyond.

The elements, which currently bear placeholder names, will be officially named by the teams that discovered them in the coming months. Element 113 will be the first element to be named in Asia.

IUPAC has now initiated the process of formalising names and symbols for these elements temporarily named as ununtrium, (Uut element 113), ununpentium (Uup, element 115), ununseptium (Uus, element 117), and ununoctium (Uuo, element 118)."

The four new elements, all of which are synthetic, were discovered by slamming lighter nuclei into each other and tracking the following decay of the radioactive superheavy elements.

Like other superheavy elements that populate the end of the periodic table, they only exist for fractions of a second before decaying into other elements.

## Naming of the Elements

New elements can be named after a mythological concept, a mineral, a place or country, a property or a scientist. The names have to be unique and maintain "historical and chemical consistency". This means a lot of "-iums".

"They're Latinising the name," explains chemist Andrea Sella of University College London. "The most recent tradition has been to name them after places or after people." The places chosen tend to be where the element was discovered or first manufactured. The Swedish village of Ytterby has managed to get four named after it (ytterbium, yttrium, erbium and terbium).

No-one has yet named an element after themselves but many elements are named in tribute to important scientists. Albert Einstein was given einsteinium. This can also be a way of righting the wrongs of the past. "Lise Meitner was really the chemist who spotted nuclear fission but she was never really recognised for it because she was Jewish and a woman," says Sella. "To be able to give an element a name that reminds us of her is, I think, greatly important."

The naming process isn't quick. The scientists who discovered them will start things off by proposing a name to IUPAC to approve it. There is then a public review period of five months before the IUPAC council gives the final approval. Once it's ready, the name is announced in the scientific journal Pure and Applied Chemistry.

Scientists sometimes get creative. Mythical names have proved popular. Promethium was named after a character from a Greek legend who stole fire from the gods to give to humans and was punished by being chained to rock so an eagle could feed on his

liver for eternity. The name was meant to reflect the fact that synthesising new elements often requires sacrifice.

There is also hidden meaning in the table as in the naming of praseodymium and neodymium. They replaced didymium, wrongly thought to be an element but in fact a mixture of the two.

"The reason I like them is because they're called the green twin and the new

twin," says Sella. "Didymium was named after (the Greek for) twin but in fact it also means testicles."

A physics professor is supporting a campaign calling for a newly discovered element to be named in memory of Motörhead front man Lemmy Kilmister.

Almost 83,000 heavy metal fans have signed a petition calling for one of four new elements to be named "Lemmium" in tribute to the 70-year-old rock star who died on December 28th 2015, two days after learning he had cancer. In order to meet the naming requirements of the IUPAC, a star has already been named Lemmy.

The image shows a standard periodic table of elements. The four new elements, 113, 115, 117, and 118, are highlighted in red and labeled 'New Elements' with arrows pointing to them. Element 113 is located in the 7th period, group 13. Element 115 is in the 7th period, group 15. Element 117 is in the 7th period, group 17. Element 118 is in the 7th period, group 18. The table also shows the lanthanide and actinide series at the bottom.

During a long awaited visit to the Museum Ship, the Cutty Sark in Greenwich, I was pleased to see a small mention of the alloy used to sheath the famous tea clipper's hull.

The Cutty Sark's hull is sheathed in a metal alloy made from copper (60%) and zinc (40%). This is the closest modern approximation to Muntz metal which originally covered the hull below the waterline. Named after George Frederick Muntz who patented the alloy in 1832, the metal stopped barnacles attaching themselves to the ship and facilitated the Cutty Sark's smooth passage through water.



## What lies ahead for the metal markets in 2016? Everything you need to get started...

2015 was a tough year for the global metals industry with the collapse in global commodity prices, strengthening US Dollar and the slowdown in the Chinese economy.

These events have left many in the metals industry worried about what lies ahead.

To help you settle into 2016 successfully, *Metal Bulletin* have put together **a series of 9 very detailed reports** giving you a full picture of the current state of the metals market. The reports cover the big challenges they see facing the industry and the tools you need to stay ahead of the competition, as well as protect and grow your business.

Visit [http://u.metalbulletin.com/2016\\_campaign](http://u.metalbulletin.com/2016_campaign) to download these special reports.

### The Metal Bulletin '2016 survival kit'...

This series compiles some of *Metal Bulletin's* best and most important articles, interviews, commentary and podcasts from the last year plus new content that has been specially put together for the series. The aim being to put everything you need to get started in 2016 into a complete package. These reports include:

- SURVIVAL KIT Report #1: Metal Bulletin's 2015 markets review
- SURVIVAL KIT Report #2: 2016: What Next for Metal?
- SURVIVAL KIT Report #3: China's SRB Revealed - Shedding Light on the State Reserve Bureau
- SURVIVAL KIT Report #4: The rise and stumble of the BRICs
- SURVIVAL KIT Report #5: Aluminium: the irresistible rise of the LME contango - and what next?
- SURVIVAL KIT Report #6: How electronic trading transformed the LME - and how it might again
- SURVIVAL KIT Report #7: Complete aluminium premiums coverage
- SURVIVAL KIT Report #8: Fast Facts - Latin America in focus
- SURVIVAL KIT Report #9: APEX: Analyst Price Expectations 2016 to 2021

### A brief insight...

2015 was all about faltering demand growth, surplus metal, and markets that ground ever lower as a result, which cumulatively took out production and even encouraged some companies to attempt to default on contracts.

Metal Bulletin's view is that this low-price environment is likely to continue into 2016, with production shutdowns, rights issues and the consolidation and the sale and purchase of assets a consequence.

There may be more room on the upside than the downside now. But if 2015 was a tough year, 2016 could yet prove to be its ugly twin.

So how will this affect you and your business, how should you prepare and is there anything you can do to protect and grow your business?

To answer these questions [download Metal Bulletin's free series of 9 special reports](#) titled the Metal Bulletin '2016 Survival Kit'.

For more information, visit Metal Bulletin at [www.metalbulletin.com](http://www.metalbulletin.com).

### MMTA OFFICE MEETING ROOM

### FREE USE FOR MEMBERS

### CENTRAL LONDON LOCATION

- Screen, projector & flipchart
- Free Wi-fi
- Tea, coffee, water provided—other refreshments can be arranged at cost
- Library and PC resources

Contact the [MMTA](#) to book the meeting room.



