

# Europe's Trouble Is Good for Gold.



“Now the catastrophic scenario that many feared has materialized, making the disintegration of the EU practically irreversible. The financial markets worldwide are likely to remain in turmoil as the long,

complicated process of political and economic divorce from the EU is negotiated.” – George Soros

UK voters voted narrowly to exit the European Union on June 23rd, 52:48 percent, confounding complacent stock markets, currency markets and the UK and Europe's politicians, who nearly all smugly assumed that Prime Minister Cameron's Project Fear campaign would intimidate GB's voters to vote to remain in the EU. The prospect of unlimited future immigration from Romania, Bulgaria and eventually Turkey and Ukraine appears to have trumped Prime Minister Cameron's Project Fear campaign. Now in the aftermath, it is lose-lose all around, except in the precious metals sector, where the massive uncertainty generated, will boost the role of physical gold and silver as safe havens to the fiat euro and fiat British Pound, for months if not years to come.

## **Massive Uncertainty.**

So when will Great Britain exit the EU? The real question is will GB exit the EU even with the referendum outcome? Europe's Great leaders all met on Saturday and demanded that GB get on

with triggering Article 50 of the Lisbon Treaty, and start the process of a two year UK-EU negotiation that ends in GB leaving the EU. This massive uncertainty is bad for all, say the EU leaders. But on Friday, Prime Minister Cameron announced his resignation to take effect after his Conservative Party elects a new leader in October. It will be for that new Prime Minister to start the Article 50 process, sometime in October – December, if at all. However, it is by no means certain that GB will actually get to leave the troubled European Union. John Bull checked in, but checking out is hard.

The UK Parliament has two chambers, an unelected House of Lords, aka the House of Horrors, where only a tiny fraction of the members are anti-EU. The elected chamber is the House of Commons, where roughly three quarters of the existing members are on record as wanting to remain in the EU. Neither House is bound by the result of the referendum. Even if the next Prime Minister is pro leaving, it's by no means certain he could get leaving legislation through either House, even assuming generous terms from the EU27.

But the prospect of the EU stuck with an estranged member, permanently in a deep sulk, and whose voters would likely vote out the renegade M.P.s at the next election, in favour of the UK Independence Party (UKIP,) merely delays Brexit until after the next general election scheduled for May 2020. Since 2010 when the UK Parliament adopted fixed term Parliaments, there are very limited circumstances for calling an early election. But since that early general might trigger a massive UKIP vote, neither the deeply split Conservative Party nor the deeply disarrayed Labour Party are about bring forth the conditions necessary to trigger an early election and their demise.

Making matters even worse, Scotland voted to remain in the EU and its local government announced on Saturday that it wants talks with the EU about remaining. That in itself is a

nightmare for the EU. If it agrees to talks, it emboldens all the other regions in EU member states that want to split from member countries, especially regions in Spain, France and Italy. Down that route lies the breakup of the EU itself.

Everywhere around lies lose-lose uncertainty, with dither and dally and punt into the long grass any triggering Article 50.

Yet dither and dally, while the best option for GB, is about the worst option possible for the EU27. The European Central Bank already has much of the EU27 members of central bank life support for their bonds, and the whole policy has German voters on edge, and flirting with AfD (Alternative for Germany,) their own version of UKIP. Dither and dally and dragging out Brexit until 2020, for the EU27 risks the whole EU project and bringing down the euro.

There are now big question marks hanging over both the GB Pound and the longevity and safety of the euro. Europe's people, including those in John Bull's islands, have just been reminded of why all but the indigent, need to keep a little physical gold around for insurance. To Europe's nations, a timely reminder of why gold bullion, "the barbarous relic" to use Keynes misguided phrase, is still a vital neutral, intrinsic value component, of nation state foreign exchange reserves.

While Europe's voters will ultimately decide the fate of the EU27 over the next few years, I leave it to Germany's Der Spiegel magazine on June 24, to cover the scale of the problem facing the rump EU.

