GLENCORE

The Realities of the Nickel Market

November 2013

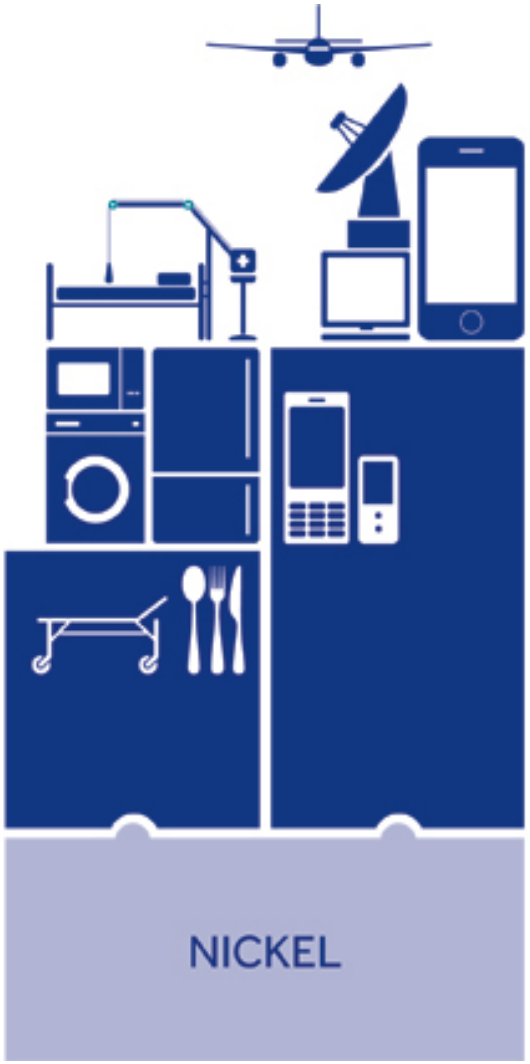
Nickel overview

Top three integrated nickel producer

- Production of 139kt mined nickel rising towards 200kt by 2015
- 8 mines, 4 smelters and 2 refineries; operations and assets in 7 countries
- A unique suite of sulphide and laterite properties, and operations covering the full technical spectrum (HPAL, heap leach, chlorine leach, pyrometallurgical, etc.)
- One of the world's largest recyclers and processors of nickel and cobalt bearing materials
- Future production growth benefits from higher nickel volumes of low total cash cost production from Koniambo and Raglan; ensuring business robust even at current prices
- Our resource base exceeds 20 years on the current measured and indicated resource; exploration on-going specifically in Sudbury and at Raglan

A leading trader of nickel

- 2012 pre-merger marketed nickel volumes of more than 230kt; nickel a very segmented market and Glencore trades a wide range of nickel products from nickel ore through to high purity (99.99%+) nickel
- Business headquarters in Baar, Switzerland with a centralised decision making process supported by a global network of employees ensuring real-time, effective information and unparalleled responsiveness
- Effective price risk and credit risk management tools embedded in our trading business ensuring our commercial business 'hedged' and counterparty risk proactively managed



Sustainable Development - integral to our business

SD Vision

- Create a better future for generations to come while meeting the needs of stakeholders today