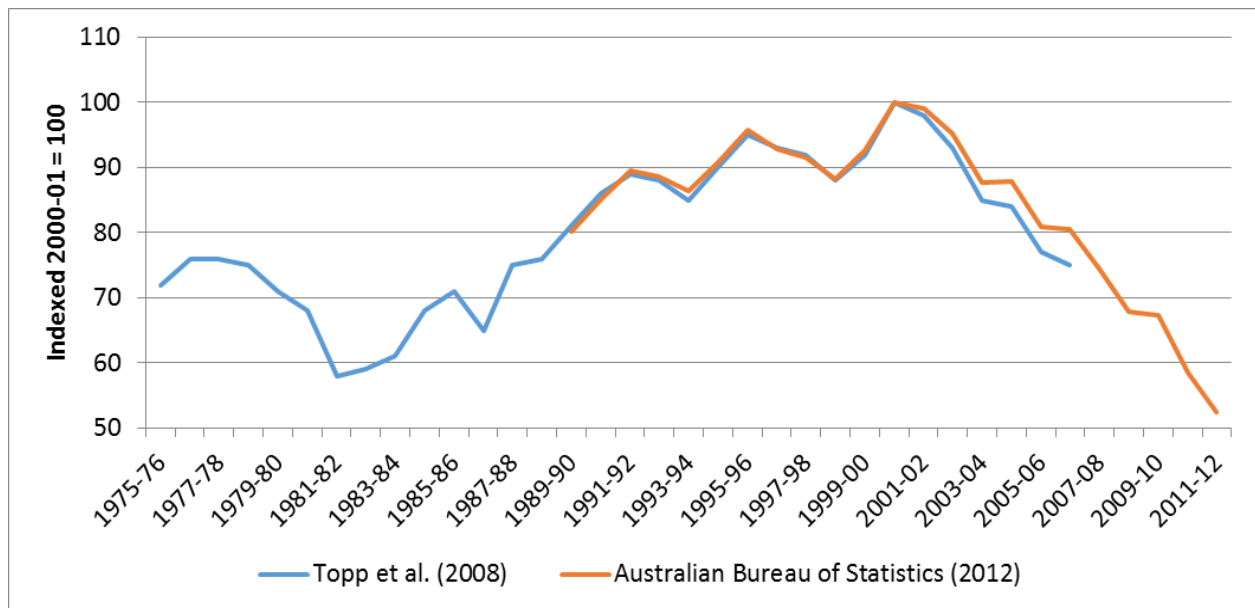


# The Coming Radical Change in Mining Practice

Dr Simon Michaux, Senior Research Officer, GeMME University of Liege presents a personal perspective on the environmental impact of resource consumption.

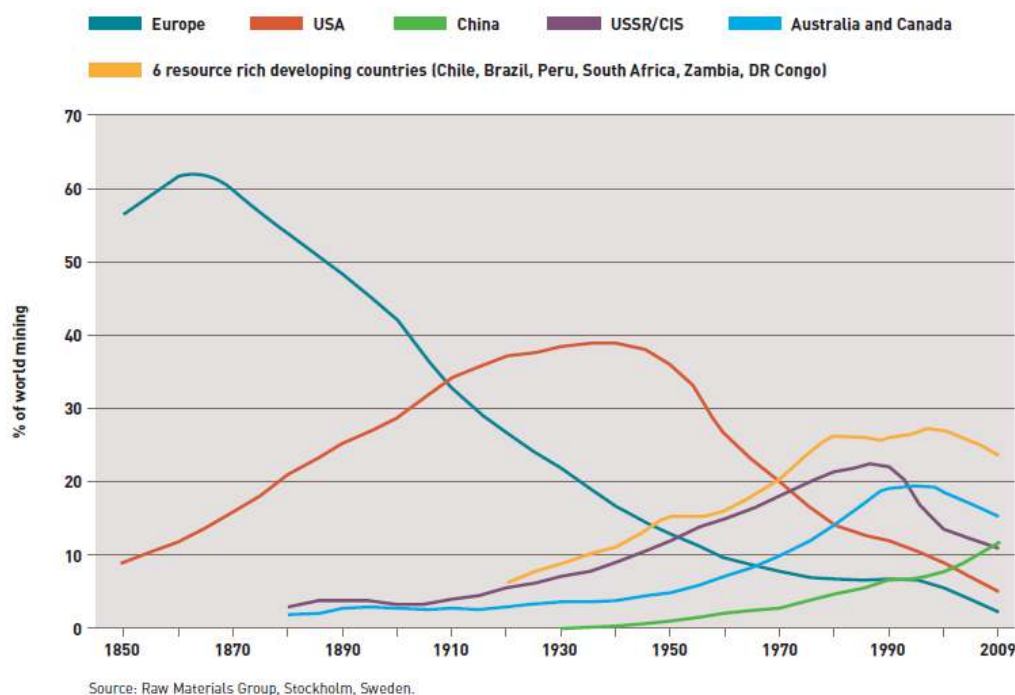
I used to work in the Australian mining industry as a geometallurgist. The previously unprecedented mining boom has clearly moved into a relatively sharp contraction cycle. The mining industry has seen mass layoffs and large operation shutdowns. Mining is becoming economically unviable in the current market. This is not a short term problem. Commodity prices have been steadily decreasing for some time, keeping pace with the economic stagnation that is plaguing every economy around the world at this time. It's also not just mining, it's everything it supports as well.

There is a macro scale pattern unfolding under all of us. It's getting harder to produce the same real physical production targets each year, which was masked by metal price but now there is a different signature visible. This can be shown across the Australian mining industry, where the Productivity Index for mining has fallen by 48%.



Source: Australian Bureau of Statistics 2011, *Experimental Estimates of Industry Multifactor Productivity, 2010-11*, ABS, Cat no: 5625.0.55.002, Canberra

This means it now takes 48% more work done to extract the same unit of metal from the ground in the financial year 2011 -2012 compared to the year 2000-01. This is not just an Australian mining trend, it can also be seen around the world.



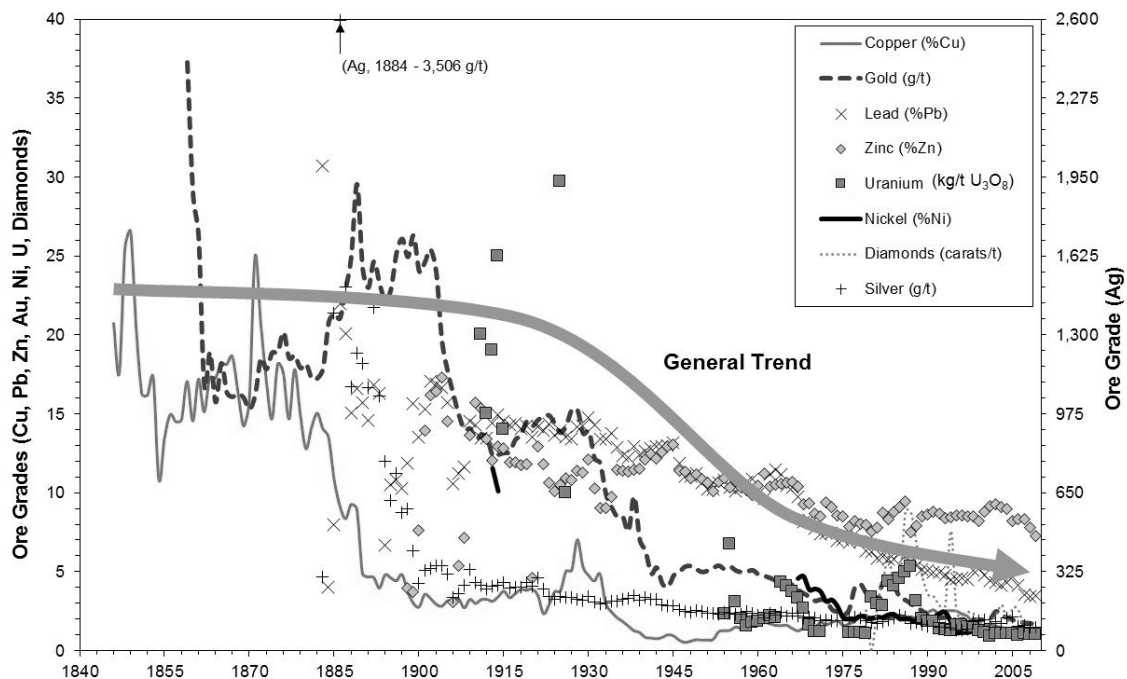
Rates of mining have decreased. A case can be made that globally, peak mining occurred sometime in the early 1990's. The only region left on the planet that is increasing rates of mining is China.

