



Minara and Reflections on the Nickel Market

Peter Johnston
Managing Director and CEO **October 2005**

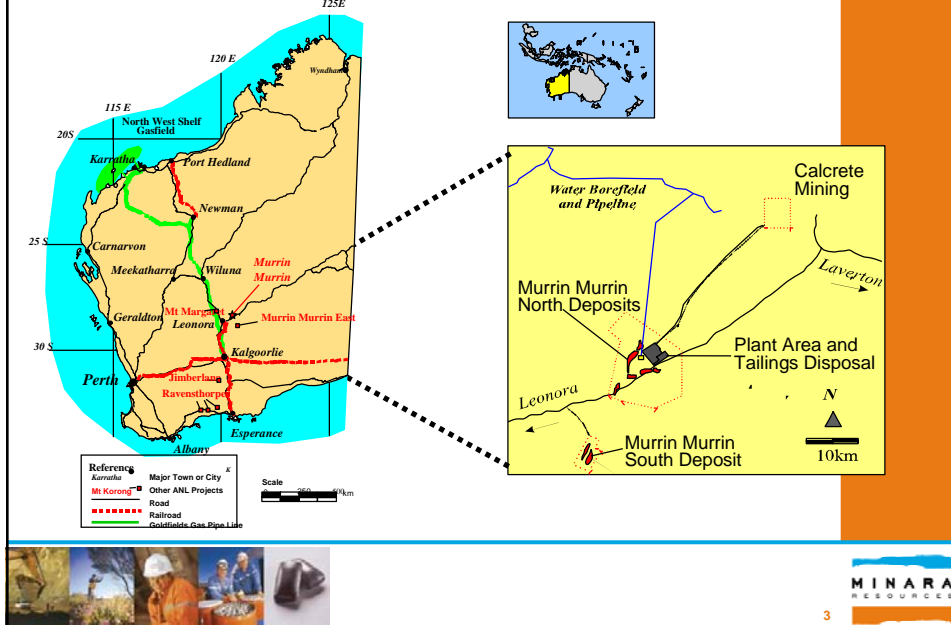


Minara's History

- ❖ **Founded in 1994, previously known as Anaconda Nickel Ltd**
- ❖ **Debt restructure and recapitalisation in 2002/03**
- ❖ **Named changed in Dec 03 to Minara Resources Ltd**
- ❖ **Minara will be the world's 10th largest nickel producer at Murrin Murrin**
- ❖ **Murrin Murrin is a 60/40 Joint Venture between Minara and Glencore International AG**
- ❖ **At capacity Murrin Murrin will produce 40,000 TPA Nickel, 2,500 TPA Cobalt before any expansion**



