



The Integrated Antimony Company

MMTA Presentation, Toronto
Emin Eyi, Managing Director

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Strategy

To become an integrated and technology lead manufacturer to western economy consumers of antimony, utilising the technically and environmentally advanced antimony roasting process it has developed in the facility sited in Oman, with raw material supplied from its upstream resource projects in Turkey & Canada and from third party producers. To further utilise this core technology to develop it for use in roasting refractory gold concentrates.



Key Milestones

Oman Antimony Roaster Project (OAR) in Sohar Freezone

- **October 2013** MOU signed with an Omani Sovereign Fund and a Dubai based Infrastructure Group to establish a regional antimony roaster project. Due Diligence commences by joint venture partners and their consultants.
- **December 2013** Report published on the preliminary application of clean roasting technology for the treatment of refractory sulphide gold concentrates using the core technology developed for antimony roasting.
- **April 2014** Shareholder Agreements signed with joint venture partners to establish Strategic & Precious Metals Processing LLC (SPMP), which is 40% owned by a Sovereign Fund (Oman Investment Fund), 40% with TSTR and 20% with Castell Investments, part of a Dubai based infrastructure group (Dutco). Funding package is for US\$70m of which US\$40m will be a bank facility, US\$10m a mezzanine loan from OIF and US\$20m in equity amongst the partners.
- **July 2014** SPMP founded in Sohar Freezone, secured 22 hectare site plus option on further 77 ha. No tax, low and local energy sources and good infrastructure site in a metals processing hub.
- **December 2014** SPMP received a 'No Objection Letter' for Waste Management with respect to OAR
- **February 2015** SPMP receives a Facility Offer Letter from Bank Nizwa for up to US\$40m loan for OAR project
- **February 2015** SPMP receives Provisional Environmental Permit for OAR enabling the plant to proceed to construction
- **April 2015** SPMP receives third party engineering report confirming process, capital and operating costs for the OAR. Capex of main plant estimated to be US\$62m (not including a pilot plant).
- **April 2015** SPMP appoints Traxys SA as its Nominated Trading Partner to provide concentrate feed, working capital funding and antimony product offtake services to the OAR



Sohar Port - Oman





Sohar Port

JV with Port Authority of Rotterdam



Photo courtesy of Sohar Port Special Projects divisions.