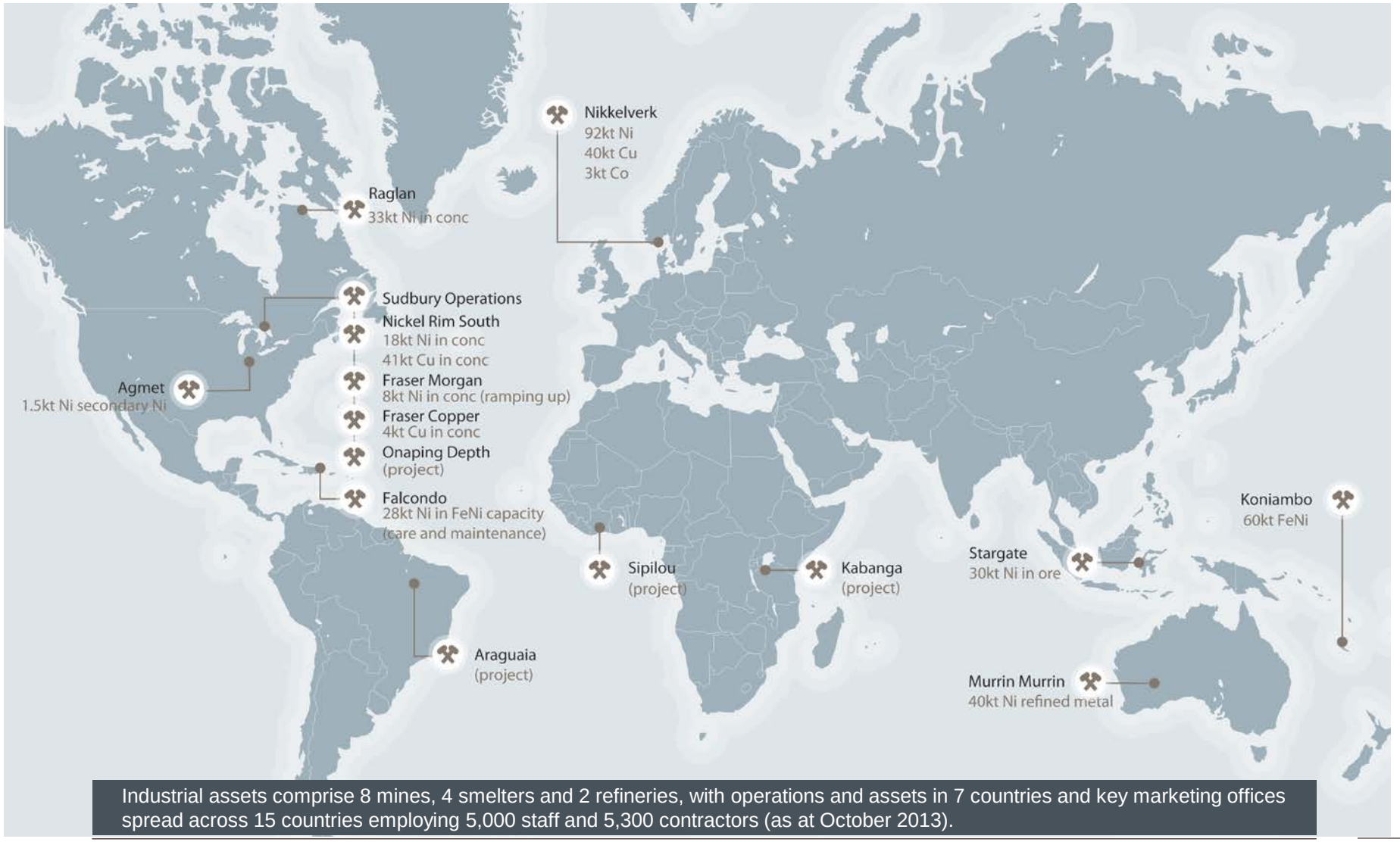
Strategic Objectives

- Zero Harm in Health and Safety
- Proactive Stakeholder Engagement
- Demonstrate Environmental Stewardship
- Social Responsibility

Enabling Objectives

- Integrated Sustainable Development Standards
- Leadership and Empowered People
- Hazard Management
- Robust Assurance and Reporting

Nickel assets

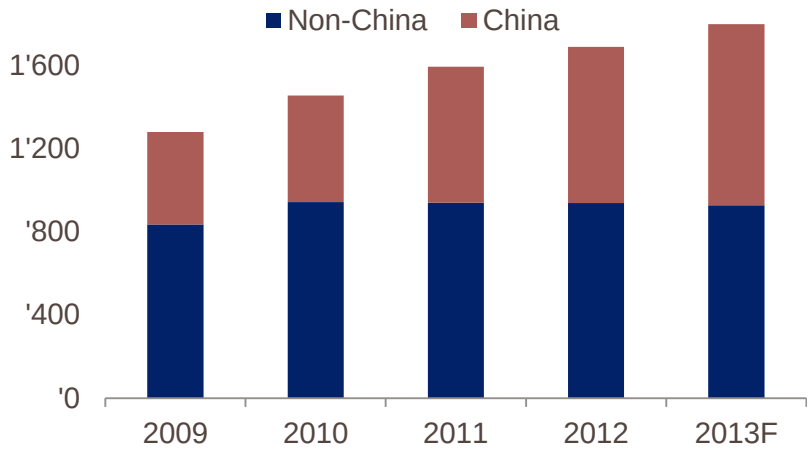


Industrial assets comprise 8 mines, 4 smelters and 2 refineries, with operations and assets in 7 countries and key marketing offices spread across 15 countries employing 5,000 staff and 5,300 contractors (as at October 2013).

