



# Nickel Market Developments

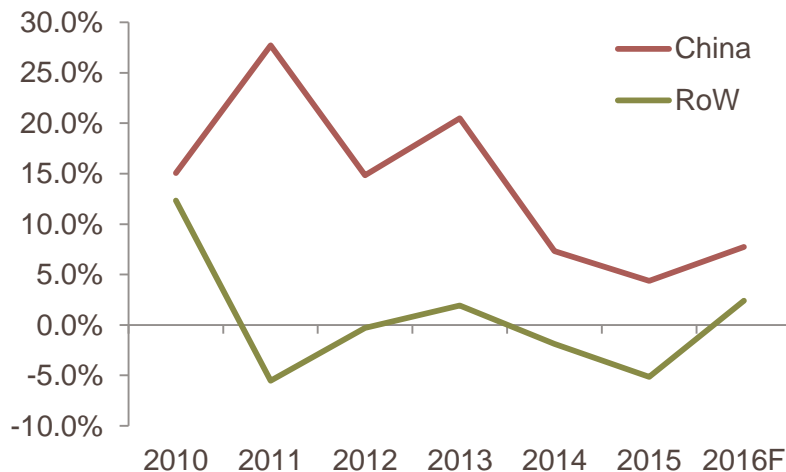
September 2016

**Present:  
Improved market conditions**

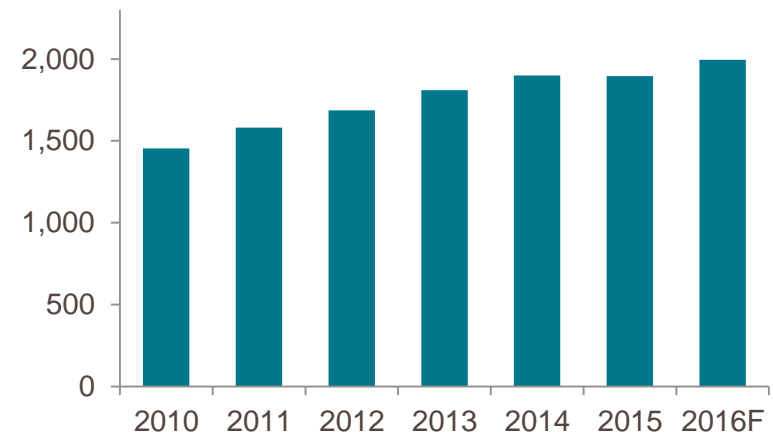
# 2016: Significantly stronger consumption

- Global primary nickel demand growth resumed following 2015 impasse, reflecting:
  - Chinese stainless steel Production up 7% YTD; driven by 300-series output (+8% YTD). Combined with scrap tightness yields +10% YTD nickel demand growth
  - Scrap tightness FH shortages, particularly in Europe, stimulating additional primary unit demand
  - Battery market Strong growth in Japan, Korea and China with nickel consumption tracking +20% YoY
  - Oil & Gas Sector now stabilising following 2015 collapse, as reflected in improved demand from specialty steel producers
- We estimate that FH global demand growth was +6% on the prior year and project +5% growth for 2016 to ~2Mt Ni

2010 – 2016 Nickel demand growth (% YoY)



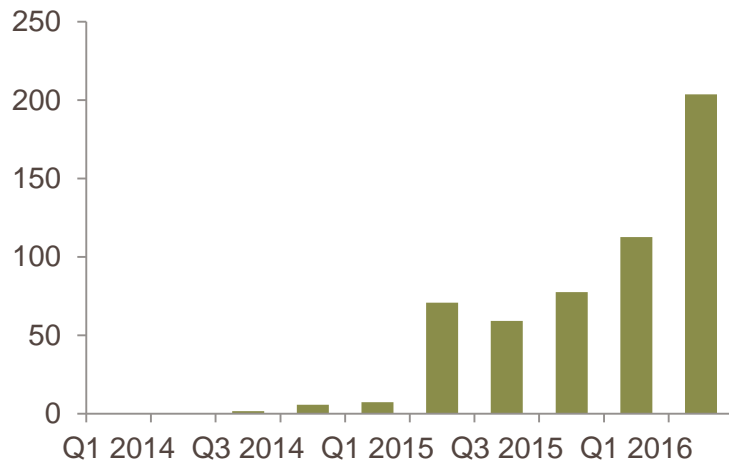
2010 – 2016 Primary nickel demand (kt Ni)