Oil Refinery, Petrochemicals, Container Port, Bulk, Minerals



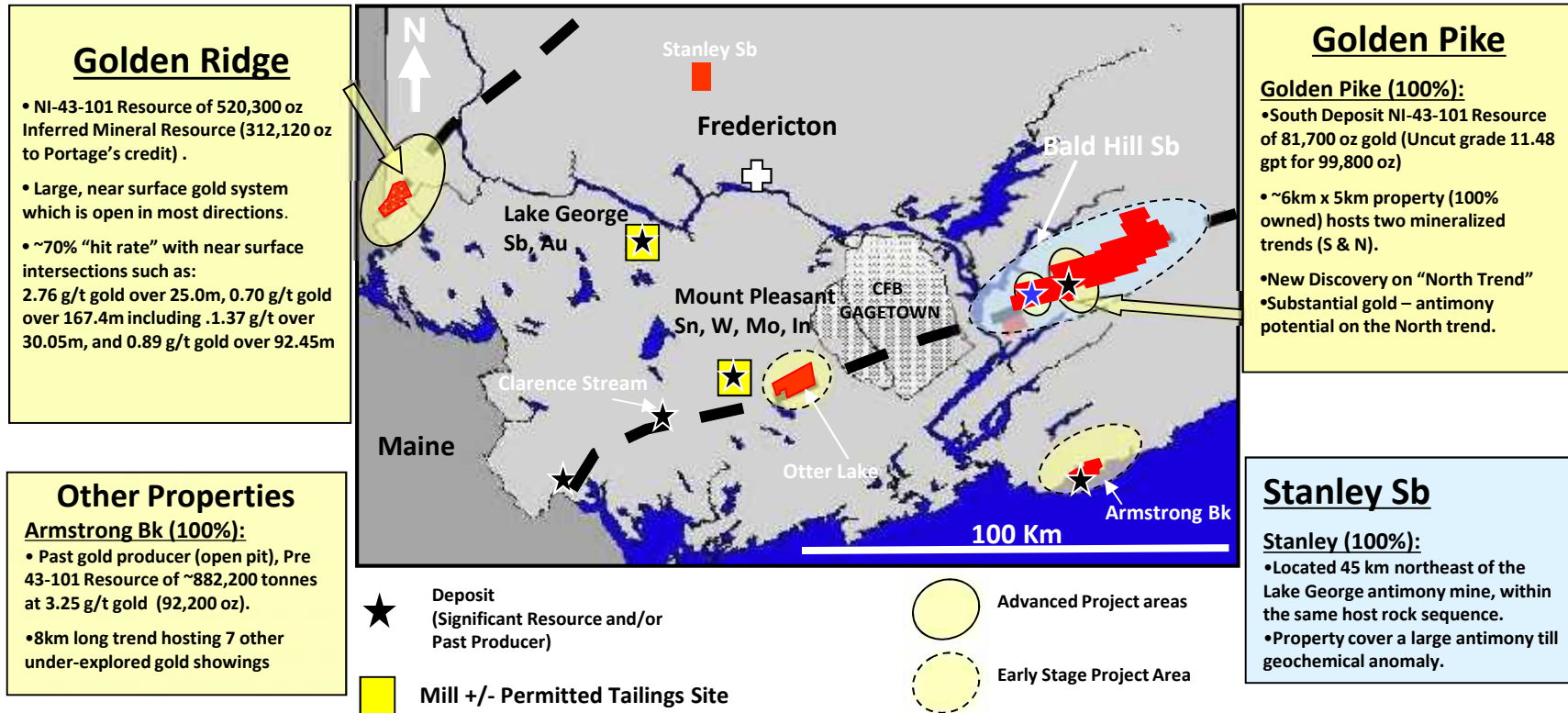


Revival of 'clean roasting'





Project Locations - Canada



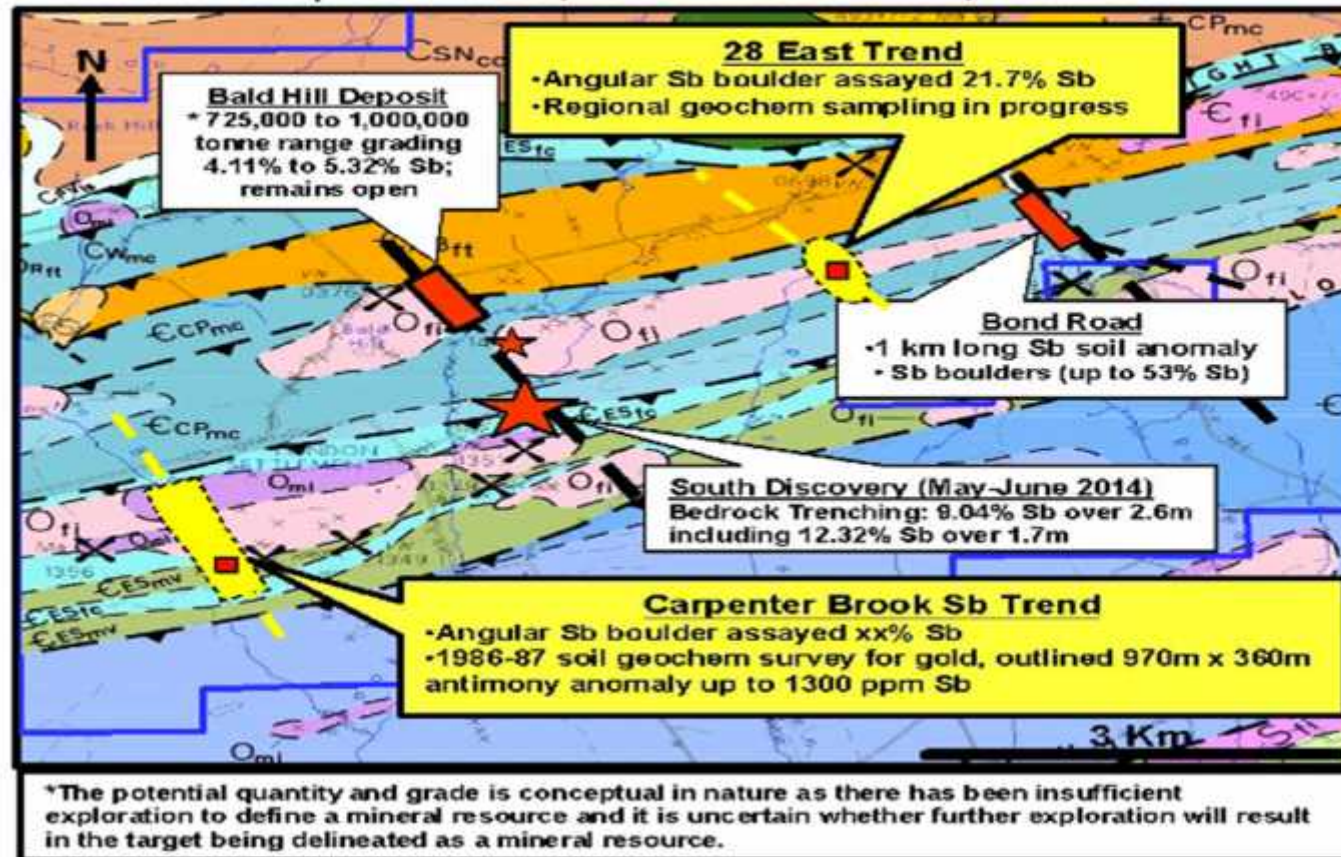
Bald Hill Antimony

Bald Hill Sb (100%):

- 35 km long land package with "Mining Camp Scale" potential.
- Bald Hill Deposit - initial potential tonnage and grade in the 725,000 to 1,000,000 tonne range grading 4.11% to 5.32% Sb.
- Deposit trend defined over a 2.2km length; remains open in all directions for expansion
- Bond Road target area located 4km east of Bald Hill represents a new mineralized trend. Strong Sb soil anomaly with boulders returned 5% to 53% Sb. Related to NW structure similar to the Bald Hill deposit.