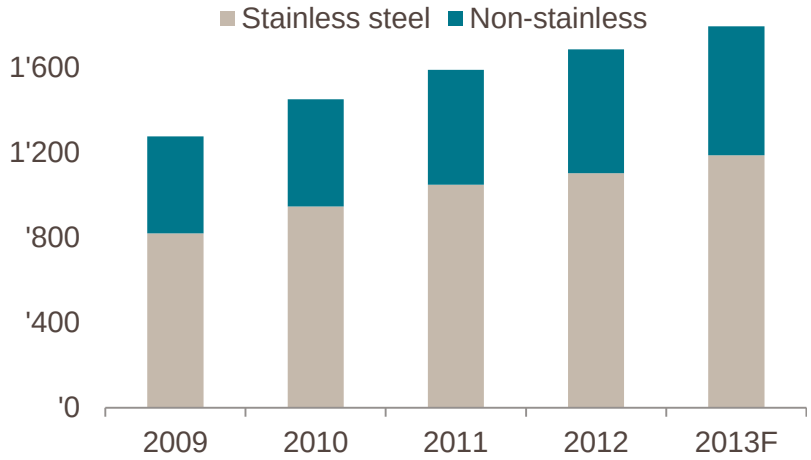
Healthy nickel demand growth to date

- Over the period 2009 – 2013, global nickel demand increased 8.9% p.a.
- Demand growth was firmly driven by Chinese consumption, which increased 18% p.a.
- Excluding China, nickel demand increased by 2.6% p.a. reflecting growth in most regions, including U.S. (up 5.6%), Japan (up 2.8%) and Europe (up 2.8%)
- By segment, nickel demand growth in stainless steel increased 9.7% p.a.
- Primary nickel usage in non-stainless steel applications increased by 7.3% p.a.

2009 - 2013 Primary Nickel Demand by Country (kt)



2009 - 2013 Primary Nickel Demand by Sector (kt)

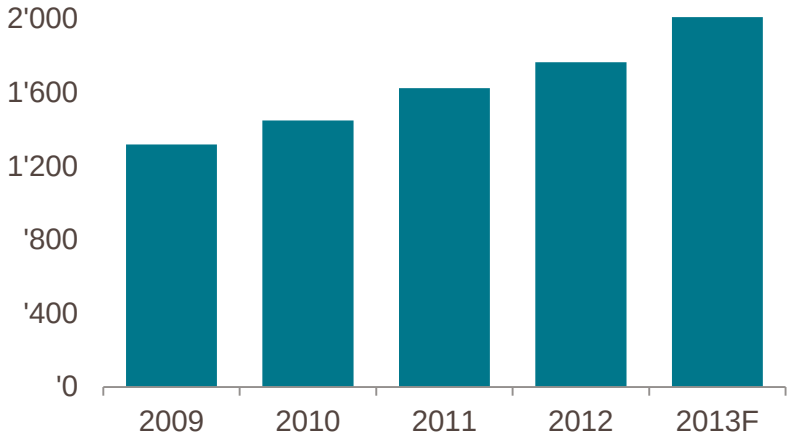


Source: Glencore

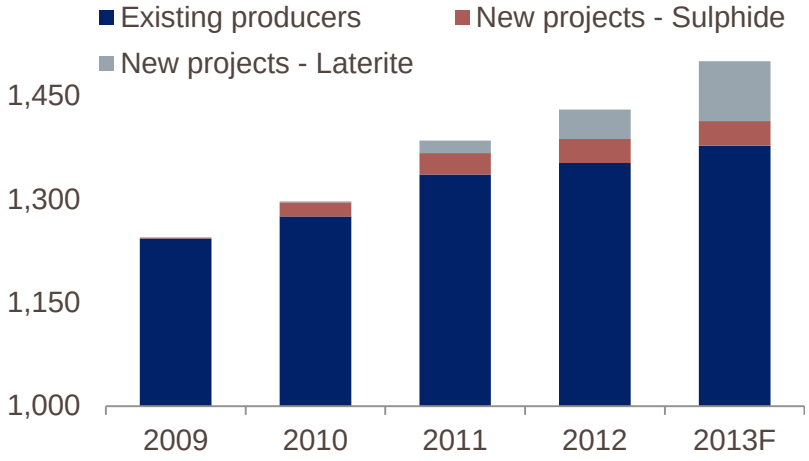
Surging nickel supply despite project delays

- From 2009 to 2013, global nickel supply growth is estimated at 11.1% p.a., reflecting a surge in nickel pig iron (NPI) output, coupled with increased output at existing producers and new projects
- Excluding NPI, nickel supply increased ca. 4.8% p.a. despite delays and poor ramp-up performance across the majority of greenfield projects
- Existing producers increased output 2.6% p.a. overall while output from new projects contributed an additional 121Kt in 2013
- New project contribution was delayed at Koniambo, VNC, Ambatovy, Onca Puma, Talvivaara, Barro Alto and Ramu; combined, these sites provided only ca. 94Kt in 2013 despite design capacity of 350Kt

2009 - 2013 Nickel Supply (kt)



2009 - 2013 Non-NPI Output Growth (Kt)