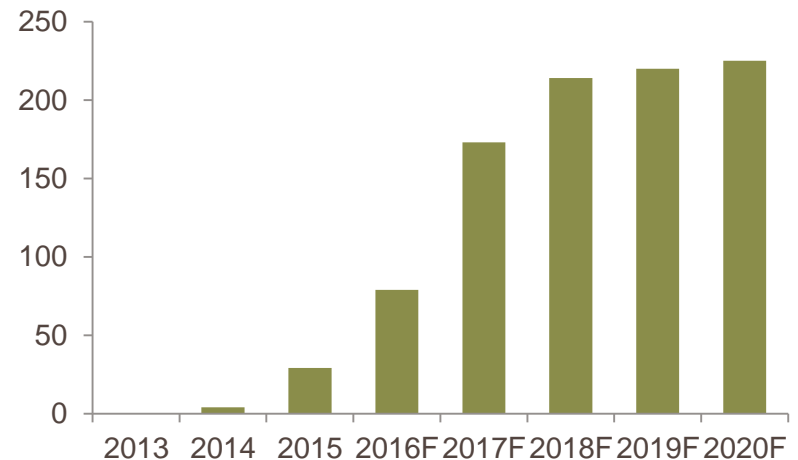
# 2016: Indonesian project buildout exceeds expectations

- The 2014 implementation of Law 4/2009 and the ban on unprocessed Nickel exports is proving to be a remarkable policy success despite the skepticism and attempts to overturn the ban.
  - Significant FDI in-country We estimate a USD4-5Bn spend in country has been committed since 2013. PT SMI (Tsingshan/Bintang JV), Delong, Indoferro, RKA, Antam amongst others are constructing and in some cases have already commissioned and ramped-up capacity in country.
  - Project quality The PT SMI facility is world class and arguably the lowest cost FeNi operation in the world. It will soon be the largest at 150,000 mtu of installed capacity by the LH 2017, with downstream stainless facilities.
  - Value to country Tax receipts from these producers will exceed the limited receipts realised through ore exports.
- Law 04/2009 has been an unmitigated success, Indonesia is seeing industrialisation at a rapid pace as a direct result.

China FeNi/NPI Imports ex. Indonesia (kt FeNi)



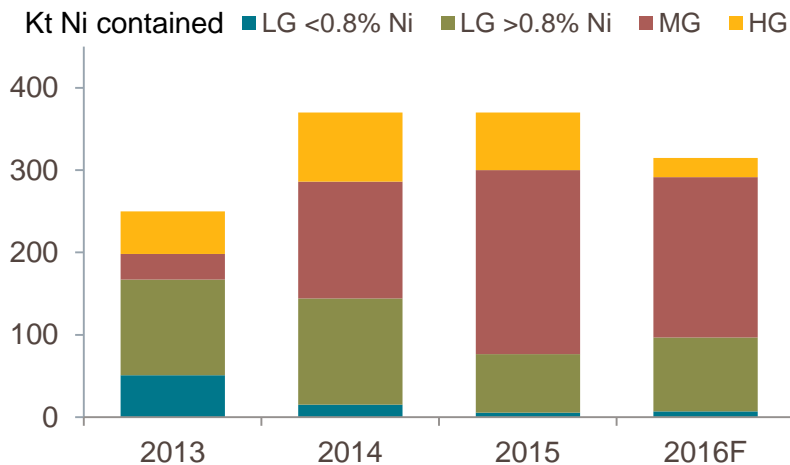
2013 – 2020 Indonesian NPI supply (kt Ni)