There are a number of technical reasons for this, which have translated into an economic outcome:

- Decreasing grade
- Increasing rock hardness
- Higher strip ratio
- Increasing depth to be mined to access ore
- Increasing Capital Expenditure and Operating Expenditure
- Decreasing grind size (requiring more energy and water)
- Increase in penalty elements
- Increase in required energy
- Increase in required potable water
- Much greater environmental impact

As we mine out all of the easy to work deposits, only the harder work deposits are left. Often, ore deposits are deeper underground, requiring a greater strip ratio or deeper underground operations. This requires more energy and capital as part of the cost of doing business. Penalty elements in saleable concentrate going to the smelter like arsenic, fluoride or cyanide are now accepted where decades ago they would have been rejected. Often, only countries like China would accept these concentrates due to environmental pollution generated during their processing. Economies of scale need mining operations to double and triple in size for the next generation to be economically viable.

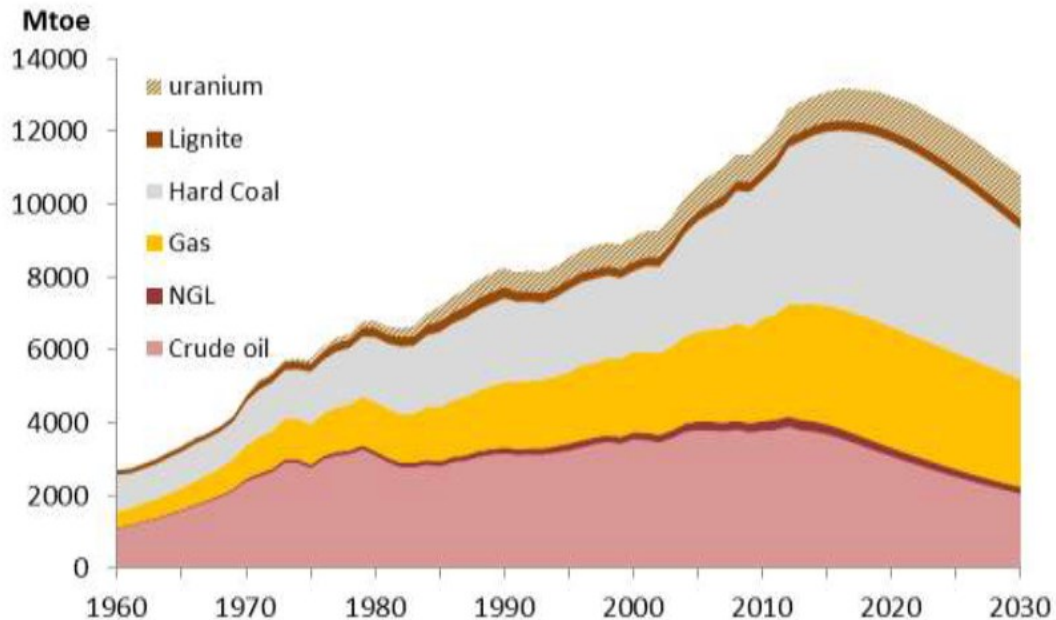
All of the above results in an increase in power and water at a time when power and potable water shortages are probable. This implies that mining in its conventional form will peak and decline, just like production rates of any other non-renewable natural resource.



Source: Mudd, G. *The Sustainability of Mining in Australia - Key Production Trends and Their Environmental Implications for the Future*, Department of Civil Engineering, Monash University and the Mineral Policy Institute, 2007, Revised April 2009

All future operations looked at now are huge, low grade deposits, with penalty minerals more prominently present in the deposit that prevent efficient processing at ever decreasing grind sizes. The scale of these low grade operations is much larger than what is done now. Energy is the rate determining step, which facilitates the continued application of technology with economies of scale. Total world fossil fuel supply is close to peak, driven by peak oil production. Declining oil production in the coming years will create a rising gap which other fossil fuels like gas or coal, will be unable to compensate for. The energy contribution of nuclear fuels is too low to have any significant influence at a global level, though this might be different for some countries. Moreover, as with fossil fuels, easy and cheap to develop mines are also being depleted. In uranium production, for example, effort and cost will continuously increase as a consequence.



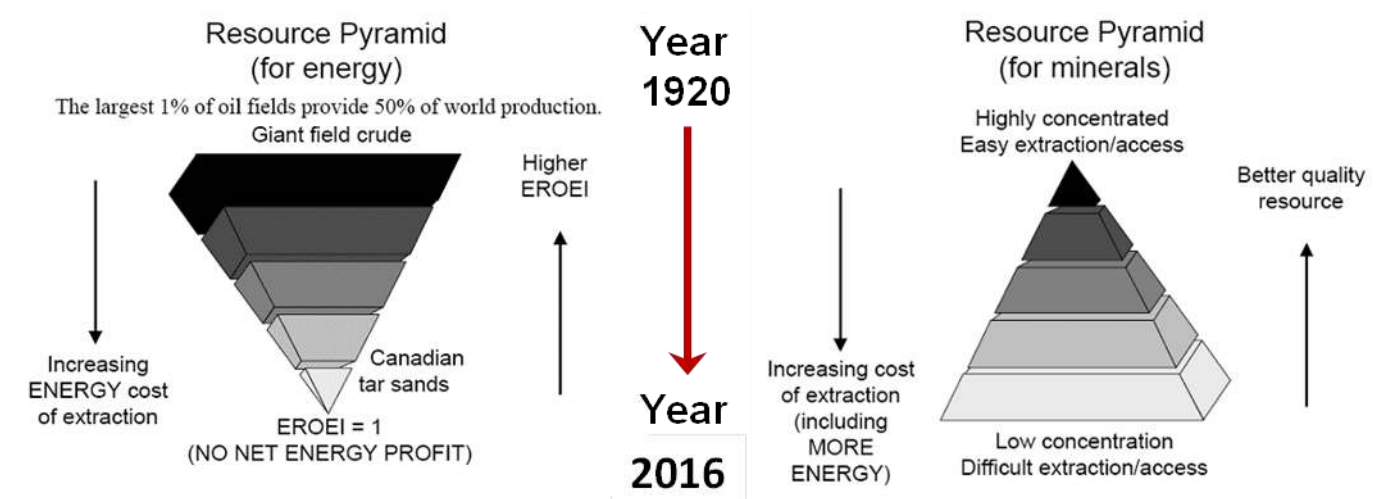


- 1 Mtoe = 7.1 million barrel of crude oil and condensate
- 1 Mtoe = 10 million barrel of natural gas
- 1 Mtoe = 1.16 billion m<sup>3</sup> of natural gas liquids
- 1 Mtoe = 1.5 Mt hard coal (1.8 Mt sub-bituminous coal)
- 1 Mtoe = 3 Mt lignite
- 1 Mtoe = 58 t uranium

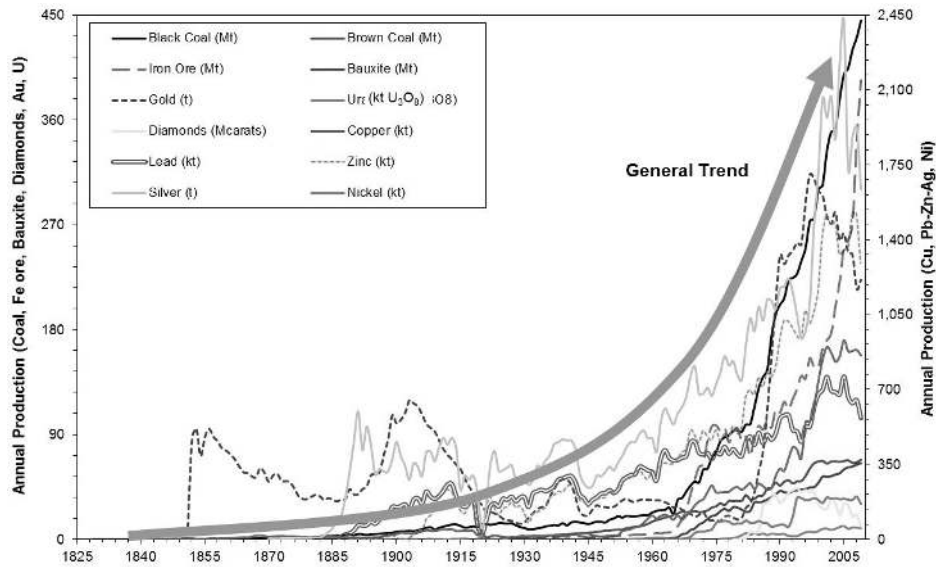
Source: Zittel, W. et al, *Fossil and Nuclear Fuels – the supply outlook* Energy Watch Group, March 2013 *Fossil fuels and Nuclear fuels projected production based on known reserves (includes unconventional sources)*