Source: Glencore

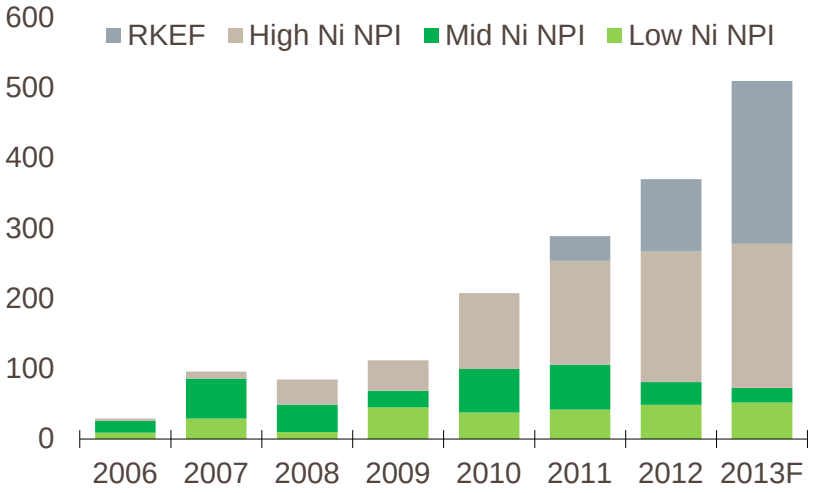
Development and rapid expansion of NPI

- NPI production totalled less than 30kt Ni in 2006 and was predominantly produced in blast furnaces (BF)
- Stainless mills were attracted to NPI as a source of relatively low priced Ni and Fe, therefore demand increased while supply initially remained limited
- This dynamic enabled NPI producers to achieve good margins, incentivising new capacity and increasing output
- In 2010-2011, a second NPI production route was developed using electric arc furnaces to produce a higher grade Ni product based on higher grade laterite ore sourced from Indonesia
- Since mid-2011, the share of mid grade NPI produced in BFs has declined, reflecting higher production costs for this process, coupled with an expansion in high grade NPI production from lower cost rotary kiln electric furnaces (RKEF), which are gradually dominating the NPI market
- We estimate Ni in NPI production at 370kt Ni in 2012 and project a further sizable increase in 2013 to ca. 510kt Ni in NPI

2006 - 2013 NPI Production by Grade (kt)

Year	Low	Mid	High		Total	Growth
			EAF	RKEF		
2006	9	17	3	-	29	-
2007	29	57	10	-	96	231%
2008	10	39	36	-	85	-11%
2009	45	24	43	-	112	32%
2010	38	62	108	-	208	86%
2011	42	64	148	35	289	39%
2012	49	32	186	103	370	28%
2013F	52	21	205	232	510	38%

2006 - 2013 NPI Production (kt)

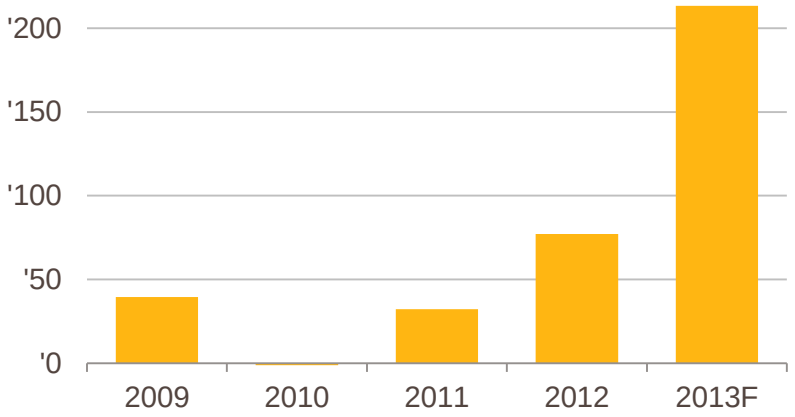


Source: Glencore

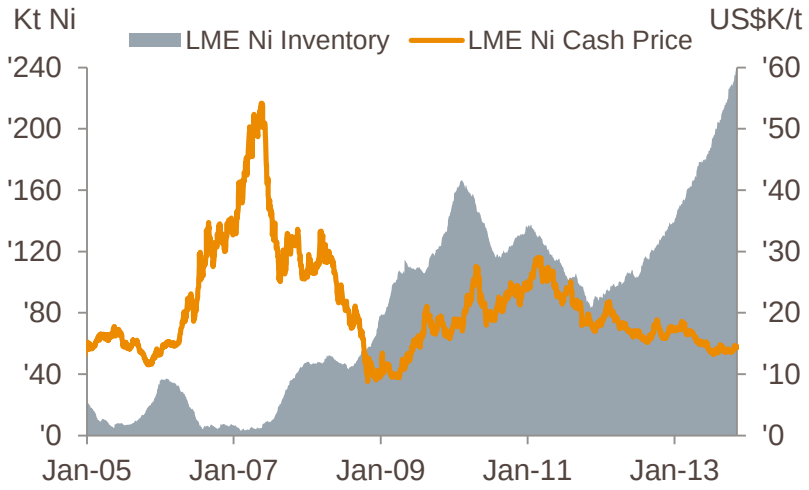
Excess supply generates hefty market surpluses