Murrin Murrin Location

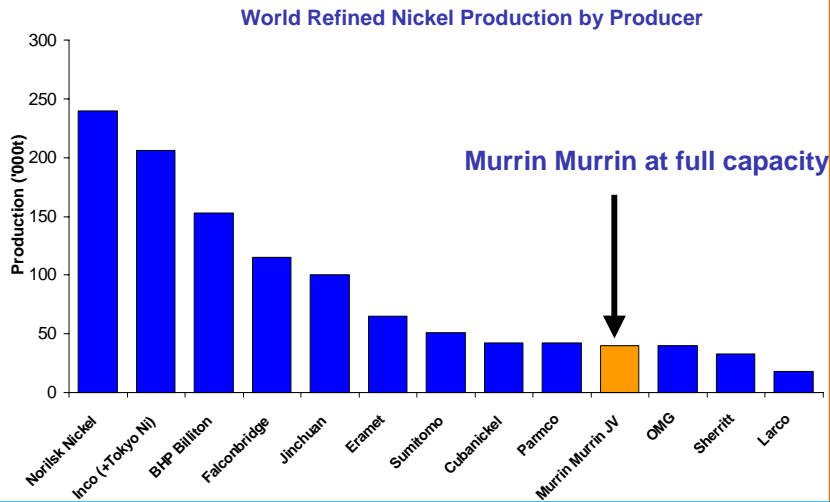


Murrin Murrin Resources/Reserves

- ❖ Reserve: 140mt @ 1.10% Ni and 0.087% Co
- ❖ Resource: 325mt @ 0.99% Ni and 0.064% Co
- ❖ 40 plus years mine life at nameplate capacity
- ❖ 5 plus years of 1.3% Ni headgrade
- ❖ Recent acquisitions at Toomey Hill, Pyke Hill, Cogleia Well/Irwin Hills yet to be included



Minara's Murrin Murrin 10th largest nickel producer in the world



Source: AME; Macquarie Research



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Industry Dynamics

- ❖ Global consolidation
- ❖ Industry sector underperformed in 1990s
- ❖ Under-investment in production capacity and exploration
- ❖ Early failure of the three Australian laterites
- ❖ Strong metals demand
- ❖ Supply constrained



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Nickel supply/demand

	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006F</u>	<u>2007F</u>
Stainless Steel production	22900	24510	25447	27025	28969
Nickel consumption	1243	1264	1301	1352	1428
% change	6.2%	1.7%	2.9%	3.9%	5.7%
Nickel production	1203	1261	1296	1345	1419
World market balance	-40	-3	-5	-6	-9
Norilsk/other stockpiles	74	15	2	0	0
Overall "balance" implied	34	12	-3	-6	-9



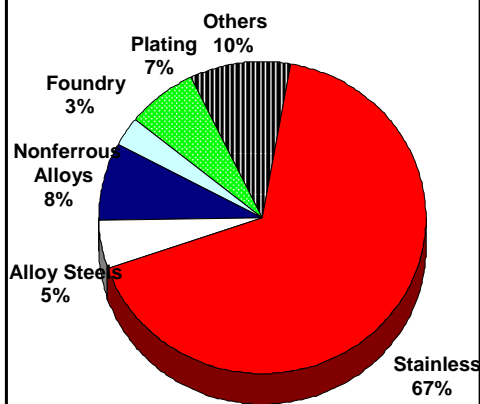
Source: Jim Lennon, Macquarie Research September 2005

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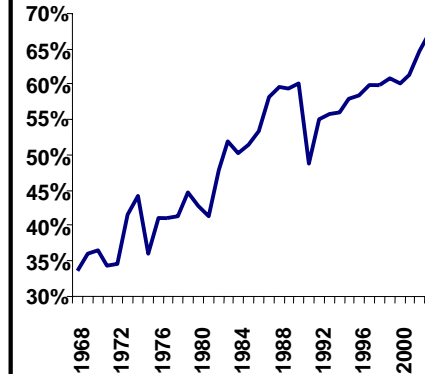
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Nickel Consumption

Global Nickel Demand by End-Use, 2003



Primary Nickel Use in Stainless Steel as a % of Nickel Demand

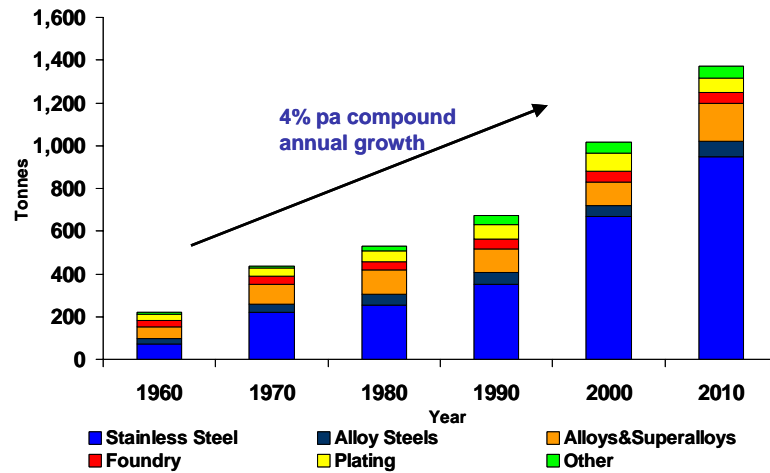


Source: Jim Lennon, Macquarie Research

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Nickel Demand – Stainless Steel Driven