The industrial systems that each of these energy sources supports are quite different and are not easily interchangeable. That being said, each of those industrial systems are vital for our society to function. Putting all energy sources together gives a snapshot of our industrial capability (Figure above). Peak total energy is projected to be approximately in the year 2017, next year. As all of these sources are only a few years away from peaking and declining (with the exception of uranium), a compelling case can be made that that our society and its industrial sector energy supply faces a fundamental problem, which is systemic in nature.

Depletion of energy resources exacerbates this problem. In 1920, energy resources were large and extraordinarily productive. Mineral and metal deposits were quite small and very high grade. In 2016, energy deposits are heavily depleted (where conventional oil and gas had already peaked production), and mineral deposits have also decreased in grade. To extract those huge low grade deposits in 2016, an exponentially larger quantity of energy is required, at a time when available energy reserves are also heavily depleted. As demand for these minerals has increased, much more ore has to be mined to meet production targets, which require much more energy per unit of metal. As these trends meet, the whole concept of mining metal becomes invalid, regardless of the economics of the sale of the metal in question (all of them).



At the same time as the above problems are approaching global limits, the development of industrialisation has required the ever increasing demand for consumption of metal resources. Socially, our resource consumption behaviour (materialism) stems from the belief that everything on the planet is there for our exploitation.



Source: Mudd, G. *The Sustainability of Mining in Australia - Key Production Trends and Their Environmental Implications for the Future*, Department of Civil Engineering, Monash University and the Mineral Policy Institute, 2007, Revised April 2009

Global metal production shows an exponential consumption profile of a finite natural resource. Copper annual global demand in 2010 was 17 million tonnes, which at an ore grade of 0.5% (global average for 2010) represents 3.4 billion tonnes of rock mined. It is projected that by the year 2100, annual copper demand will be 100 million tonnes. If the average copper ore grade stayed at 0.5%, this would represent 20 billion tonnes of rock mined. If average ore grade dropped to 0.2%, this would represent 50 billion tonnes of rock mined. There comes a point where processing the waste rock will invalidate the value of the metal content of the ore. Next generation mine feasibility studies are considering copper grade cut-offs at 0.1%.

These are symptoms of a system in resource consumption overshoot, where we are drawing on the world's resources faster than they can be restored, and we are releasing wastes and pollutants faster than the Earth can absorb them or render them harmless. They are leading us toward global environmental and economic collapse.

Every non-renewable natural resource we depend upon is now depleting to the point of peak extraction, or will soon. Industrial systems that are heavily dependent on energy reserves and metal resources are now at serious risk of collapse, as production of those raw materials will soon not be able to meet demand. All living systems on the planet are in serious bio stress and are also heavily degrading. Natural bio systems of all kinds are being depleted in the name of economic development. The planet's climate is also undergoing change. Our culture's fundamental belief that there are no limits and growth is good, is related to the belief that all resources are infinite. As this is a finite planet and our exploitation of these natural resources is exponential in form, there will come a point where resource scarcity will become a reality. We are biologically driven to consume and expand. All animals on the planet are programmed like this as a survival mechanism.

While there are some unprecedented macro scale issues facing humanity, the biggest change and evolution is going to be social in nature. Currently we are on the path of wilful ignorance and 'give war a chance'. At this time, our social footprint in Western Culture is isolationist and even delusion. As a generalisation, the average person has no understanding or interest in where the material goods they consume on a daily basis come from. In the same fashion, often no thought is given to our waste products or environmental impact. There is a widespread belief that environmental deterioration is far removed from the individual. Out of sight, out of mind (certainly not all but the decision making part of our society demonstrates this).

Our industrial requirements will have to be met with a fundamentally different approach to anything we have achieved before. We need to stop depending on non-renewable natural resources and stop the material requirements of the human societal footprint growing exponentially. Mining will continue, but according to a radically different business model with a very different mandate from the current one.

The fundamental challenge that faces humanity is a choice between our consciousness and our biology. Are we driven to consume everything in our path like a yeast culture? Or can our intelligence and understanding help us evolve to become respectfully sustainable? If we wish to take our place on this planet as a genuinely sustainable species, we, the people, have to decide what kind of world we wish to live in. The timing for this choice is upon us.

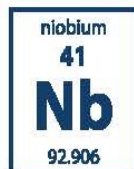


**A&R Merchants Inc.**  
**Tantalum & Niobium**



**Tantalum Products Supplied:**

- Tantalum Electron Beam Ingot, Tantalum Vacuum Arc Ingot
- Tantalum Electron Beam Chips, Tantalum Powder
- Tantalum Wire, Tantalum Furnace Parts, Tantalum Strip
- Tantalum Foil, Tantalum Plates – Blanks



**Niobium products supplied:**

- Niobium Electron Beam Ingot, Niobium Vacuum Arc Ingot
- Niobium Electron Beam Chips, Niobium Plate, Niobium Wire
- Niobium Oxide, Niobium Strip, Niobium Foil

**Tantalum and Niobium  
Suppliers for the  
Capacitor Electronics,  
Sputtering Target  
& Super Alloy Industries  
Worldwide**

**A&R Merchants Inc. is a leader in the supply  
of conflict free Tantalum & Niobium products**



**A&R Merchants Inc.**  
**Tantalum & Niobium**

**Visit our website to view our ethics policy  
[armerchants.com](http://armerchants.com) • 718.790.7757**



# MODERN SLAVERY ACT – UK TRANSPARENCY IN SUPPLY CHAINS REQUIREMENTS COME INTO FORCE

## Why is this relevant for an MMTA Member or Associate?

- ⇒ Do you have a global turnover of at least £36 million?
- ⇒ Do you carry on a business/ part of a business in the UK?

**Then you may need to produce a statement on the steps you have taken to eradicate slavery in your supply chain for each financial year.**

The Modern Slavery (Transparency in Supply Chains) Regulations have brought into force section 54 of the Modern Slavery Act 2015. This has been in force since 29 October 2015, but will apply to financial years ending on or after **31 March 2016**.

Section 54 of the Act requires commercial organisations with a global turnover of at least £36 million, that carry on a business or part of a business in the UK, to produce a slavery and human trafficking statement for each financial year. The statement must contain details of the steps that the organisation has taken in that year to identify and eradicate modern slavery from both its own business and its supply chain (or state that no steps have been taken, if this is the case). The expression 'modern slavery' encompasses the offences of slavery, servitude and forced or compulsory labour and human trafficking, set out in sections 1 and 2 of the Act.

To coincide with section 54 coming into force, the government has published guidance, entitled [Transparency in Supply Chains etc: A practical guide](#), explaining what is meant by the expressions modern slavery and human trafficking, who is required to comply with the new requirements, the steps involved in producing and approving a statement, some practical steps an organisation may wish to take with regard to training and supply chain due diligence, as well as what an organisation should do if it identifies the existence of modern slavery within its supply chain.