*As of today, Britain is no longer important to the future of the EU.*

*Europe's focus should now be squarely on the remaining EU member states and their citizens. They must now be convinced deep in their hearts that the EU is the best possible form of self-determination for them. But this conviction is only*

*attainable if the EU becomes more democratic, more transparent and less bureaucratic – that much is clear.*

Easy to say, but hard to do in practise. David Cameron tried his hardest to get reform, and utterly failed. The European future of gold looks good.

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## **Tasman Metals to play a crucial role in addressing Europe's rare earth supply concerns**

✘ China's dominance in the rare earth metals world market continues to cause concern in the European Union and future supplies could be threatened if a competitive option is not found. Tasman Metals Ltd. (TSXV: TSM | NYSE MKT: TAS), already considered a leader in the EU, is certainly one of the potential alternatives. The EU Commission has therefore formed ERECON, European Rare Earths Competency Network to monitor the supply of rare earths within the Union. Tasman, the single European based (but Toronto listed) mining company included in elected to participate in its expert group, can claim the only NI 43-101 compliant rare earths resource in mainland Europe featuring one of the highest concentrations (50%) of heavy rare earths (HREE) vs. total rare earth oxides (TREO) and it is especially rich in yttrium and dysprosium.

Tasman's project is located in a politically stable, mining friendly jurisdiction thereby ensuring a reliable and steady supply of the strategic metals. The company's projects, Norra

Karr and Olserum, in Sweden are two of the most important known HREE deposits of dysprosium, yttrium, terbium and neodymium. Tasman strives to provide a safe, sustainable and responsible development of its mineral projects in Scandinavia. Norra Karr is located near a very important highway and thus has the necessary infrastructure requiring no major investments. The power supply is also well within reach. Tasman has received all relevant mining concessions and the company can start to prepare the launch of production, which will hopefully take place between 2018 and 2019; it has also received an exploration permit of up to 500 tons of ore at Norra Karr.

Tasman recently announced that it has successfully produced a heavy rare earth (HREE) enriched concentrate at its Norra Karr project, representing a metallurgical milestone for Tasman and the last step toward creating its flow chart. The processing and hydrometallurgical tests were performed in various internationally recognized laboratories and data delivered in a quality sufficient for a pre-feasibility study currently under elaboration (PFS). Norra Karr is one of the world's most significant deposits of heavy rare earths, which are characterized by a simple and calculable mineralogy. Thanks to a relatively 'undemanding' flow diagram, conventional mining and processing facilities can be adopted using commonly used chemicals production is possible. Tasman has chosen sulfuric acid, because it is relatively inexpensive and widely available in Sweden and there is a rail link that runs just 25 km from the Norra Karr project, sulfuric acid is already transported in larger quantities. Tasman has performed extensive metallurgical process tests and has achieved a significant milestone with the precipitation of a product of high purity HREE and it now has a solid processing method. Tasman commissioned Australia's ANSTO in 2013 to optimize the hydrometallurgical flow sheet for Norra Karr that had already been started by other firms. ANSTO is an internationally recognized, leading analyst firm, which specializes in

hydrometallurgical investigations of rare earth metals and similar projects.

Tasman's progress comes at a crucial time as Europe's industrial powers have expressed concerns about the security of rare earth supplies in Europe. ERECON has served as a platform to address such issues as primary sources of rare earths production, resource efficiency and alternatives to raw materials in the form of recycling. Mark Saxon, Tasman's CEO, was one of the distinguished speakers at the ERECON conference in Milan last October 16. ERECON brought together experts and representatives from the most promising companies working toward improving the rare earth supply for Europe and the rest of the world. The timing could not have been more ideal as China has increased its efforts to limit the illegal mining and export of rare earths, launching a five-month campaign, especially designed to prevent a further drop in prices. From October to the end of March 2015 China will track down illegal and smuggling rare earth operations, setting severe fines – and criminal charges – against offenders. Provincial and municipal governments will monitor the efforts but there is the risk that in this latest effort by Beijing to attempt a reform of its rare earth industry may lead to stricter production quotas with allotments granted to an ever smaller number of authorized companies. The People's Republic is believed to have about 40% of the world's known rare earth reserves, addressing more than 90% of global demand. The United States, Japan and Europe have filed a complaint with the WTO (World Trade Organization) in 2012 insisting that China's production and export quotas limiting the supply for the global market gave Chinese companies an unfair competitive advantage.