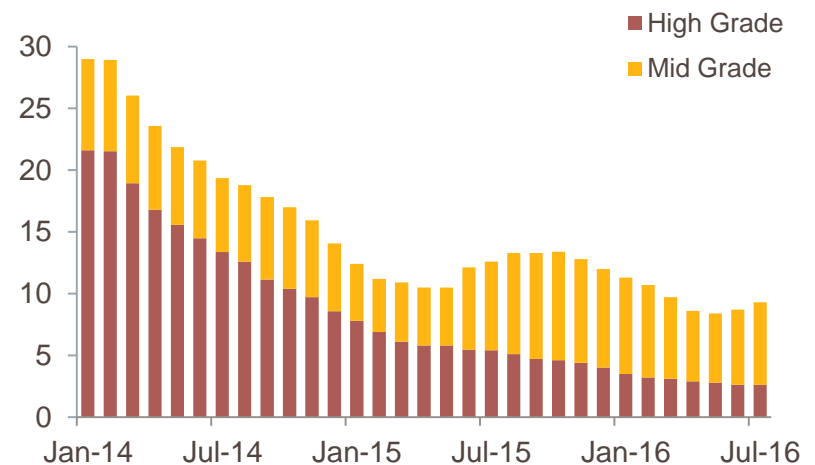
# 2016: Philippine MG/HG ore supply down significantly

- Total YTD ore exports to China are down 18% YoY, driven by a collapse in HG shipments to China (-83% YoY), while MG ore supply is also down 19% YoY. Total YTD nickel contained in MG/HG ore exports to China are down 37% YTD.
- This trend of decreased output is evident prior to any potential suspensions / disruptions related to the recent audit of all existing mines in the country to check for environmental compliance and to clamp down on non-sustainable mining practices.
- This decreased ore supply is constraining Chinese NPI output which is down +15% YoY.
- Furthermore, China's MG/HG ore inventories have decreased 18% since the start of the year, are down 68% from pre-ban levels and are considered to be at critical levels prior to the upcoming wet season.
- Any suspensions / disruptions resulting from the Philippine mining audit will further add to this ore tightness.

2013 – 2016 Philippine ore supply to China



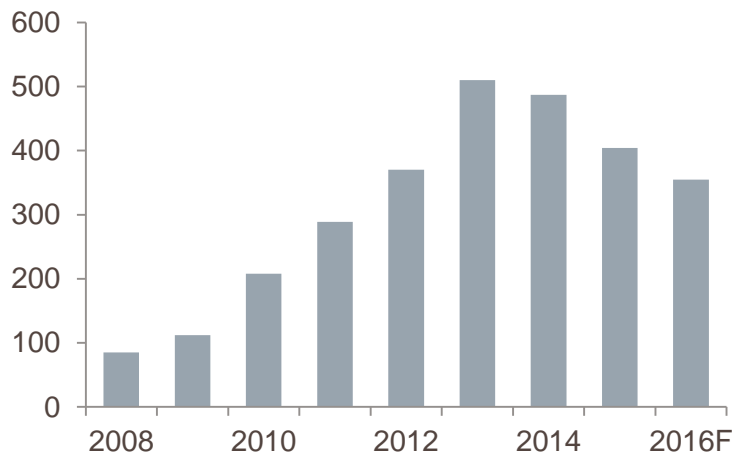
China MG/HG Ore Inventory (M WMT)



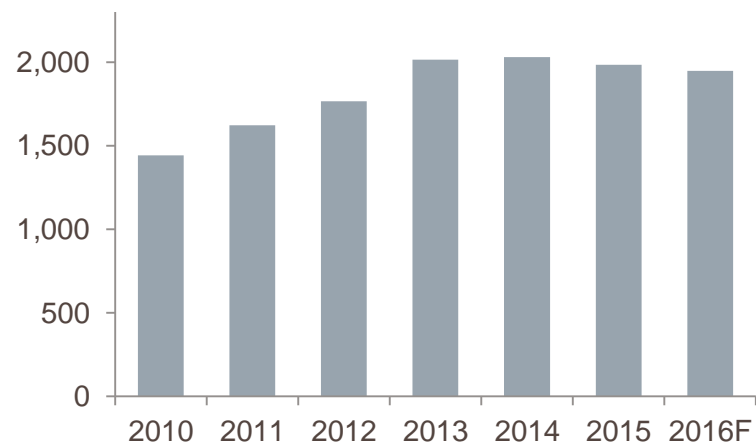
# 2016: Overall global nickel supply is down YoY