- Despite healthy demand growth, surging supply growth is resulting in significant and sustained market surpluses
- The nickel market has been heavily oversupplied for a number of years and very few real production cuts have taken place to date
- Material nickel unit surpluses sit on exchange and off exchange; LME stocks are currently at all-time highs and climbing (over 250Kt before year end?); nickel unit stocks in nickel ore also significant at ca. 30Mt wet ore equivalent to ca. 235Kt Ni
- Market contrasts significantly to the nickel space in 2006/2007 when there was no surplus, stocks were limited and LME prices increased to above US$50,000/t

2009 - 2013 Nickel market balance (kt)



2009 - 2013 LME NIckel Price and Inventory

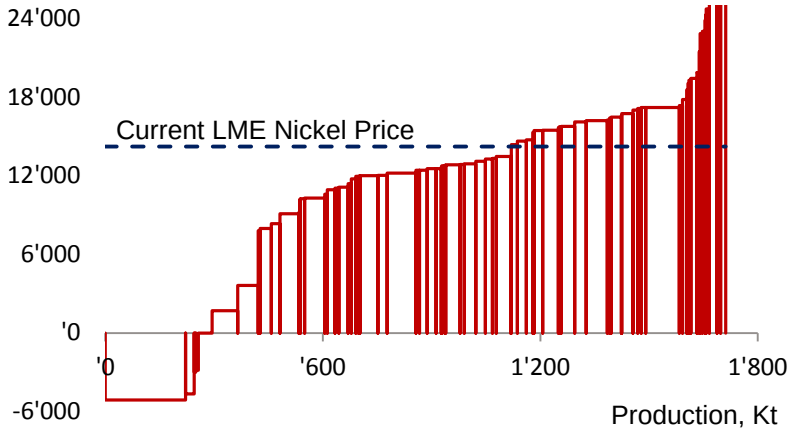


Source: Glencore, LME, Bloomberg

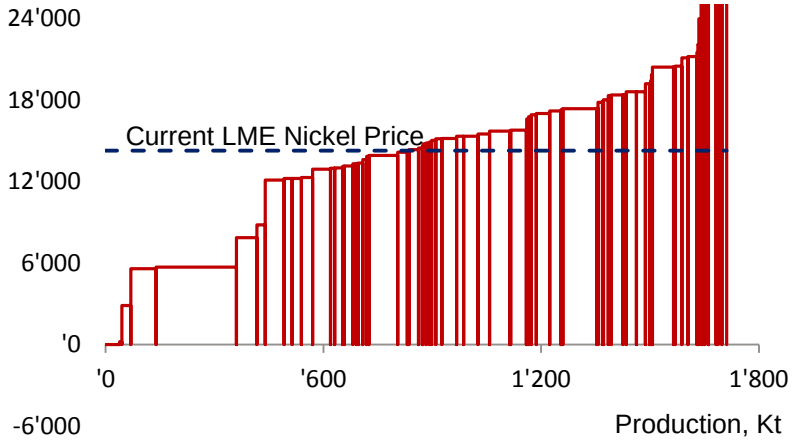
Market in oversupply and producers under price pressure

- Hefty market surpluses result in depressed nickel prices and producers in the upper quartiles of the cost curve are under severe price pressure
- Ca. 34% of global nickel production is now underwater on a C1 basis and ca. 50% on a total cash basis*
- However, producers are reluctant to act given persistent uncertainty around the proposed Indonesian export ban on raw materials envisaged for 2014 and the various social, political and economic costs of curtailing output
- New project commissioning and on-going ramp up adding to supply; whilst market does not need units, majors (Glencore included) committed to delivering this production as less value destructive than the alternative