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# Sanctions against Russia ignore the real politik of the markets

✘ The crisis in Ukraine, which started around last November, has intensified and exacerbated tensions between Russia and NATO to a degree unknown since the pre-Gorbachev Soviet Union. On September 30, The European Union decided to renew and add new sanctions against Russia, claiming that the peace plan in Ukraine has not yet been respected. Brussels had hinted that it would consider revoking the sanctions had there been progress by September 30 toward a ceasefire. The EU will continue to “closely monitor developments on the ground,” but failed to issue another deadline. Should the EU consider the ‘situation on the ground’ to have stabilized, it will consider amending or revoking the sanctions, in whole or in part. The EU, in effect, is looking for any possible excuse to scrap the sanctions as even the most critical EU member states were reluctant to enforce sanctions while others continue to demand a softer approach toward Moscow.

Russia, meanwhile, has taken the first steps to comply with the EU demands, agreeing to a ceasefire with Ukraine, even as it has enforced its own, ongoing, retaliatory embargo against a number of European agriculture-food sector products. The ceasefire is holding tenuously but there is great uncertainty and fear because Ukraine aspires to join NATO and the European Union within the next six years. There is very little chance Russia would allow this to happen without its own retaliation, especially about the issue of NATO membership. The Russian Foreign Ministry has been controversially referring to Ukraine’s ‘restive east’ as Novorossiia, the territory that once consisted of what in today’s terms would be Odessa, Mykolaiv, Kirovograd, Dnepropetrovsk, Kherson, Zaporizhya, Donetsk, and Luhansk.

The EU's sanctions Russia concern companies operating in the energy, finance and defense sectors, including the oil giant Rosneft and the weapons manufacturer Kalashnikov. The EU has also imposed assets freeze and a ban on granting visas to travel to a number of officials and business personalities considered to have close ties to President Vladimir Putin and pro-Russian rebels in eastern Ukraine and in Crimea, annexed to Russia. NATO military command said that while the first phase of the ceasefire saw a significant withdrawal of Russian forces in Ukraine, there are still hundreds of troops, including special forces, in Ukraine. The conflict between pro-Russia rebels and Kiev's own troops has now claimed more than 3,000 lives.

The crisis worsened last July 18, when (still unconfirmed) pro-Russia rebels accidentally shot down a Malaysian Airlines Boeing 777 airliner, (Flight MH-17) sparking a slew of allegations against Russia and its reckless arming of the rebels. Evidence suggesting that the rebels had Russian 'Buk' surface to air missiles, which were deployed against Ukrainian fighter jets and helicopters, amounted to a "massive escalation" of the crisis said Jonathan Eyal, director of the UK's Royal United Services Institute. It should be noted that while Flight MH-17 served as the premise to bolster Western resolve against Putin, the Ukrainian government holds the actual technical fault because it failed to shut down its airspace at a time of aerial warfare. In fact, the families of that flight's German victims plan to sue the government of Ukraine, rather than Russia's, in accordance with that failure.

The international response was to boost sanctions against Russia that had been rather tepid until that point. However, the US State Department, and the neo-conservatives that still have influence there, primarily one Ms. Victoria Nuland, the US Assistant Secretary of State in charge of Europe and Eurasian Affairs, played a rather important role in fomenting



the crisis. Nuland was secretly filmed as she addressed Ukrainian business and political leaders at a Washington meeting that the United States had spent "USD\$ 5 billion to develop Ukrainian Democratic Institutions". Nuland was evidently rather involved, then also in the successful coup (and it was a coup, regardless of one's feelings about the previous Ukrainian leadership) against the democratically elected, but pro-Russian President Viktor Yanukovich. Indeed, the situation in Ukraine is not at all as clear as the Western media and diplomacy hawks have presented it; that is, one where Russia is bullying a 'democratic' neighbor, trying to improve its fortune by looking toward alliances with the 'West' rather than staying 'East'. Many commentators have ignored the huge role played by the United States and its allies in prompting the Ukrainian crisis in the first place, ignoring, in the process, the very real risk of it escalating into a more wide reaching war.