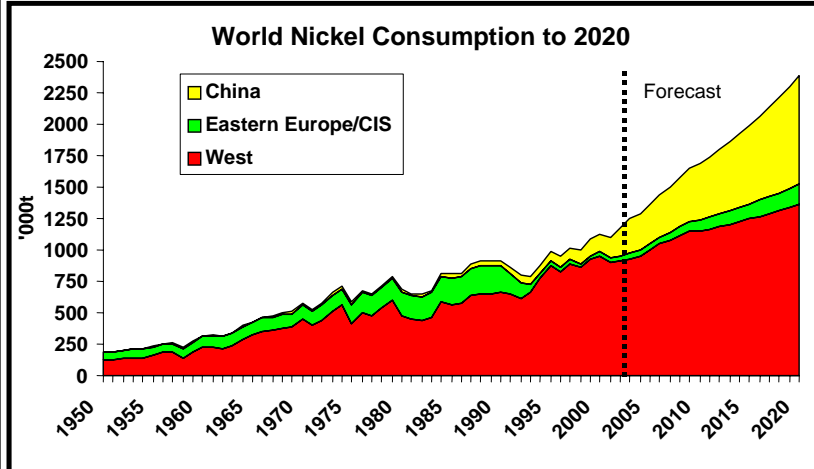


Nickel Demand – Stainless Steel Driven

- ❖ 67% in stainless steel
- ❖ World stainless steel production grew by 7% in 2004 to 24.5 mt
- ❖ 6 mt new melting capacity in China in next 5 years
- ❖ Recent unsuccessful substitution experience
- ❖ Past large scrap mobilisation not to recur



China's impact on consumption



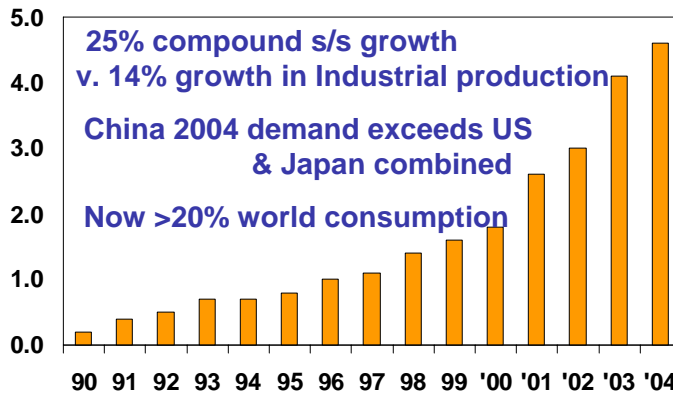
Source: Jim Lennon, Macquarie Research

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Explosive Chinese stainless demand

China Stainless Steel Consumption 1990- 2004



Per capita consumption – China 3.5kg v. Western world 8kg



Source: Inco, Presentation Apr05

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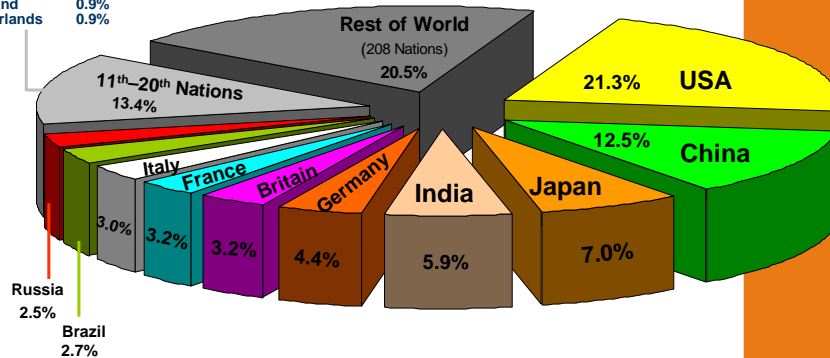