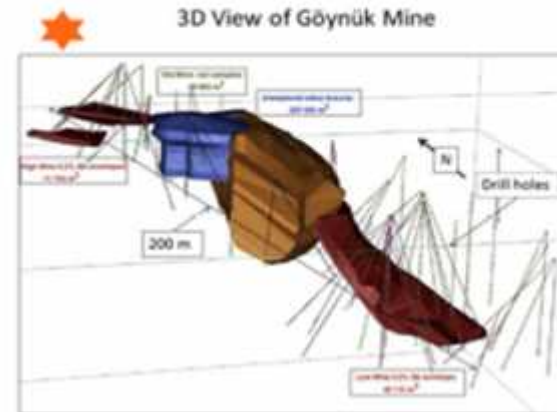
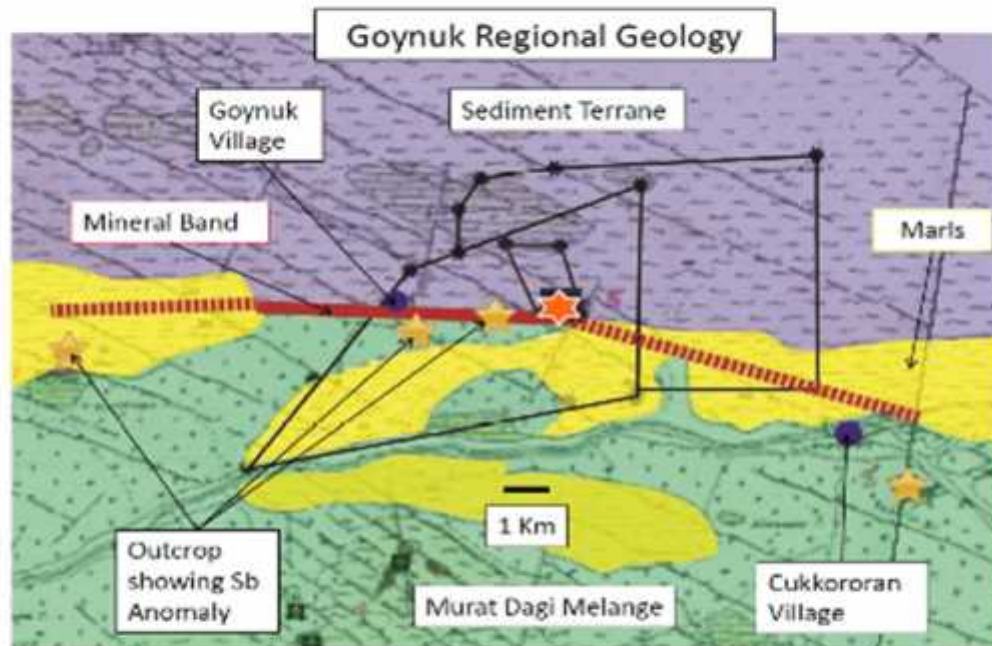
5th Sb prospective trends identified within 4km of the original Bald Hill Deposit

Bald Hill Deposit Area, New Brunswick, Canada





GÖYNÜK PROJECT - TURKEY

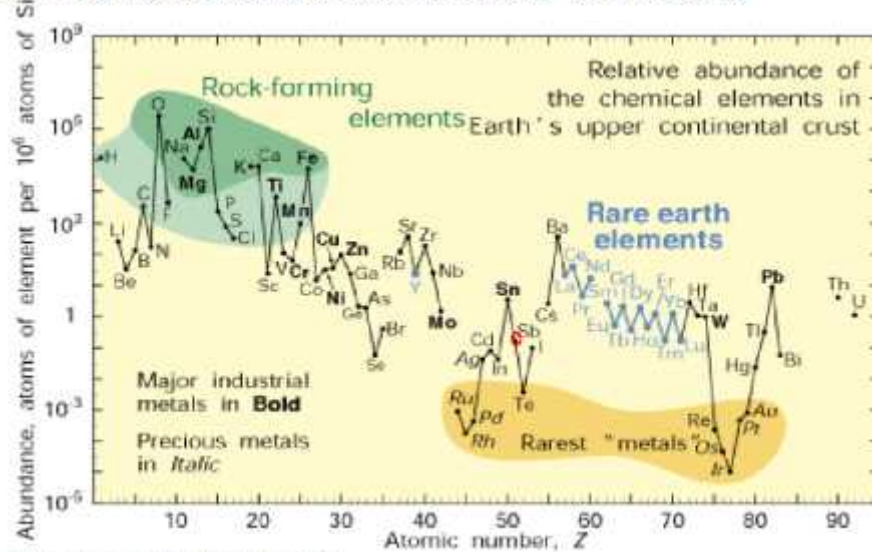


- 350,000t at 1-3% Sb exploration target
- Dumps 75,000t at 2.25% Sb
- Additional 600,000t target in 200m strike
- 2 other targets along 5km strike fault zone
- Mining License & Exploration Permit 1400ha
- 14,400 tpa processing plant permission
- Water, electricity and road to site
- 9 other known Sb neighboring deposits



Antimony – ‘critical metal’