The Act requires organisations to prepare and publish a statement, rather than to take any positive steps to eradicate slavery from their supply chains. However, the government envisages that commercial pressure will be brought to bear on those organisations that fail to take action. The new requirements will make transparent what a particular organisation is or is not doing, and will enable members of the public, employees, consumers and investors to make informed decisions about which organisations they do business with. Statements (and any failures to produce them), are likely to attract the attention of some NGOs and sections of the media that report on social and human rights issues. The consequences of failing to take the issue seriously, in terms of damage to reputation and competitive disadvantage, could be significant.

## WHICH ORGANISATIONS WILL BE AFFECTED?

The requirement to produce a statement applies to 'commercial organisations' – including companies, partnerships and LLPs, wherever incorporated or established – that carry on a business or part of a business in the UK and have a global turnover of not less than £36 million. The definition of 'commercial organisation' under the Act is very wide, so the new provisions are likely to be applicable to a large number of organisations and groups that have some commercial presence in the UK.

Of the £36 million per annum minimum turnover, there is no minimum level of business or turnover that must be attributable to the UK itself, provided that, applying a common sense approach, an organisation can be said to be 'carrying on a business or part of a business in the UK'. The government has said it anticipates that this will 'mean that organisations that do not have a demonstrable business presence in the United Kingdom will not be caught by the provision' and 'having a UK subsidiary will not, in itself, mean that a parent company is carrying on a business in the UK, since a subsidiary may act completely independently of its parent or other group companies'. However, ultimately the courts will be the final arbiter, taking into account the particular facts.

In some cases, it may not be obvious whether the activities of a particular company within a group form part of the business of another organisation within the same group. Given the emphasis the government is placing on complying with the spirit rather than the letter of Act, in cases of doubt, it would seem prudent for an organisation to produce a statement.

Once an organisation has produced a slavery and human trafficking statement, the government strongly recommends that it should continue to do so in respect of subsequent financial years, even where its turnover falls below the threshold, as this will enable consumers to chart an organisation's progress, year-on-year and will demonstrate a genuine commitment to eradicating slavery and human trafficking.

Further details on franchises, subsidiaries and Group reporting: <http://www.penningtons.co.uk/news-publications/latest-news/modern-slavery-act-%E2%80%93-transparency-in-supply-chains-requirements-come-into-force/>

## **WHAT SHOULD THE STATEMENT SAY?**

The Act is not prescriptive in terms of the form or content of a statement. The amount and type of information included will depend on the sector in which an organisation operates (for example, what is required for a retailer with overseas suppliers may be very different to what is required for a professional services firm operating solely in the UK), the complexity of its structure and supply chains and the sectors and countries in which its suppliers operate.

However, a statement should:

- be written in simple language that is easily understood;
- be succinct but cover all relevant points;
- be in English – but may also be in other languages relevant to a particular organisation's business and supply chains;
- specify steps taken on a country by country basis, where applicable;
- provide appropriate links to other publications, policies and publicly available documents for the organisation; and
- be true and refer to actual steps taken or begun.

The government has identified some examples of the types of information an organisation may wish to include in its statement:

- details of the organisation's structure, business and supply chains;
- the organisation's policies in relation to slavery and human trafficking;
- the due diligence processes the organisation undertakes in relation to its business and supply chains;
- identification of those parts of the organisation's business and supply chains where there is a risk of slavery and human trafficking occurring, and the steps it has taken to identify and address those risks;
- the training available to the organisation's staff about slavery and human trafficking; and
- the organisation's effectiveness, year-on-year, in ensuring that slavery and human trafficking is not taking place in its business and supply chains (measured against those performance indicators it considers appropriate).

The statement must be approved and signed off at a senior level. In the case of companies, it must be approved by the board and signed by a director, for LLPs it must be approved by the members and signed by a designated member, for limited partnerships (registered under the Limited Partnerships Act 1907) it must be signed by a general partner and for any other type of partnership it must be signed by a partner.

## **WHERE AND WHEN DOES IT NEED TO BE PUBLISHED?**

The statement must be published on an organisation's website (where it has one), with a clearly marked link to the statement in a prominent place on the homepage (which could include in a drop down menu). The guidance suggests using a link such as 'Modern Slavery Act Transparency Statement'. Where an organisation has more than one website, the statement, or a link to it, should be included on each website.

Organisations that do not have a website must provide a copy of their statement to anyone who requests it within 30 days of a written request being made.

The government has said that organisations should produce and publish their statements as soon as reasonably practicable after the end of the financial year to which they relate, and they are encouraged to report within six months of the end of the relevant financial period.

## **WHAT HAPPENS IF AN ORGANISATION FAILS TO COMPLY?**

The Secretary of State is empowered to bring enforcement proceedings seeking an injunction against an organisation that fails to comply with the requirement to produce a statement. If the organisation fails to comply with the injunction, then it will be in contempt of court and liable to an unlimited fine. In addition, the government envisages that organisations that fail to comply will be penalised in terms of loss of reputation and ultimately, loss of custom and investment.

## WHAT SHOULD AN ORGANISATION DO IF IT IDENTIFIES MODERN SLAVERY IN PRACTICE?

The guidance sets out the actions an organisation should take where an instance of modern slavery is identified (or suspected).

If a specific case of modern slavery is identified within the UK, it should be reported to the police immediately on the non-emergency number of 101 (or, in cases where a victim may be in immediate danger, on 999).

If modern slavery is identified (or suspected) abroad, the response should be tailored to the local circumstances – which may involve engaging with local trade unions, NGOs, industry bodies or other organisations in some cases, and in others, might require involving local government or law enforcement agencies. The guidance also specifies what organisations should do where they feel that the local response has been inadequate.

## WHAT STEPS SHOULD BUSINESSES BE TAKING NOW?

The relationship between business and human rights has become an issue that increasingly businesses cannot ignore. On one hand, businesses can help advance human rights, including by offering access to higher living standards. On the other, businesses can also hinder human rights, as underlined by recurring reports from around the world of, for instance, unsafe working conditions and migrant worker exploitation. Meanwhile, there is growing worldwide recognition of the role business can and should play in ethical trade. According to the International Labour Organisation, 21 million people worldwide are victims of forced labour.

Some organisations, including UK quoted companies that are required to produce a Strategic Report, and some entities with a US presence that are subject to the [California Transparency in Supply Chains Act](#), will already report on human rights and slavery issues and the effectiveness of any company policies on these issues and will be well-placed to comply with the new requirements. In addition, some organisations are already adhering to corporate human rights responsibility initiatives, such as the [UN Global Compact](#), the [UN Guiding Principles on Business and Human Rights](#) or sector-specific human rights guidance produced by the European Commission. They will be reviewing existing practices in order to comply with these new requirements

Whilst the requirement under the Act is to produce a statement rather than to take positive steps to eradicate modern slavery, the government has said that ‘the provision seeks to create a race to the top by encouraging businesses to be transparent about what they are doing, thus increasing competition to drive up standards’.