C1 Cost Curve (US$/t) - 2013



Total Cash Curve* (US$/t) - 2013



Source: Wood Mackenzie, Glencore
**C3 – Depreciation + Sustaining Capital*

NPI not the highest cost production

	Blast Furnace (1.7%)	Blast Furnace (6%)	Shandong EAF	Inner Mongolia EAF	RKEF
Ni ore	19%	13%	24%	28%	29%
Ore Freight	17%	17%	15%	23%	16%
Anthracite	-	-	-	-	14%
Cokes	34%	30%	-	4%	-
Cokes Fine	8%	11%	13%	10%	3%
Lime	2%	2%	2%	-	1%
Fluorite	-	6%	-	-	-
Power cost	6%	4%	40%	24%	28%
Labor	4%	4%	2%	2%	2%
Others	10%	13%	6%	7%	7%
Cost (US$/t Ni)	20,300	14,500	13,900	13,000	12,600*
Sales Price (US$/t Ni)	22,700	13,900	13,900	13,900	13,900

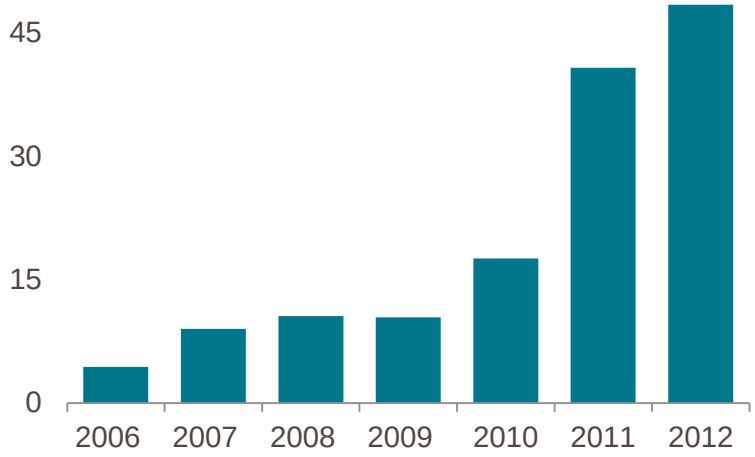
- Raw material price: based on current market price
- Ni ore: 1.8% at $28/wmt FOB
- Every $1/wmt increase in Ni ore yields a $80-90/t Ni increase in production cost
- Freight from Indonesia to China mainland: $16/wmt
- The above cost of production is based on an ideal production situation and excludes depreciation (ca. $500/t)
- If production volumes decrease, the cost of production will increase
- Lower Ni ore, freight and coke prices, coastal locations and economies of scale combined with enhanced technology and management facilitated reduced NPI cost of production
- RKEF cost ranges from under US$12K/t to US$13K/t

Source: Glencore

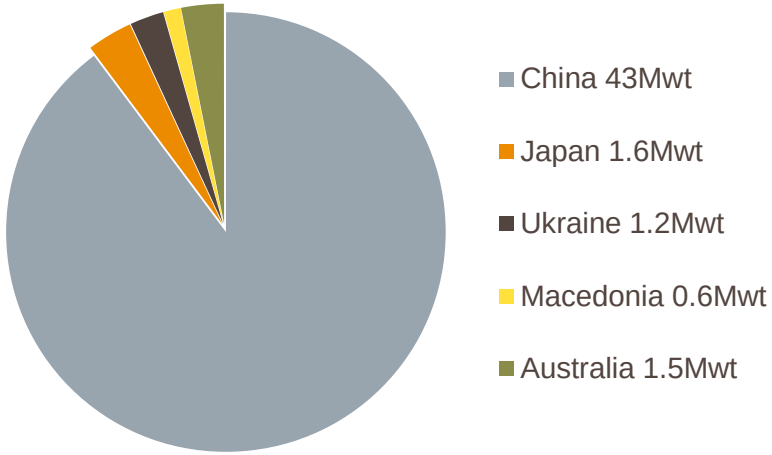
No NPI without Indonesia

- Indonesian ore exports have enabled and supported NPI growth
- Indonesian ore exports increased from ca. 4Mt in 2006 to 48Mt in 2012; exports for H1 2013 totalled 29Mt
- All growth generated by Direct Shipping Ore operations with no additional value add
- Indonesian ore exports not only key to China but also other markets
- Large number of players (ca. 100) and fragmented mining domain (excluding Antam and Vale)
- Strong Chinese presence (partnerships/ traders)
- Local and central government interests not aligned

2009 - 2012 Indonesian Ore Exports (Mt)