World's 20 Largest Economies

2003 (E)

Canada	1.9%
Mexico	1.8%
Spain	1.7%
Brazil	1.4%
Korea S	1.7%
Indonesia	1.5%
Australia	1.0%
Taiwan	0.9%
Iran	0.9%
Thailand	0.9%
Netherlands	0.9%

Purchasing Power Parity (PPP) terms



Source: IBIS

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Industry Trends – Traditional Nickel Supply

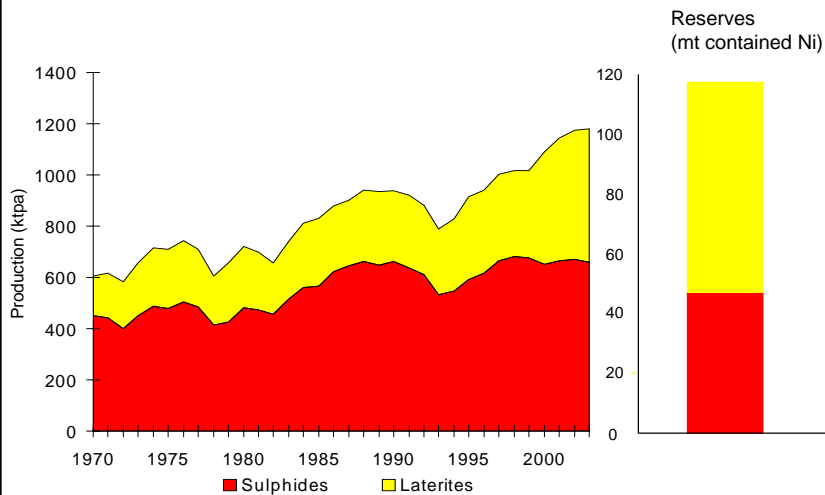
- ❖ Nickel industry at maximum capacity
- ❖ Major brownfield expansions limited
- ❖ Small sulphide projects still economic
- ❖ Last significant sulphide discovery
Voisey's Bay in 1994
- ❖ Pyrometallurgical processes route at
mercy of energy costs



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Industry Trends – Nickel Supply Source



Laterite Nickel Supply - lessons

- ❖ Require strong technical base
- ❖ Capital intensive
- ❖ Infrastructure important
- ❖ Maintenance intensive
- ❖ Volume and grade dependent
- ❖ Minimum 5-8 years development
- ❖ New lost cost/low risk leaching options
 - ◆ Atmospheric
 - ◆ Heap leach



Rising Project Costs

Project	Original Capex (\$US)	Current Capex	Capacity	Capex/LB Annual Prod
Goro	\$1,400 M	\$1,880 M	60,000 MT	\$14.20/LB
Ravens-thorpe	\$700 M	\$1,400 M	50,000 MT	\$12.70/LB
Koniambo	\$1,600 M	\$2,200 M	60,000 MT	\$16.60/LB
Ambatovy	\$1,600 M	\$2,250 M	60,000 MT	\$17.00/LB

Cost Pressures

materials
engineering
labour

environmental compliance
shipping
exchange rates



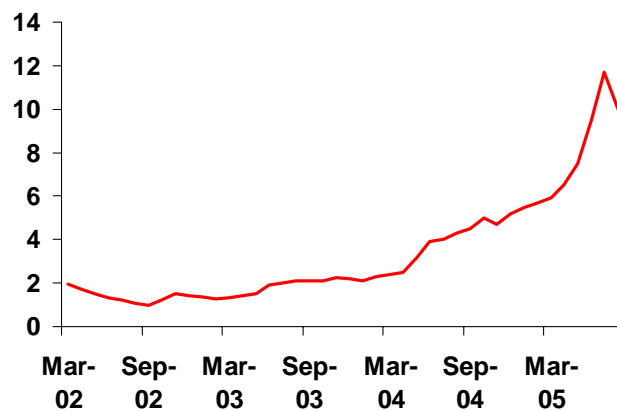
Source: Falconbridge, Melb Mining Club Presentation Oct05