Whilst organisations with a financial year ending on or before 30 March 2016 will not have to produce a statement in respect of that financial year, they will need to report in respect of the whole of the next financial period, including any portion of it that falls before 31 March 2016, so those that are not already doing so, should be taking steps now to:

- map their supply chains by identifying suppliers and contractors and the locations in which they operate and identifying those areas of the organisation’s business and supply chains where the risk of modern slavery is the greatest;
- consider the risks of creating documents that are disclosable to third party stakeholders, regulators and investors. Non-compliance will no doubt see businesses targeted by NGOs, government bodies and the investigative media;
- consider the merits of utilising external legal advice to benefit from legal advice privilege when assessing supply chain risks;
- consider what due diligence they will need to carry out in respect of their supply chains and whether it will be undertaken in-house or outsourced. Effective policies and practices will need to be in place to support this. There are inherent risk and compliance considerations given the linkages to anti-corruption, ethics, and whistleblowing policies and procedures;





- identify who within the organisation will be responsible for co-ordinating efforts to investigate and manage the risk of modern slavery in the business and supply chains, and consider how they will be both incentivised and protected;
- ensure that the organisation is educated with regard to the legal, reputational and commercial risks of modern slavery and how to respond where modern slavery is found or suspected – this may be best effected through appropriate, targeted training, tailored to the roles that individuals perform within the organisation (for example, agency worker management, supply chain management, corporate social responsibility, procurements, HR and in-house legal) and employees should be made aware of the modern slavery helpline on + 44 (0)800 0121 700;
- review existing practices and consider whether these may influence and create a modern slavery risk if not managed carefully – for example, where they require that products be sourced at the lowest cost and shipped in the fastest time;
- review existing employee and supplier codes of conduct and consider whether contracts with suppliers and contractors ought to include appropriate provisions regarding their own due diligence procedures;
- monitor other international initiatives and developments. There is a clear direction of travel regarding business and human rights. For example, the 193 member states of the UN have provisionally agreed to include a pledge to eradicate slavery and forced labour in the new sustainable development goals.

For more information and advice on this topic please contact:

Chris Syder , [chris.syder@penningtons.co.uk](mailto:chris.syder@penningtons.co.uk), +44 (0)1256 40711

Angela Ragnauth, [angela.ragnauth@penningtons.co.uk](mailto:angela.ragnauth@penningtons.co.uk), +44 (0)1223 465426



**PENNINGTONS  
MANCHES**

## French substitution bill takes first step –Proposed law aims to give companies incentive to substitute

The French National Assembly recently gave its first reading to a bill, which would establish a list of hazardous chemicals that companies would be encouraged to substitute.

Although the bill has been proposed by a party with relatively few representatives in parliament – EÉLV (Europe Écologie Les Verts) – it seems that the measure has government support and is likely to become law.

The bill would not make substitution mandatory, but would require companies to check whether their products contain any of the substances on the list, and to report this to the country's National Institute for Industrial Environment and Risks (Ineris).

To encourage substitution, France's government would offer financial rewards and help in the process, said EÉLV spokesman Augustin Billetdoux.

It is not clear how the government would compile the list, Mr Billetdoux said, but the legal text says it should include all SVHCs – the substances on the REACH candidate list.

It also puts forward that France's Agency for Food, Environmental and Occupational Health and Safety (Anses) advise the government on which chemicals to include.

The EÉLV wants the list to closely resemble NGO ChemSec's Substitute it Now (SIN) list, and to use the candidate list only as a starting point.

ChemSec said there was a need for incentives and for information exchange about alternatives, and that the candidate list "provides the bottom line of which substances must be substituted legally within the near future".

A parallel bill will next receive its first reading in the Senate, the French parliament's upper house, before the Assembly bill has its second reading.

It would take at least a year for the bill to pass through Parliament, said Mr Billetdoux.

# COP 21 – A boost for minor metals?

The COP 21 negotiations concluded in December in Paris with an un-paralleled global deal to tackle climate change. As well as clearly setting out a limit to the planet's temperature rise, it has also set a pathway to achieve this, including money for poorer countries to adapt.

The deal signifies a new way for the world to achieve progress, with a renewed recognition that emissions and economic growth can be decoupled. The move away from fossil fuels to the low carbon economy signals a global shift that has the potential to change the world for the better.

After two weeks of intense negotiations, the deal limits the rise in global temperatures to less than 2°C. This is the first to commit all countries to cut carbon emissions.

Nearly 200 countries took part in the negotiations to strike the first climate deal committing all countries to cut emissions, which will come into force in 2020. The G77 group of developing countries, and nations such as China and India have declared their support for the proposals.

The agreement is partly legally binding and partly voluntary in an acknowledgement that previous talks such as Copenhagen 2009 failed due to the attempt to impose emissions targets on countries. China, India and South Africa were, at the time, unwilling to sign up to commitments that they felt may inhibit their economic growth. The COP 21 deal was welcomed by representatives of the world's least developed countries, as well as leaders such as Barack Obama, Angela Merkel and Xi Jinping.

## COP 21 Key points

- To peak greenhouse gas emissions as soon as possible and achieve a balance between sources and sinks of greenhouse gases in the second half of this century.
- To keep global temperature increase "well below" 2°C (3.6°F) and to pursue efforts to limit it to 1.5°C.
- To review progress every five years.
- \$100 billion a year in climate finance for developing countries by 2020, with a commitment to further finance in the future.

Minor metals are essential for a range of renewable energy technologies that will need to be developed in order for the world to move away from fossil fuels and keep the global temperature increase to 'well below' 2°C. Shares in renewable energy companies rose slightly on the news of this deal, whereas those of fossil fuel providers dropped.

The contribution of minor metals to renewable energy technologies is detailed further in the document '[Minor Metals: Renewable Energy Technologies](#)' written by the MMTA's Sustainability Working Group. Needless to say minor metals are of paramount importance from solar panels to electric vehicles.

If countries are serious about their commitment to this deal then there must be investment in developing technologies that will not contribute to further global temperature rises. In theory, this agreement should provide a great opportunity for the minor metals industry supplying these essential innovations.

There are, of course, weaknesses in the deal. It has been criticised for its lack of legally binding targets, and has also been accused of being just promises rather than concrete actions. A crucial point that needs to be considered is that the countries need to still ratify the agreement, so at the moment they have decided what they ought to be doing but haven't committed to actually take the steps necessary. It will require serious political will to deliver on this.

- China saw by far the biggest renewable energy investments in 2014 — a record \$83.3 billion, up 39% from 2013. The US was second at \$38.3 billion, up 7% on the year but well below its all-time high reached in 2011. Third came Japan, at \$35.7 billion, 10% higher than in 2013 and its biggest total ever.
- A key feature of the 2014 result was the rapid expansion of renewables into new markets in developing countries. Investment in developing countries, at \$131.3 billion, was up 36% on the previous year and came the closest ever to overhauling the total for developed economies, at \$138.9 billion, up just 3% on the year. Additional to China, Brazil (\$7.6 billion), India (\$7.4 billion) and South Africa (\$5.5 billion) were all in the top 10 of investing countries while more than \$1 billion was invested in Indonesia, Chile, Mexico, Kenya and Turkey.
- Wind, solar, biomass and waste-to-power, geothermal, small hydro and marine power contributed an estimated 9.1% of world electricity generation in 2014, compared to 8.5% in 2013. This would be equivalent to a saving of 1.3 gigatonnes of CO<sub>2</sub> taking place as a result of the installed capacity of those renewable sources.
- 2014 was dominated by record investments in solar and wind, which accounted for 92% of overall investment in renewable power and fuels. Investment in solar jumped 29% to \$149.6 billion, the second highest figure ever, while wind investment increased 11% to a record \$99.5 billion. These expenditures added 49GW of wind capacity and 46GW of solar PV, both records.
- Investment in Europe advanced less than 1% to \$57.5 billion. There were seven billion-dollar-plus financings of offshore wind projects, boosting the investment totals for the Netherlands, the UK and Germany. These included, at the euro equivalent of \$3.8 billion, the largest single renewable energy asset finance deal ever, outside large hydro – that of the 600MW Gemini project in Dutch waters.

Source: <http://fs-uneep-centre.org/publications/global-trends-renewable-energy-investment-2015>



# LETTER FROM NORTH AMERICA

Dear Members

Snowzilla, snowmageddon, snowpocalypse... call it what you will, we had a fair smattering of the stuff recently (together with some strong cold winds). Indeed, just over the way from us in Central Park here in New York, the weather people recorded the second highest snowfall (26.8") since early-February 2006. And now it is melting – with a vengeance.