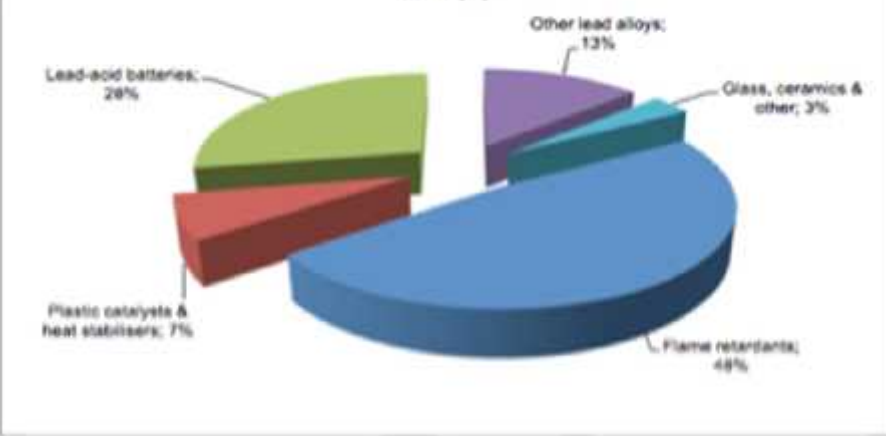
Antimony crustal abundance (chemical element is Sb – central of chart)



(Source: US Geological Survey 2002)

Scarce as heaviest rare earths. It has but broadly use as synthesizer in flame retardants, chemical and metallurgical additives, a global and ubiquitous demand profile driven by safety regulation and product innovation. Top 3 critical metal on most lists, but is significantly more scarce than its peers, i.e.. 5 times more scarce than tungsten yet only quarter of the price. China dominates the antimony industry with 90% of world metal production due to having almost all the smelter capacity. However, having been near c.85% of world production in 2009 is now down to c.40% in 2014.

Figure 4: World: Estimated consumption of antimony in non-metallurgical end-uses, 2012 (%)



British Geological Survey

Risk list 2012 – Current supply risk index for chemical elements or element groups which are of economic value

Element or element group	Symbol	Relative supply risk index	Leading producer	Top reserve holder
rare earth elements	REE	9.5	China	China
tungsten	W	9.5	China	China
antimony	Sb	9.2	China	China
bismuth	Bi	9.0	China	China
molybdenum	Mo	8.5	China	China
strontium	Sr	8.5	China	China
mercury	Hg	8.5	China	Mexico
barium	Ba	8.1	China	China
carbon (graphite)	C	8.1	China	China
beryllium	Be	8.0	USA	Unknown
germanium	Ge	8.0	China	Unknown
niobium	Nb	7.5	Brazil	Brazil
platinum group elements	PGE	7.5	South Africa	South Africa