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Titanium price escalation

Basis 6-4 Bulk Weldable Ti scrap USA spot (US\$/LB)



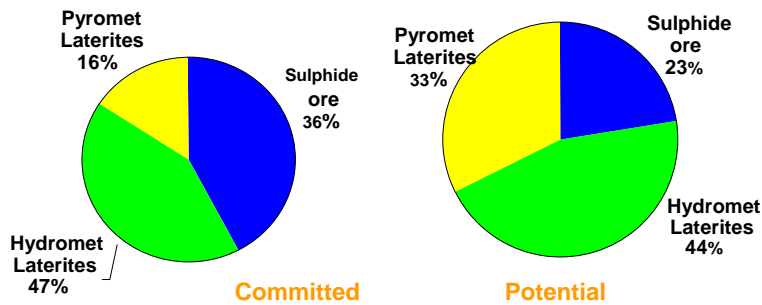
Source: Metalprices

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Not quite a PAL (Hydromet laterite) revolution?

'000t Ni	Committed	Potential	All Projects	Total Share %
Sulphide ore	170	142	312	30%
Hydromet Laterites	170	281	451	44%
Pyromet Laterites	64	204	268	26%
Total	404	627	1031	



Source: Jim Lennon, Macquarie Research

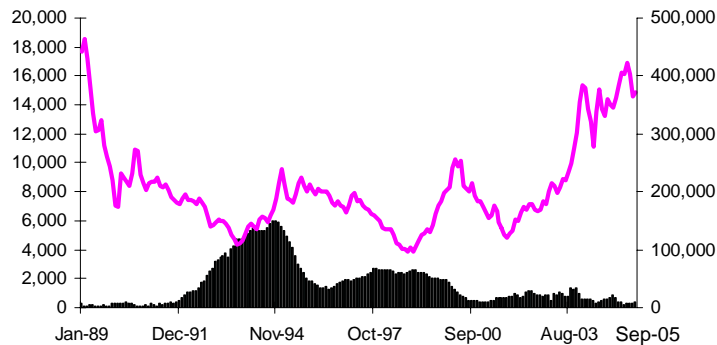
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Nickel Price and Stocks History

Nickel price
US\$/tonne

LME stocks
tonnes



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Murrin Murrin Opportunities

- ❖ Operating HPAL plant – 36,000tpa current rate
– 40,000tpa nameplate
- ❖ Unused nickel refining capacity up to 60,000tpa
- ❖ Unused cobalt refining capacity up to 5,000 tpa
- ❖ Unused acid plant capacity
- ❖ Exploration
- ❖ R&D – Heap leach



Heap Leach

- ❖ Culmination of 5 years R&D
- ❖ \$12m investment over next 2 years
- ❖ Initially treat scats then ore
- ❖ Low risk, known technology
- ❖ Low capital cost, low operating cost
- ❖ Synergies with current plant



Summary

- ❖ **Minara well placed**
- ❖ **Strong balance sheet**
- ❖ **Improving HPAL production**
- ❖ **Second production stream from heap leach**
- ❖ **Production opportunities - refinery**
- ❖ **Sulphide exploration upside**



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Conclusion

- ❖ **Strong demand for nickel**
- ❖ **Low LME stocks**
- ❖ **Low producer stocks**
- ❖ **Limited new capacity**
 - ◆ **Voisey's Bay 2005/6**
 - ◆ **Goro 2008-2010**
 - ◆ **BHPB Ravensthorpe 2007-2010**
- ❖ **Price volatility – big issue**
- ❖ **Outlook remains positive**



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