To kick off, I should like to congratulate David Abraham for all the coverage his book "The Elements of Power" has received. And I understand he addressed guests at the Association's dinner here in NY recently. I am only sorry that I was unable to attend. And I understand from reading the press that we now have a number of new elements. Whether they are "of Power", I know not. But I understand that they are being looked at in this edition of The Crucible.

It's always somewhat difficult to keep track of what's happening here on a policy front that may concern minor metals. However, I always think it is a good idea to look out for what the U.S. Senate Committee on Energy & Natural Resources has been up to. And, indeed, back on January 19, the Committee, under the chair of Senator Murkowski of Alaska, held a "[Hearing to examine the near-term outlook for energy and commodity markets](#)."

Needless to say, oil was a major topic of discussion. As were both wind and solar energy. (I think that Members will probably already have noted that, back in December, as part of the same \$1.15 trillion federal spending bill that lifted the 40-year ban on oil exports from the U.S., federal subsidies for renewable energy, which includes both solar and wind, were extended.)

For Members of the MMTA, probably the most interesting testimony was that of Daniel McGroarty of Carmot Strategic Group. Mr McGroarty has, over the past several years, appeared before a number of committees on Capitol Hill. Amongst other things, in his words, he consults "*to the Institute for Defense Analyses (IDA), which supports the Departments of Defense and Homeland Security, the Joint Chiefs' Joint Staff and the Intelligence Community on issues related to strategic materials and resource security.*"

The case he put forward was that, "*of critical metals and minerals, the U.S. is deeply dependent – and growing more so*" and there is the need to reverse the country's "*resource dependency*." While "[we] used to call them "*minor metals*" we are in the midst of a materials science revolution – and access to the minor metals is taking on major implications."

In an energy context (solar PVs and, in addition, TVs), some of the metals he singled out were: indium, selenium and gallium. And, while describing the list of minor metals as being "*long*", others he mentioned (in particular in relation to defense) included: rhenium (jet turbines), electrolytic manganese and rare earths.

More could be done, he said, "*to encourage recycling of rare metals : reclamation from scrap laptops and cellphones – so-called urban mining – and also from fly ash and mining waste piles of all types, where techniques employed 50 and 100 years ago left behind metals and minerals no one needed then, but which are critical now.*"

He made the point that it is all very well to seek substitutes to "*rare metals*" (and we should continue to do so), but that we should also be aware that the metals we are trying to substitute may themselves be substitutes for "*scarce metals from earlier decades*" and that we may just be swapping one dependency for another.

Summed up, his message was: "*let's recycle, reclaim and seek substitutes, but let's also recognize there is no way out of our dependency without added production.*"

As for Mr McGroarty's near-term outlook for commodity markets, he used but a single word "*bleak*". But, he said, "*pricing will come back*". Thanks, Mr McGroarty!

Seriously, though, it is well worth looking at both his and the other testimonies at the hearing, especially that of Adam Sieminski of the U.S. Energy Information Administration at the U.S. Department of Energy.

And, on that note, from a slushy, sloppy New York, I remain, with very belated best wishes for a 2016 to MMTA Members everywhere.

Tom Butcher, January 28<sup>th</sup>, 2016

©2016 Tom Butcher

## ISTA / MMTA IMPORT EXPORT TRAINING COURSE: OPERATIONAL ISSUES & PROCEDURES

The next two-day ISTA / MMTA Training Course on import / export processes & procedures is being held on Thursday-Friday, 17<sup>th</sup> and 18<sup>th</sup> March 2016.

Over 200 representatives from member and associate member companies have benefitted from this course, which covers Incoterms, Customs Formalities, Methods of Shipment, Cargo Insurance, Documentation and Methods of Payment. The event is being held at the MMTA Office in London

Jon Walden MBE (Crown Agents) will again be the course presenter.

The cost will be £395 + VAT (including a copy of INCOTERMS 2010).

**Book online on the '[Events](#)' page of the MMTA's Website or contact [executive@mmta.co.uk](mailto:executive@mmta.co.uk)**



# North America Update

2015 was a big year for the MMTA in North America, with 6 of the 11 new Members hailing from the region. In addition to growing numbers, our programming also increased, with informal drinks leading into the Toronto conference and our China Seminar in New York last June. With a slight scheduling change, all of this led us to our annual MMTA New York Dinner this January, kindly sponsored by Exotech Inc., where we were joined by over 40 fellow Members and friends of the Association, despite the imminent snowstorm.

As the MMTA North American Committee Chair, I am often asked by those outside our field to describe just what "metals trade" means and what it is we do. Of course we're trying to make a good living – a tough prospect at this time – so are Doctors, but it doesn't mean that's what medicine is about. The best answer I have is that as an industry, we try to get materials to where they can have the maximum benefit for global society, creating maximum positive socio-economic development for the people and places from whence these resources come, while also enabling those orchestrating commerce responsibly to provide well for their own families and communities.

This cooperation for mutual benefit not only brings materials and their applications together; it brings people and nations together. As a child of the Cold War and the son of a parent in the global metals trade, I saw this first-hand. My father, and those of his generation in our Association, have done this in China for five decades, and our industry has contributed to the greatest mass elevation of people out of poverty in history, not to mention the benefit to international relations across political divides.

Indeed this work continues today, around the world and in North America. I came to the NY Dinner from Mexico, where growing aerospace activity there is helping to increase development and socio-economic opportunity in a part of North America that is often overlooked.

And of course the technological power of our elements directly helps people walk with medical implants, fly around our planet and even beyond, and further transcend space and time (perhaps, at times, too much) with our smart phones.

From the outside, not everyone gets this about the metals trade, but this has been the understanding I gained from the generation that founded and grew this Association. It is the reason why we devote our time to the MMTA, to pay the world forward the opportunities we have been given. In this respect, the Association helps MMTA Members do this important work to the highest standards possible, and with maximum success, by setting an internationally recognized standard and providing you with information, support and community.

Sounds like a very special and enlightening industry, but a complicated one – if only there was a book which could help give those outside the industry more understanding and insight! Thankfully there is the newly released volume, *The Elements of Power: Guns, Gadgets and the Struggle for a Sustainable Future in the Rare Metal Age*, recently reviewed in the *Crucible* (November 2015). The MMTA was pleased to welcome its author, David Abraham, as this year's speaker at our NY Dinner. Not only does David's book make repeated and positive reference to the MMTA and its work, but in the same week as the NY Dinner, *Elements of Power* was the subject of a sterling review in *The Economist*, which mentions one character from the book, who happens to be the MMTA NA Committee Chair.

<http://www.economist.com/news/books-and-arts/21688372-they-are-obscure-yet-essential-why-rare-metals-make-world-go-round-unobtainiums?fsrc=scn/tw/te/pe/ed/unobtainiums>

Indeed we are all greatly privileged to be in the metals trade, and with great privilege comes great responsibility. It is the privilege and responsibility of the MMTA to help our Members succeed in this industry, and through that, do our part to help elevate North America, the world and beyond! We look forward to achieving new heights together in 2016.

**Noah M. Lehrman**, NA Committee Chair, Hudson Metal & Alloy, New York

In his presentation at the NY Dinner, David Abraham outlined how rare metals are the key to China's next industries. The 'Made in China 2025' strategy focuses on ten industries, among them green technologies and aerospace. Rare metals, he explains, are at heart of these industries and China wants to maximize their domestic use. However, in order to achieve this, China needs first to rationalize the sector, then to consolidate and control production.