2012 Nickel Ore Exports, ca. 48Mt

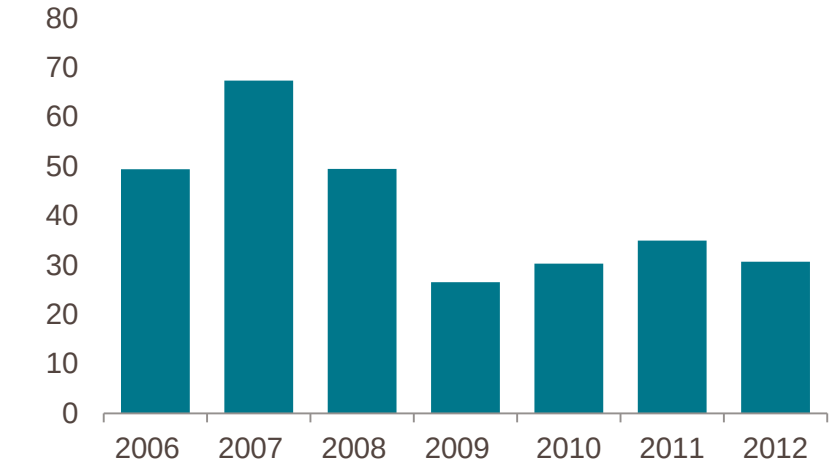


Source: GTIS, Indonesian Customs

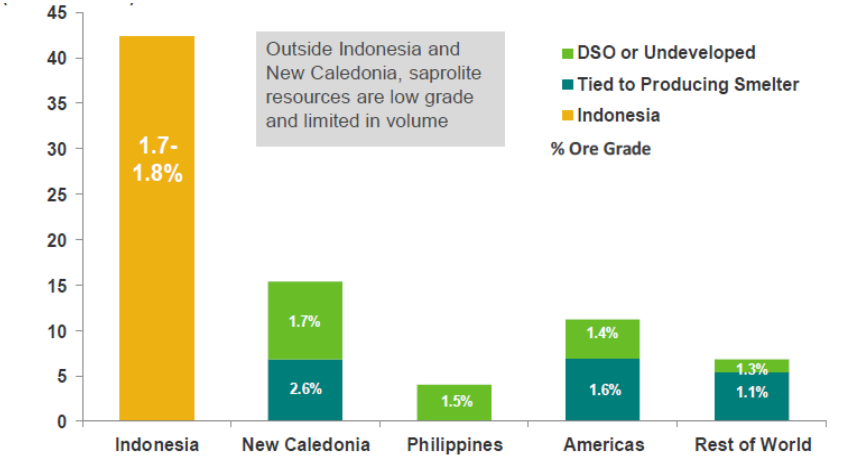
Indonesia has not yet benefitted materially

- Direct Shipping Ore has not benefitted Indonesia: inherent value of nickel ca. US$9Bn p.a. (based on 2012 average LME price) vs. ore revenue US$1.5Bn
- Indonesia now has a rare opportunity to positively influence the market and generate value for the country
- Unique position in terms of nickel saprolite resources and mostly high grade 1.8% Ni
- Potential for major foreign investment supported largely by Chinese EPCM in Indonesia if ban is enforced; material investments will come if unprocessed ore exports are stopped in accordance with Law 04/2009
- On the contrary, limited or short-term policy action will undermine the market further and reduce the likelihood of material investment in the coming years; if proof is needed, consider the May 2012 ban and subsequent quota system, and where we are now in respect to ore exports and the progress made in building processing plants - next to NO real progress

Indonesia Ore Export to China Unit Value (US$/t)

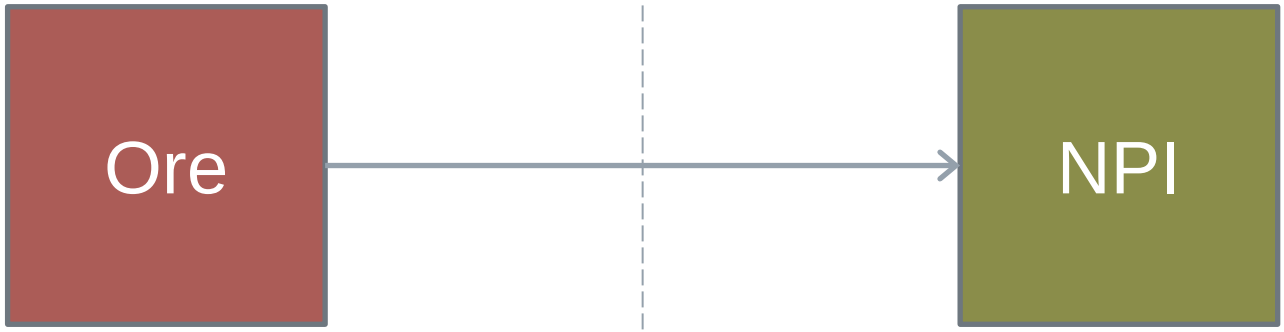


World Saprolite Resources (Mt Ni contained)