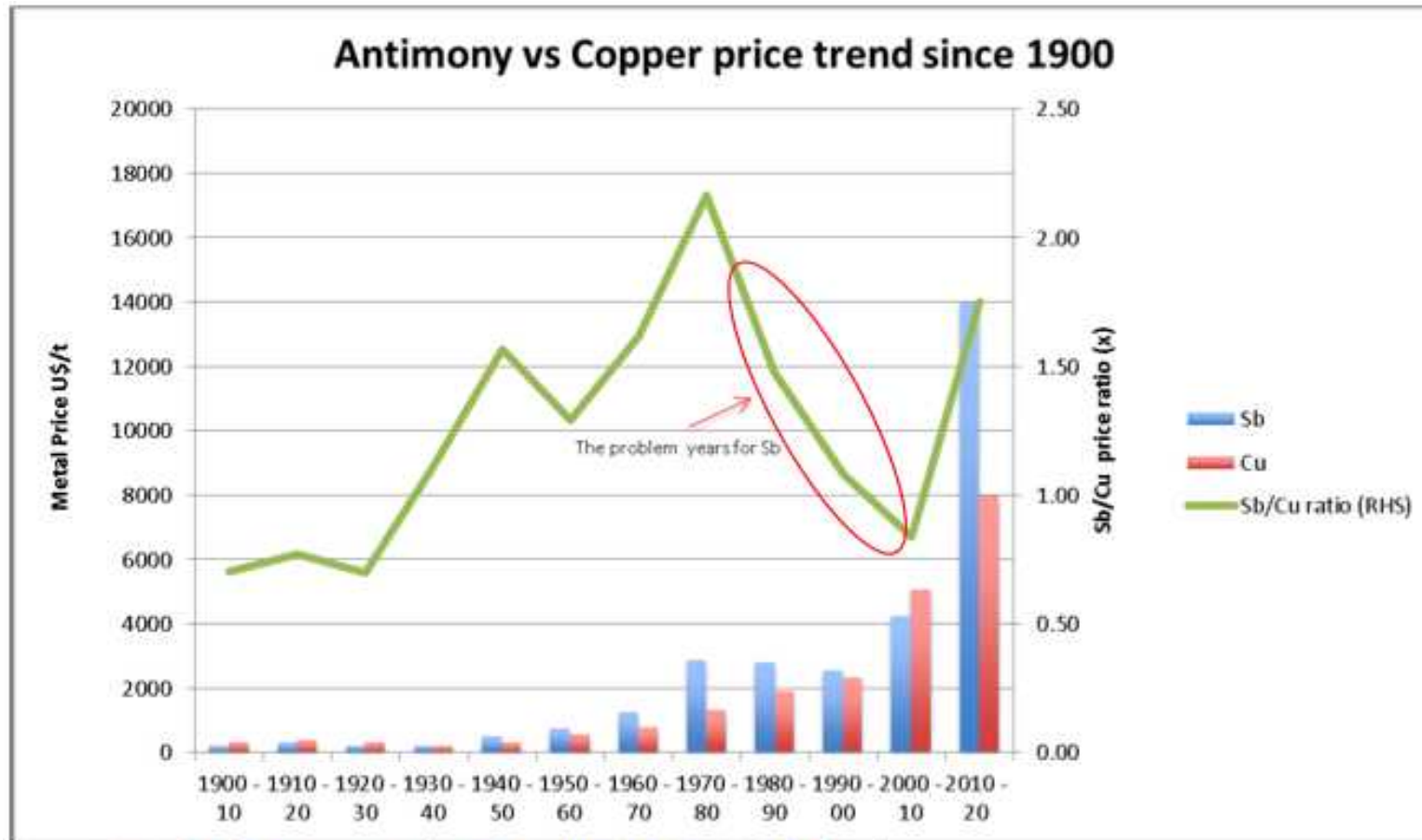


A long history

- First discovered in 750 BC by Persian polymath Jābir ibn Hayyān also accredited for the first experiment on aqueous dissolution of gold.
- Stibnite first used as Khol as dark sulphide powder form of stibnite for eye make-up over 3000 BC.
- “Anti-monos” - never found alone (geologists friend, metallurgists nightmare)
- Price in 1897 set by United Kingdom the largest convertor, Cookson grade \$7.5 cents per lb (\$165/t). First broke U\$1,000/t price band in 1950-53 and then \$10,000/t in 2010. However, gold price in 1897 was \$19/oz. So in 1897 one would need 8.7 ounces to buy a tonne of antimony, today the figure is 7.0 ounces of gold.



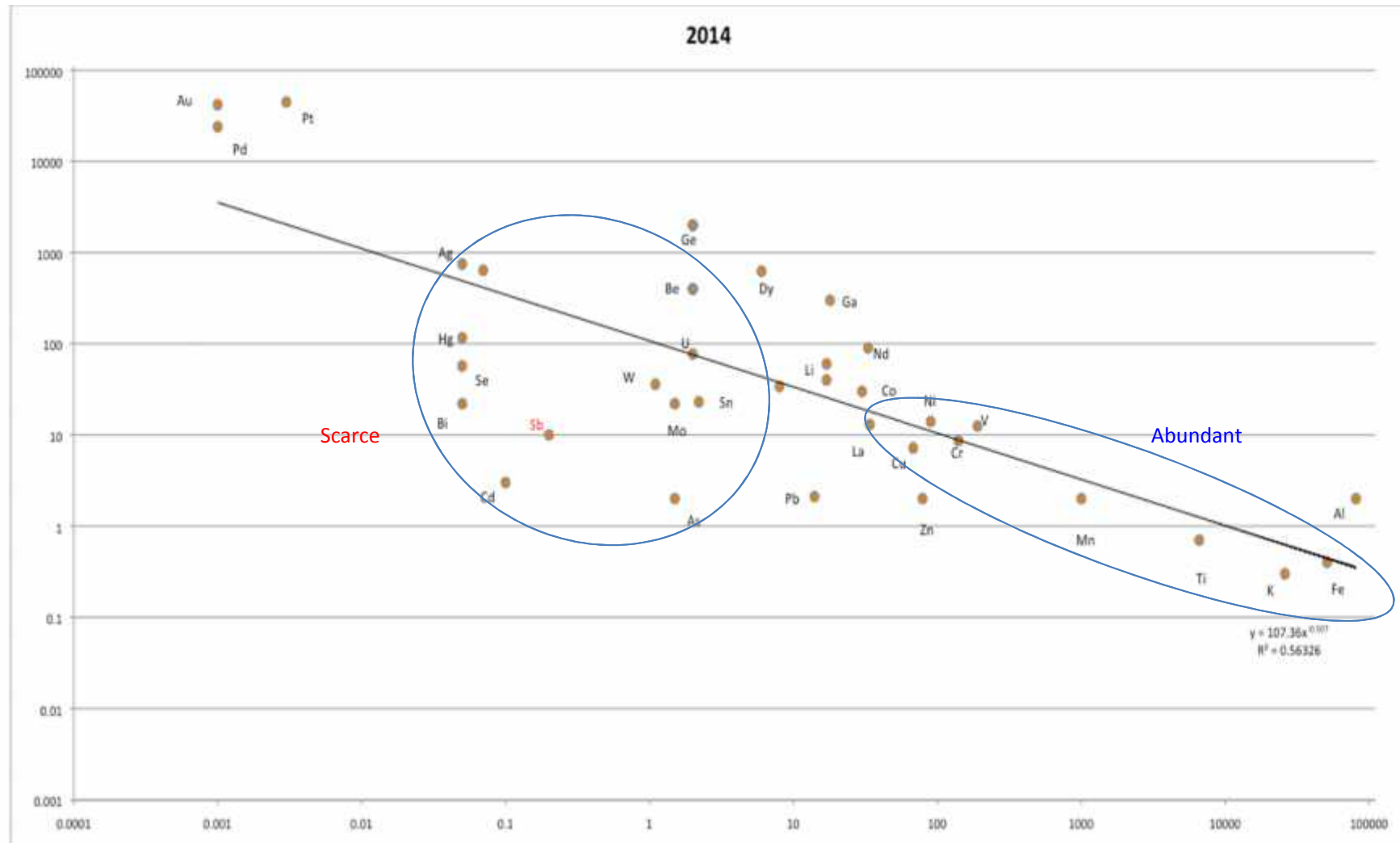
Relative Historic Pricing



(Source US Geological Survey commodity prices in the US 1990 – 2010 data base)