The crisis has actually been rather less about Russian aggression in Ukraine than a Western attempt to lure Ukraine into NATO and the European Union, while weakening the political future of Russia's President Putin. Victoria Nuland's previously mentioned meeting proves that Washington invested many US tax payers' dollars to finance Kiev's Maidan public protests and the coup against President Yanukovich, who had been democratically elected. Russia sees NATO's creeping into Eastern Europe as a challenge to Russia, which had been assured of its continued influence – free of NATO troops – in a formal agreement signed by Presidents Mikhail Gorbachev and the George H. Bush at the time of German reunification in 1990. NATO, meanwhile, has announced it will build five new bases in Eastern Europe last August. This cannot but deepen tensions between the Kremlin and the West. Meanwhile, Ukraine has gained nothing since its new 'democracy' started. Kiev needed, says the IMF, some USD\$ 35 billion in aid last May; the IMF has revised that amount to USD\$ 55 billion, while economist Desmond Lachman says it now needs "closer to USD\$

100 billion". Moscow has not done so, but it could shut off supplies of its gas to Ukraine as winter approaches. The fact is that the most democratic solution would be to allow a referendum in the pro-Russian Ukrainian provinces to vote whether to stay in Ukraine or join Russia.

Many of the opinions heard so far, enforced by sanctions and materialized through the deceptive use of campaigns costing billions of dollars, have come from people living far beyond the borders of Russia or Ukraine. Meanwhile the sanctions continue; are they effective? The last package of sanctions Treasury USA and the EU takes aim at Russian banks, the energy industry and the military. Sberbank, the largest bank in Russia, will not have to Western long-term capital (that is any loan lasting over 30 days). The USA and the EU want to cease the development of exploration projects in Siberia and the Russian Arctic, preventing the West's oil majors from selling equipment and technology for deepwater shale gas projects. Exxon and Shell, therefore, can no longer do business – building pipelines for instance – with such energy sector giants as Gazprom, Gazprom Neft, Lukoil, Rosneft and Surgutneftegaz.

The United States Secretary of the Treasury, David Cohen, has insisted that the sanctions package "isolate" Russia further from the global financial system. Interestingly, nationalist Russian shareholders have seen to it that the shares of the companies on the list of sanctions go up rather than down while the shares of the oil majors in the United States have gone down! Oh, and because Russia has been isolated from Western capital, Russia will simply not be importing goods and services both from the USA and the EU – finding alternatives through its BRICS (Brazil Russia, India, China, South Africa) partners and beyond. Moscow is simply dealing in local currencies with its other business partners and this could hurt the West and its currencies in the long term, because other developing countries might start to do the same.

Russia may sell its energy resource in any currency except USD and EUR while importing clothes, technology, hi-tech electronics, computers, agricultural goods and raw materials it needs from Asia and South America. There are serious doubts, moreover, as to how long the EU member states, in absence of a shared energy policy, will last without Russian gas even if they manage to secure alternative supplies from other countries (Azerbaijan, Qatar, Libya?). The West is still banned by another set of, rather counterproductive, sanctions against Iran, which means that it cannot import oil or gas from there to meet the Russian shortfall. The markets are less 'irrational' than they are motivated by profit and profit is based in reality. The current intentional politics practiced by the West against Russia express very little 'reality' and much ideology. Russia has a huge surplus of foreign capital – and can protect itself from the economic storm. The EU is still in austerity mode and failing to recover; even Germany, the Union's strongest economy, is hurting with recent growth rates noted at -0.2%. Markets respond to realpolitik and the economic wars launched by Washington and Brussels against Moscow will hurt the markets of the former rather than the latter.