The end-state is not a completely consolidated sector—and can be in name only—consolidation may in reality mean by means of umbrella companies. But even if consolidation is not completely successful, it introduces more pricing power. The aim is to discourage outside investment that is not economic. The hope is to reduce black market trade. But at the same time there are always challenges; for example, local governments, especially cash strapped ones, are unlikely to fall in line.

To take a look at the wider perspective, the Chinese government is loath to allow wholesale bankruptcies and M&As with large layoffs. So it needs to work out inefficiencies and avoid such scenarios; It wants to control the materials of the future globally. It doesn't want to rely on others, and in that sense, China wants to be a reliable supplier, and optimize its own industry, whilst limiting access to suppliers from other countries.

There are administrative measures, some more direct, such as stockpiling, others as non-direct as local government bond swaps. Beijing will help smooth the transition and keep companies going through local bond swaps. By this means, they are taking on bad debt and issuing government credit in return – RMB 3.3 trillion of loans in 2015 increasing to RMB 5 trillion this year – a back door way of recapitalizing the nation's banks, and a means of keeping companies functioning.

Xi's supply side reforms "improving the effectiveness of supply", mean efficiency gains, rather than the elimination of ineffective supply (overcapacity), while there is an increasing sense the regime will be more tolerant. The hope is, over time, to shut down overcapacity and switch to new industries, but the pain of transition will be spread out and absorbed gradually, through mergers and acquisitions, rather than bankruptcies.

We should never forget that mining and metals are national security issues. That translates into strong bureaucratic powers, and the Chinese state will continue to play an important role.

But the backdrop in China is critical to understand. So let's step back.

## What is happening in China?

So what will we see in China overall, from a non-economist's perspective? The economy is facing serious headwinds. And the risk is that political legitimacy is tied to stability, especially economic stability. So despite bold proclamations in the press of what China will do, gradualism will be the key to any change.

In terms of GDP, the growth target is binding. Reformers can shift policies, move reforms, but numbers are hard to back away from; therefore Beijing will find a way to plug demand gaps to meet its growth targets. For this reason, GDP is not a good measure—an extra railroad or a few airports can create growth, but growth alone is not the right focus. To understand the situation, we need to look below the headline numbers.

In conclusion, there is some mild strength in services and consumption. In fact, we have seen greater growth there than in industry in 2015 numbers so far. Services are growing faster than industry, so there are positives in the first three quarters of 2015. David's analysis is that we will see more 'muddling along', hoping that administrative measures over the next 18 months take effect. He anticipates that more capital controls could be employed to reduce the need for drastic measures. Reuters recently suggested a 10-15% devaluation, but he is not so sure. "I don't see it", he says, "Xi wants to restore credibility, and after a bungled limited devaluation and stock market policies, he wants to show a controlled hand".

Growth is still at 6.9%, which by any other standard is huge, arguably equal to roughly 13-14% growth in 2009, but in reality, that number means little.

# Terrorism: How exposed are you?

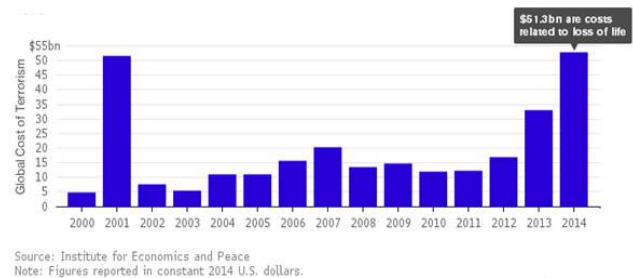
Two Members of the MMTA's Insurance Task Force broached the very current and difficult topic of terrorism from an insurance perspective.

## The Cost of Terrorism

In addition to the tragic loss of life related to acts of terrorism, there are also economic repercussions, including the disruption of production and a decline in investment. Economists have calculated that in many countries affected by terrorism including Nigeria and Israel, investment activities have reduced as a direct result of terrorism.

An analysis of the cost of September 11 conducted by The New York Times added up the physical damage (\$55 billion) and the economic damage (\$123 billion). It also included other costs: the cost of developing the Homeland Security Department (\$589 billion), war funding (\$1.6 trillion) and what was determined to be the continuing cost of those wars and taking care of veterans (\$867 billion).

Tragically, time has not led to a decrease in terrorism, with 2014's death toll from terrorism putting the global cost higher than that of the September 11 attacks. To put a price on terrorism, (see graph) the Institute for Economics and Peace calculates the value of property damage; say from a suicide bombing in a building, and the cost of death and injury, including medical care costs and lost earnings. It doesn't take into account the increased number of security guards, higher insurance premiums, or city gridlock in the aftermath of an assault, or the other associated costs used for the September 11 analysis as mentioned above.



Terrorism is not a new phenomenon. Stories of indiscriminate terrorist attacks riddle the histories of our societies. Yet we are stricken more during some decades than others. Since September 2001, terrorist attacks or the fight against terrorist cells and organisations make front-page headlines almost weekly. This begs the question: How exposed is your business to this unpredictable, violent threat?

The latest terrorist attacks have been aimed at so-called soft targets: public spaces and events such as metros, museums and marathons. But at this moment an attack against vital infrastructures is seen as a realistic scenario, too. Large transport hubs such as harbours and airports can be targeted, causing not only extensive damage to property, but also causing massive delays in transport activities. Such an attack could severely disrupt your daily business.

Does your insurance policy cover such losses? For example, you may have a marine cargo insurance policy. This policy could contain a Termination of Transit clause (Terrorism) in combination with War & Strikes clauses. These provide only a limited type of coverage.

Terrorism in relation to insurance is an emerging topic and it is facing many types of (local) legislation. It is difficult to cover this topic on paper in only a few words.

The global insurance markets are continuously developing, monitoring and evaluating any possible insurance solutions. Yet, insurance policies exist which protect property damage and business interruption.

The insurance brokers of the MMTA Insurance Task Force are more than happy to provide assistance if you would like to review your existing insurance coverage and discuss various types of insurance solutions to protect your interests. If you would like to know more about the possible insurance solutions and/or discuss the specific situation of your company in detail, please feel free to contact the MMTA Insurance Task Force.

**Erwin Slagter, Patrick Roodbol , H.W. Wood Limited**



In an increasingly globalised world, where international trade is key to providing the resources for infrastructure development and economic growth, it is essential to consider the broad threats this can present. Today's risk management involves strategic analysis of the political and economic climate, not only of your domiciled territory, but of all those in which the business operates throughout its network of operations.

Nowhere is this more clearly demonstrated than amongst commodity traders, where raw and manufactured products are shipped globally, exposed not only to the varying natural hazards, but to the vastly fluctuating country risks arising from political and economic instability. These frequently manifest themselves in exposure to political violence perils, from terrorism attacks on static assets (such as goods stored in port terminals), to war-like acts on commodities in transit (whether single carriage, convoy or at sea), to acts of marine piracy, where terrorist organisations have in the past used this approach to generate funding in pursuit of their ideologies.

The insurance market is keen to respond to the changing perils faced by our clients. Cargo war perils at sea and for goods in transit have traditionally been covered in the marine market, whilst storage of goods falls more within the remit of static terrorism & political violence insurers. Insurance brokers, such as Aon, seek to blend the covers in as seamless a way as possible, focusing on markets which can offer both static and marine coverage, utilising the most extensive wording forms based on enhanced forms of the market standard political violence wordings, institute cargo war clauses and institute cargo strikes clauses.

**Helen Somerton, Scott Bolton & Walle Romijn , Aon Commodity Trade**

# ***EXOTECH*** inc.

*For Over  
25 Years*

*Plant 3  
Opening  
Jan. 2016*



**STOCKING SUPPLIER OF RECYCLED  
PURE AND ALLOY**

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

All processing and quality assurance 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**