Abundance vs Scarcity





Abundance & Utility

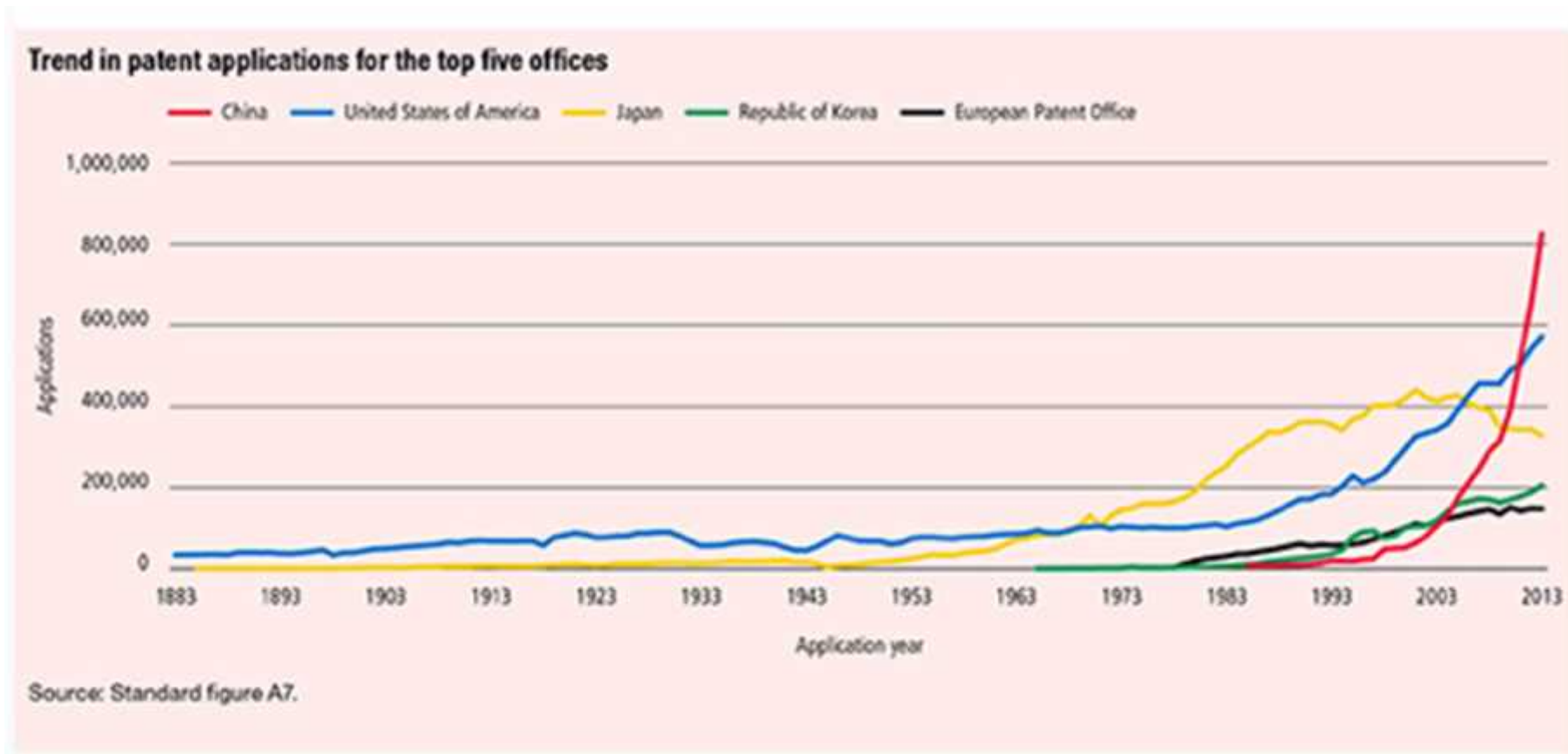
- Abundant minerals - prices vs abundance correlate well
Often multi-disciplinary utility
- Scare minerals – prices vs abundance do not correlate – widely dispersed segment of mineral pricing
Often not as multi-disciplinary utility

Tremendous increase in the search for new uses for all 'reactive metals' as evidenced by a surge in new patents worldwide and increased R&D, often leading to need (utility) for new materials.



Global Patent Filings

2.57m 2013 +9% yoy
“Knowledge Renaissance”





The Beginnings of Source Audit

- Philips Conflict Minerals Report June 2014



“Value nodes” – growth in net assets past 3 years selected group



US Mineral Security Act April 2015

- Establishment of a Critical Metals List
- Critical defined as ‘potential supply restrictions’ and ‘importance in use’
- List within a year of Act enforcement
- USGS (US Geological Survey) tasked to identify & quantify critical mineral resources throughout the US within 4 years
- Domestic mine and manufacturing projects to be considered as ‘infrastructure projects’ as per President Obama 2012 fast track strategic project developments
- Recycling, alternatives
- Education ‘50% of engineers within a 10-15 years of retirement’

In reality, US is a large and resource rich country. It does not lack many resources, much just have been idled for decades due to a bias not to develop and import. What is lacking are modern and environmentally progressive processing and facilities and the next generation of trained and experienced engineers to build and operate them.