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**Western agricultural and potash sectors suffers more from anti-Russia sanctions**

# than Russia itself

✘ Russia has delivered a textbook response to the growing list of sanctions that the West and NATO countries have adopted, with more or less conviction, over its inevitable interventions in the Ukrainian civil war. Russia has banned food imports from several Western countries including Italy, Germany and Canada. It has also banned Western investment projects in the Russian agro-food sector just as Russian food tastes and consumption habits have been expanding to include a wide variety of products. From the Western perspective that Russia should modernize politically, the sanctions will have adverse effects, delaying that very process of modernization, forcing a resumption of cultural and political insularity. Russia will put planned projects on hold or cancel them outright, hurting Western companies in the process.

Western companies – especially German and Italian – have been providing the modern technologies and know-how to modernize the Russian agriculture and processing industry. Germany alone has invested over a billion Euros in Russian agribusiness, which have enabled Russia to vastly improve plant production, resuming its role as a primary exporter of wheat along with the USA, the EU and Argentina. The increase in the production of wheat and other crops has also allowed for improvements in poultry and pig production, which has raised demand for such minerals as potash and phosphate. Meanwhile, as late as 2013, several European small and medium enterprises in the agricultural sector had asked their EU representatives to significantly expand their corresponding commitments in Russia, facilitating ties further. The crisis and the Western (especially from the EU) promise to include Ukraine in NATO or even the EU have contributed greatly to the crisis. Not surprisingly, trade relations and problem-resolution mechanisms must be in place to build trust in trading partnerships and now both are in short supply. It will be

difficult, but the EU must pursue a more diplomatic line with Russia in order to avoid completely cutting political level discussions and opportunities to continue working in favor of Russia's agricultural and food industry modernization, which benefit western companies directly.

The Russian government has chosen to ban imports of several food products from the EU and the USA not only as a means of political pressure, but also to highlight their positive impact on the development of Russian agriculture and food industry. It is therefore in the mutual interest of all powers concerned that the Ukraine conflict does not escalate further.

The effects of the embargo imposed by Russia have already been felt. Entire containers of EU food products have been blocked and sent 'back to sender', while Russian importers are advised have been terminated several contracts for the shipment of fruit and vegetables. The list of banned products covers the entire range of diets and tastes including beef, pork, chicken, fish, seafood, milk and dairy products, fruits and vegetables from the EU, USA, Norway, Australia and Canada, with the exception of alcohol and children's products. It is a sharp brake on the increasing demand for EU products on the dinner tables of all countries that made up the former Soviet empire that had begun to appreciate such gastronomic delights as Parmigiano Reggiano and prosciutto, not to mention all manner of oranges, grapes and legumes. In the first quarter of 2014, Russian imports of EU food products had actually risen in the first quarter of 2014. Countries such as Italy, which are relying on exports to lead the path out of the economic crisis, consider agriculture as a very important economic sector. It is estimated that Italy alone will lose over 200 million Euros in lost agri-business with Russia alone. Now we are facing a worrying escalation of the conflict with a trade war, which confirms the strategic importance of food especially during periods of economic recession. Russian leaders are master chess players and they have not chosen to

target food imports casually; they are very aware that agriculture is a primary pillar of growth for the European Union at a time of economic stagnation. Indeed, worldwide agricultural exports from Italy alone grew by 5 percent in 2013, reaching a record high value of 34 billion Euros, even as other sectors suffered.

As for Canada, while Prime Minister Harper engages in smug tirades against Russia, the sanctions and growing trade 'Cold War' may have consequences for the potash sector. Russia is part of the block of BRICS (Brazil, Russia, India, China and South Africa) countries, all of which have high potash and phosphate demand driven by their respective agriculture and food sectors. As western borders close in response to decisions in Bruxelles, Ottawa or Washington doors open to Russia's East and South. In potash terms, the world's largest potash producer Uralkali expects to be able to implement price increases by as much as 10% in the 2015 supply contracts with China. Uralkali is considered the clock for the fertilizer industry, which also includes Canada's Potash Corp of course.