Source: Wood Mackenzie, Bloomberg, GTIS, Vale, Company Reports

Indonesia NPI value chain



- Ore volume: Up to 50Mtpa wet
- Ore grade: 1.8% Ni
- FOB price: US$28/t

- Market value: US$1.4Bn

- 4-year revenue: US$5.6Bn

- Capital intensity: US$12.5/t ore
- Total investment: US$625M

- Ni content: 540Ktpa Ni in NPI
- NPI grade: 10% Ni
- Market price: US$13,910/t

- Market value: US$7.5Bn

- 4 year revenue: US$15Bn*

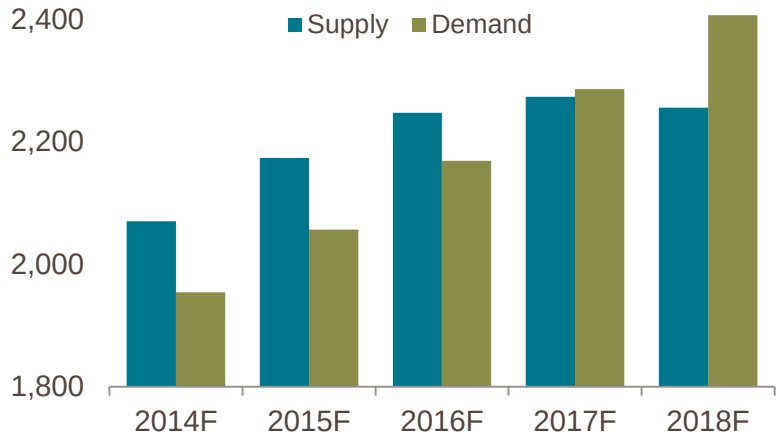
- Capital intensity: US$35K/t Ni
- Total investment: US$19Bn

*Allowing for a 2-year construction period

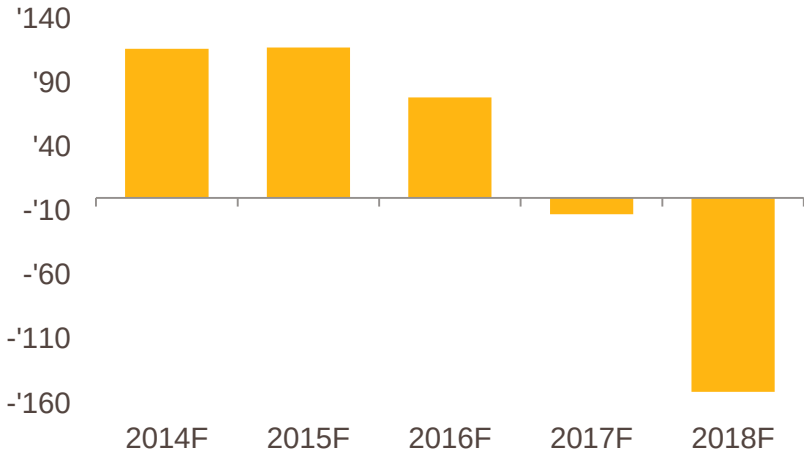
Nickel market outlook

- Excluding sustained disruptions to Indonesian ore exports or further growth in NPI production, if Indonesia exports are not banned and with further curtailments elsewhere, global nickel production is forecast to increase over 2.2% p.a. in the period 2014 to 2018, driven predominantly by the ramp-up of new projects
- Large scale projects/operations are in the process of being commissioned/ ramped up (Koniambo, Ambatovy, Ramu, Barro Alto, Onca Puma, VNC), adding an additional +250Kt capacity
- As a result, the nickel market would remain oversupplied for a number of years
- However, in the absence of major new nickel developments, substantial supply deficits are expected in the long term, although actual stocks at that point will be unprecedented and any further growth in ore shipments will only delay this reality longer

2014 - 2018 Nickel Supply/Demand (kt)



2014 - 2018 Nickel Market Balance (kt)



Source: Glencore

The realities of the nickel market

- Current realities of the nickel market are unsustainable: significant surpluses, record stocks, increasing output and substantial price pressure; major change is required
- Direct Shipping Ore has not benefitted Indonesia materially as the average prices realised are a fraction of the value of the contained nickel content
- Furthermore, continued ore exports undermine the outlook for nickel, decreasing profitability and undermining the investment case for processing in country
- Indonesia now has the opportunity to lead by showing real stewardship in enforcing Law 04/2009 and banning unprocessed ore shipments; in doing so it will ensure the world invests in processing ore in country
- Limited or short-term policy action would irrevocably damage the investment case for in-country investments and undermine the government's credibility
- We recognise the conflicts around this legislation and the challenges at hand; however, the current situation is unsustainable and whilst Indonesia needs to act other nickel producers also need to take a hard look at loss-making production and take it off line where possible
- The issue at hand is not only an Indonesian issue, it is an issue that we all need to address in order to ensure nickel supply and investment is sustainable in the long run

Q&A