Antimonyworld.com

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Total projects: 139 Africa: 4 Asia: 61 Australia: 9 Europe: 28 Middle East: 6 North America: 24 South America: 9

country Location Deposit metals search



Antimony World has been compiled by Tri-Star Resources plc, as a guide to global occurrences of antimony. As antimony is associated with large volcanic belts which form a large part of the earth's surface, antimony occurrence is common despite its reportedly low crustal abundance. There are numerous projects with antimony associated with gold or other minerals or gold and other minerals associated with antimony depending on your



Benchmarking mine costs

Small scale U/G benchmark cash costs per tonne ore
The two largest cost contributors are labour & fuel
Tri-Star Resources benchmarking results 2014

Mine & processing industry (in US\$)	Diesel Costs	Avg Sb grades (e)	Implied Cash cost/t	
China	U\$ 6.30 / hr	U\$1.29/lt	1.4% (used to be 4%)	U\$80/-120/t
Canada	U\$35.0 / hr	U\$1.04/lt	3.0% (2% - 5%)	U\$120/t – 150/t
Australia	U\$ 48.0 / hr	U\$1.29/lt	2.0% (but with Au credits)	U\$180/t - 250/t

Labour productivity China vs Canada benchmark is 6x per tonne of ore, normalising China labour rates to nearer U\$36 / hr. Labour is no longer a cost advantage.

Indicates major need for small scale mining mechanisation and productivity improvements, or the coming on stream of lower cost, higher grade deposits.

Other emerging market producers are benchmarked around the U\$80/t level in 2014, down to US\$ 65/t 2015

China is not a low cost producer in most other minerals. For example, often in the third quartile of world cost curve

domestic copper, iron ore and coal production. As a major Sb miner, its cash costs are challenged by rising labour rates, high energy costs and declining grades.



Anti-monos

Future sources are linked with gold

- Refractory / gold trapped in sulphide lattice structures
- 30% - 50% of world gold resources in sulphide form
- Key minerals involved are pyrite, arsenopyrites and stibnites
- Pre-treatment required to remove sulphur, expose the gold contact before cyanide leaching
- Major source of stibnite in future as low / moderate levels often associated in sulphide assemblages
- Of the top 40 gold discoveries since 2008, 16 are in primary sulphides and further 13 in mixed oxides & sulphides at depth style orebodies. Important regions include Kazakhstan (+70% refractory), FSU, S.America, Nevada, Alaska. Widely spread
- Antimony is a 'torch' for exploration geologists but a 'nightmare' for an extraction metallurgist
- Introduction to Middle East Refractory Gold (MERG) Phase II