The People's Republic of China is the world's largest consumer of potash and now pays Uralkali USD\$ 305/ton. Technically, this should be good news for Potash Corp and its CANPOTEX partners (Mosaic, Agrium), but China may well decide to increase its share of supply from Russia in solidarity over Western sanctions. In turn, Russia will replace Western imports with meat and dairy products from Brazil, Argentina, Ecuador, Chile and Uruguay, which are more than willing to step up to the opportunity. China has also indicated that it can increase the supply of fruits and vegetables to Russia. Uralkali also has close ties to India and if it should see it advantageous, it could slash potash prices below contract rates, revamping the 'quantity' model by increasing production and undercutting CANPOTEX. Moreover, Russia may decide to trade in local currency when dealing with other BRICS members, further damaging the potash market.

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# 30 million jobs in Europe depend on access to raw materials



World primary supply of the 54 candidate raw materials



World primary supply of the 20 critical raw materials

The European Union (EU) has published a document, the Raw Materials Initiative, outlining the importance of raw materials to its economy in view of rising concern over access to specific

raw materials needed to match current and future technological development. The EU considers the availability and supply of raw materials to be an important risk to Europe's economy.

About 30 million jobs in Europe depend on access to raw materials. The High Level Steering Group of the European Innovation Partnership (EIP) on raw materials has presented a strategic plan to ensure a stable supply of raw materials. The EIP aims to reduce dependence on imports of raw materials, improving the conditions of supply from within Europe itself and from countries beyond the Union. The EIP have considered both resource efficiency and access to reliable alternative sources, given the extent of the risk.

The development of countries like China, Brazil, India, Turkey, Mexico, or Indonesia has generated a shift in the global economic map thanks to the rise of so called "South-South" cooperation, highlighted by the need to extend the concept of the G8 to the G20 – that is to say between developing countries rather than simply between the rich North and the poorer South. The institutionalization of the BRICS (Brazil, Russia, India, China and South Africa) is perhaps the most startling example of this phenomenon. Of course, Europe

and the United States remain pillars of global technology, trade and finance but they are no longer the sole or even main pillars as was the might have been the case in the 1950's or 60s. In the past two decades, in fact, the economic tides have substantially and permanently changed the international map of supply and demand for raw materials. Raw materials are essential.

In Europe, the construction, chemical, automotive, aerospace, machinery and equipment sectors – all evidently reliant on raw materials produce in excess of 1.4 trillion in value and create employment for some 30 million people: access to raw material is critical on multiple levels. Emerging G-20 or BRICS or aspiring BRICS are also trying to secure access to more raw materials. The race, as stated by the EU Commission caused a “tripling of metal prices between 2002 and 2008”. China, in particular, accounted for over 50% of the increase in global consumption of industrial metals between 2002 and 2005.

Beyond this overall increase in demand, changes in technology have given some natural resources a new strategic importance. For example, rare earths are now essential to many “green” technologies. Tantalum is widely used in the electronics industry. Cobalt is used in lithium ion batteries as is graphite; germanium is found in fiber optics while indium is used in photovoltaic cells. Indium is also needed in the growing field of haptic technology – technology related to the ‘sense of touch’ and frequent in aerospace, displays, video games, controls and a growing list of applications. Such minerals, their rarity, their uneven geographical distribution or concentration of their production chain represent a challenge to the increasing importance for global economies. The emphasis on resource security, will force Europe to shift to the forefront in the fields of raw materials even while mitigating the negative impact on the environment and society. The growing demand for unprocessed metals and the consequent



difficulties in access to raw materials are the foundation of the Strategic Implementation Plan (SIP – Strategic Implementation Plan). The challenge, should it succeed, will turn Europe into a world leader in the field of exploration, extraction, processing, recycling and substitution of raw materials by 2020.

How does the EU plan to achieve this? Research, development of new technologies , recovery and recycling of waste and identification of alternative materials , in line with the objectives of 'Horizon 2020', the EU's main instrument for funding research over the next seven years 2014-2020. Raw materials are the lifeblood sustaining the EU's industrial sector. At least 30 million jobs in Europe depend on access to raw materials and there has been an increase in demand for minerals and metals, accompanied by significant difficulties in the supply of certain raw materials, such as price volatility and market distortions – i.e. China's rare earth export restrictions. The EU has asked its companies, researchers and NGOs to promote technological innovation and non-technological innovation in the value chain of raw materials in Europe and beyond. The group of possible actions includes a wide range of initiatives such as new concepts and technologies for exploration efficient in terms of costs and identifying alternatives for critical raw materials.

The EU plans to launch up to ten specific pilot projects aimed at promoting the technologies for the production of primary and secondary raw materials as well as identifying alternatives for at least three applications of essential raw materials. In a separate aspect the SIP will also sponsor efforts to improve processing and waste management technology to make mining and recovering critical materials more socially and environmentally acceptable.

Image Source: <http://europa.eu>

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# Tin supply just four years away from crisis



To hear Germany's Federal Institute for Geosciences and Natural Resources (BGR) tell it, tin is not that big a deal. At the recent international tin conference in Penang, Malaysia, BGR's Dr. Harald Elsner made these points at the beginning of his presentation: tin is the least important metal

traded on the London Metal Exchange (arguable now that cobalt and molybdenum are traded there); it is the forgotten metal, not being included in the European Union's 2010 Critical Metal report; and it did not even make into the 2014 update of that list because of the high recycling rate in Europe.

Yes, but then fast-forward to the end of Elsner's paper and he notes that the tin market will probably stay in balance for the next two to three years. But then? "After that the tin market is going to change drastically. Reason: depletion of Indonesian resources," said Eisner.

We'll come back to his paper but he did make an extraordinary statement. "Tin is a typical industry but not a high-tech metal". Excuse me? Even in Germany, which is the fourth largest tin consumer in the world, 28% of the metal there goes into solder (for electronics) and 26% into chemicals. Yet other speakers at the Penang conference (organised by the International Tin Research Institute, by the way) pointed out that tin is going into a range of products from solder to LED lighting, that it and calcium elements are slowly replacing cadmium and antimony in lead-acid batteries, and that tin will

replace lead as a stabiliser in chemical plants.

A great analysis of the tin situation was presented by Yunnan Tin general manager Gao Wenxiang who cited U.S. Geological Survey figures showing that in 2000 the estimated size of the the world's tin reserves was 6.9 million tonnes; now they are thought to stand at 4.7 million tonnes. Tin production is also declining: it peaked at 350,000 tonnes in 2007 and in 2013 was down to 280,000 tonnes, the same as it had been in 2003. Gao said the problem has been a combination of resource depletion, too little investment in exploration and a failure to come up with sufficient numbers of new projects. The future painted by Yunnan Tin is not a rosy one. The company sees a global situation where we are facing a rapid decrease in the reserves and supply of high grade tin, and most mines experiencing falling grades. Much more money will have to be spent trying to expand resources at existing mining operations, lower grade reserves will need to be mined and recycling expanded. The largest mines in Peru and China will run out of high grade ore tin by 2017 and 2018 respectively, the Indonesians have dredged all the alluvial tin in shallow areas and now having to move into deeper sea areas. In 2012, Indonesia produced 28% of the world's tin; it accounted for 86% of alluvial tin output and 71% of the world's small-scale tin miners are Indonesian. When it comes to the world's tin smelters, 42 of the 100 are Indonesian (although Chinese refining capacity is about 50% greater than Indonesia's).

China's inability to remain reasonably self-sufficient is another complication. Figures presented to the conference by other speakers showed that China imported only 2.5% of its tin needs in 2006, but now relies on foreign mining to supply 18%. Most of that is now coming from Burma (Myanmar). Last year Burmese tin exports to China rose by 315%. But that may also be in danger: the largest mine there supplying China is expected to exhaust its higher grade tin within two years.