Introduction to TriStar Phase II

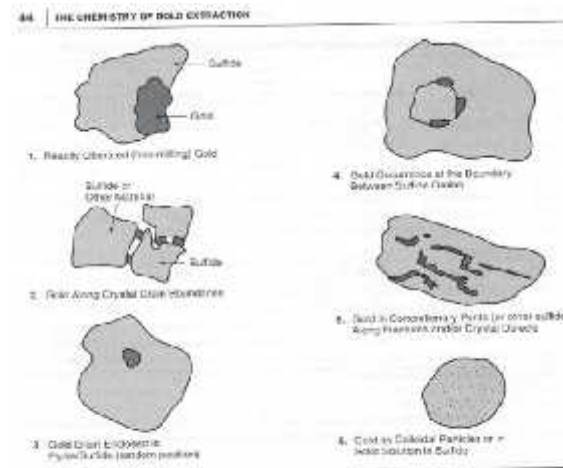
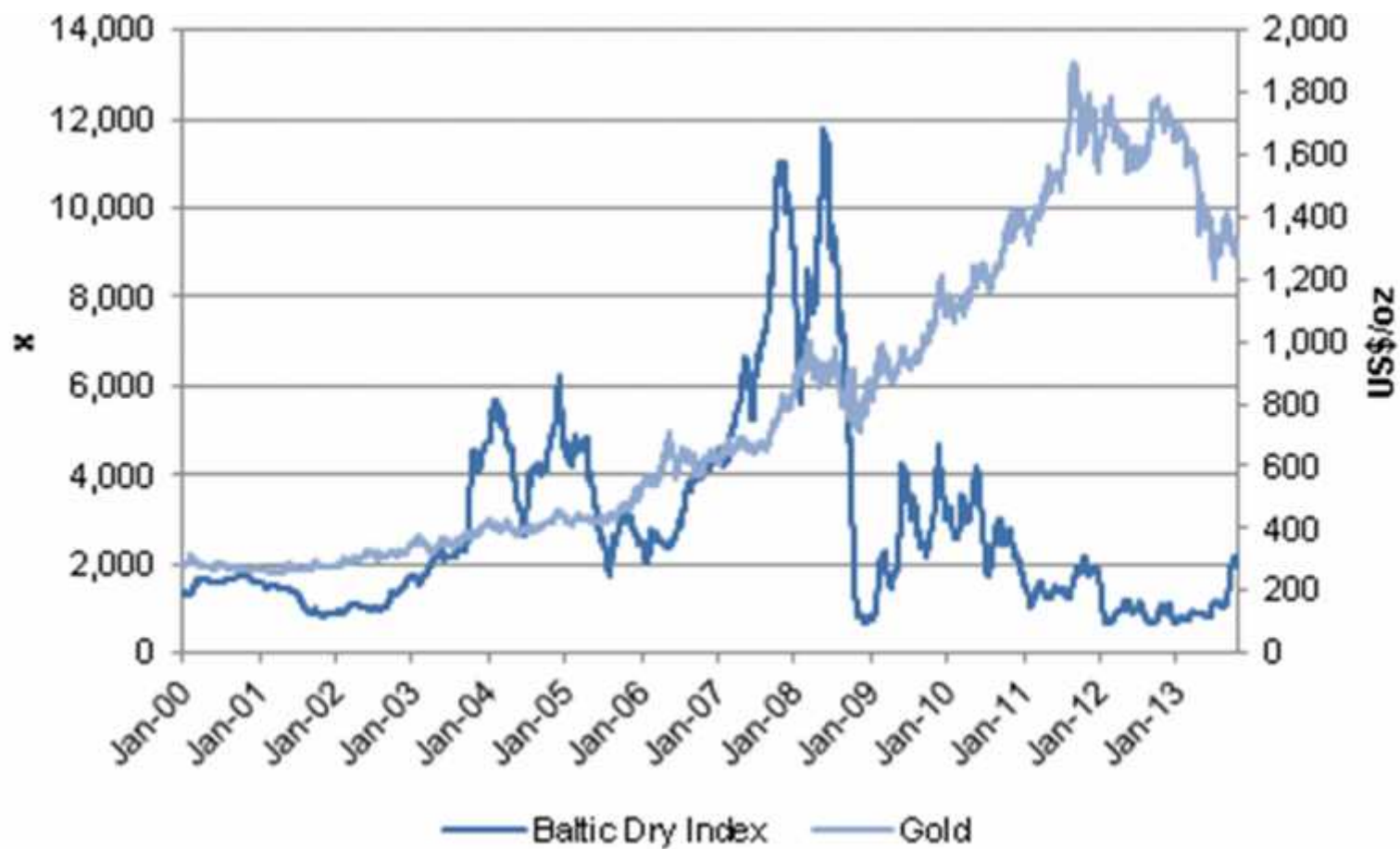


FIGURE 2.13 Schematic representation of types of gold associations with sulfide minerals (illustrative only)



Refractory Gold - why now





Using the antimony rotary roasting technology to treat refractory gold concentrates

Preliminary Study by GBM on a 500,000 tpa Refractory Gold plant located next to OAR, treating sulphide gold concentrates. Capex \$342m includes working capital & contingencies. Underlying project capex cost \$250m. Plant design on 35gpt feed producing 500,000 ounces per annum after recoveries. Indications are of real commercial viability. (Dec 2013 input prices).

Internal benchmark work with known POX plants showed ORGR project to be half the capex per ounce of capacity and less than half the opex per ounce than POX. Business model is to merchant treat mid to small producers of sulphide gold concentrates and help unlock stranded ounces in large projects.

Economic Performance

Parameter	Value	Unit
Life of Plant	20.00	years
Price	1300	USD/Oz gold
Purchase price	65.0 %	of contained gold
Revenue	1374	USD/t feed
	1357	USD/Oz Gold
OPEX	118.2	USD/t feed
	116.7	USD/Oz Gold
Cost of Purchase and Sales	1001	USD/t feed
	988	USD/Oz Gold
Margin	255.2	USD/t feed
	252.0	USD/Oz Gold
Payback Period	4.18	years
Discounted Payback period	4.98	years
IRR	31.1%	
NPV	531 867 486	USD

IRR %		Grade (g/t)							
		25	30	35	40	45	50	55	60
Concentrate purchase price % of contained gold	55%	30%	42%	49%	56%	62%	68%	76%	82%
	60%	27%	34%	40%	46%	52%	58%	63%	68%
	65%	20%	26%	31%	36%	41%	46%	50%	54%
	70%	13%	17%	22%	26%	30%	34%	37%	41%
	75%	4%	8%	12%	15%	18%	21%	24%	27%
	80%	-10%	-5%	-1%	2%	5%	7%	8%	12%
NPV USD M		Grade (g/t)							
		25	30	35	40	45	50	55	60
Concentrate purchase price % of contained gold	55%	579.2	799.9	1020.6	1241.3	1462.0	1682.7	1903.4	2124.1
	60%	404.7	590.5	776.2	962.0	1147.8	1333.6	1519.3	1705.1
	65%	230.1	381.0	531.9	682.7	833.6	984.5	1135.3	1286.2
	70%	55.5	171.8	287.5	403.1	518.6	634.1	749.6	865.1
	75%	-124.7	-40.1	42.9	124.2	205.2	286.3	367.3	448.4
	80%	-317.4	-264.3	-211.4	-158.5	-105.5	-52.5	1.3	53.9