For the record, Elsner lists the probable new tin projects

that will get into production by 2020:

- Mount Garnet, Australia, owned by MGT Resources
- La Parilla Tailings in Spain, owned by London-listed W Resources Plc.
- Hemerdon, England, a tungsten-tin project owned by Australia's Wolf Minerals
- Achmmach, Morocco, owned by Australia's Kasbah Resources
- Bofedal II, Peru, Owned by Minsur
- Heemskirk, Australia, owned by Stellar Resources.

The problem is that only the last three on that list will be producing quantities of tin that will make significant impact on world supply.

This is why a chart presented by Elsner shows tin-in-concentrate production dropping from around 300,000 tonnes a year to 220,000 tonnes by 2020.

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## **Graphite Weekly Review: Juniors at the Forefront**

✘ The natural graphite space is now increasingly populated by junior players. Synthetic graphite, the most expensive by far (up to ten times as much at current rates) is derived from high temperature processes involving calcined petroleum coke and coal tar pitch. Synthetic graphite varieties are used in applications where purity is essential and until recently only this 'man made' variety was able to achieve 99% purity or higher. However, advancing graphite purification methods, and above all, a literal burst of interest in flake graphite has vastly contributed boosting the availability of highly pure natural graphite. As noted in an article published last

Friday, the Canadian province of Quebec is at the forefront of the emerging flake or crystalline graphite mining industry.

More and more companies are converging in this region, acquiring properties along the Grenville Geological province about three hours drive from Baie Comeau, Quebec. The region is mining friendly and offers excellent infrastructure and it is attracting more and more companies to its graphite deposits. The latest to arrive is Caribou King Resources Limited (TSXV: CKR), which announced, on February 25, having purchased three graphite properties all located along the Grenville belt. Caribou joins a host of other junior plays, all aiming for the most efficient way to extract and produce the highest purity graphite.

Graphite is slated to have an impact on technology no less significant than silicon from the 1950's to the present. It is not typical for juniors to be at the forefront of a new technological trend but thanks to the development of, and demand for, flake graphite driven by accelerating battery technology, fuel cells, alternative energy and especially graphene. Touted as the new wonder material, graphene has sometimes taken on science fiction properties; however, the combination of unprecedented purity levels, as shown by such companies as Focus Graphite (TSXV: FMS | OTCQX: FCSMF) and Zenyatta Ventures (TSXV: ZEN) – both of which have achieved above 99% purity levels – suggests the future is upon us.

The year 2013 started with the announcement that the EU would invest over a billion dollars during the course of the year in graphene research. Last week, a German industrial alliance, meanwhile, launched an even more vociferous appeal to ensure access to a handful of critical resources; flake graphite is one of these. The German government has been urged to find a solution and Chancellor Angela Merkel hinted she may appoint coordinator to “adjust the best interests of the industries strategic defense technology and security, helping to ensure the supply of raw materials.” Germany’s defense goals, has

urged the 'industrial alliance' should also be organized in such a way as to prioritize "security and access to natural resources".

The context of this evolution of defense strategy is the intensification of the struggle for raw materials, especially with China. Alliance leader, Dierk Paskert, expressed discomfort at the fact that "China consumes nearly 40 percent of all raw materials while and their needs continue to increase drastically". In a sense, the EU's decision to sponsor graphene research to the tune of 1 billion Euros reflects such concerns. The nature of research itself, uncertain in its results, shows to the extent of graphene's importance. The EU has been forced into acting courageously and graphene was chosen in a competition for funds that included a final selection round of six major projects. Graphene research has been bursting with ideas and discoveries but Europe had allowed itself to fall behind.

The average market performance of ProEdgeWire graphite sponsors showed an overall drop of 4.46%. Despite announcing a completion of metallurgical tests showing graphite recoveries of over 96% at the Lac Gueret graphite property, Mason Graphite Inc. (TSXV: LLG) dropped 6.9%. For the second week in a row, Zenyatta Ventures was the outperformer, adding 10.77% to its value, after a previous stellar week.