- In addition to reduced nickel pig iron output in China, non-China output has decreased reflecting:
  - Price-induced closures  
Supply is adjusting to subdued price environment with closures at Queensland Nickel, Panoramic Resources, Mincor, Votorantim, Cunico-Kosovo, Ban Phuc and Mirabela
  - Supply disruptions  
Norilsk reconfiguration of downstream facilities, safety and operational incidents at Taganito, Ramu, Fenix and Antam
- Overall and despite the rapid capacity expansion in Indonesia, we estimate FH nickel supply was down 3% YoY and project a 4% decline for 2016 to ~1.9Mt Ni

2008 – 2016 China NPI Output



2010 – 2016 Global Nickel supply (kt Ni)



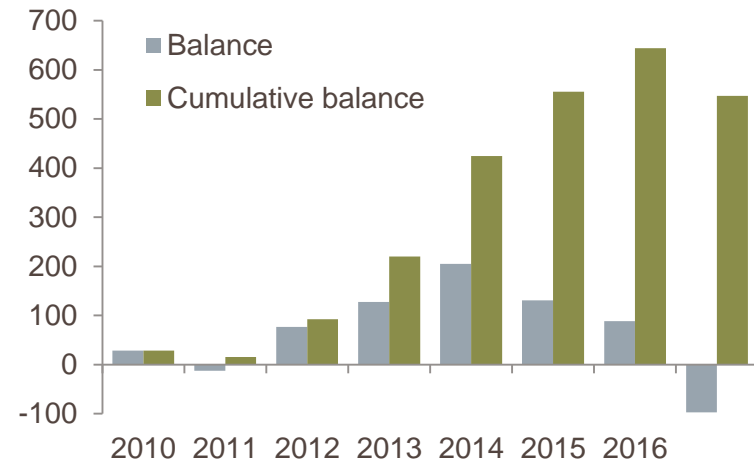
Source: Glencore

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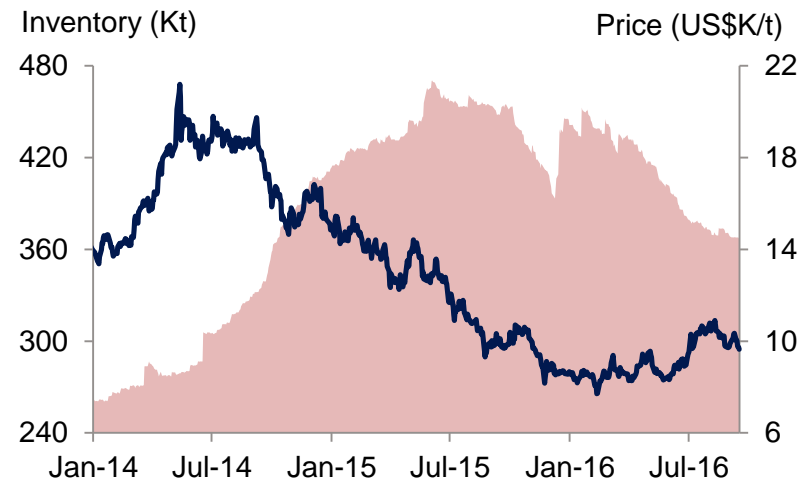
# 2016: Deficits have arrived, yet stocks slow recovery

- Following years of structural oversupply, the market today is already much improved
  - We estimate that the nickel market returned to balance in Q4 2015 and moved into deficit in Q2 2016. For 2016 we forecast deficits of approx. 100,000mts of nickel.
- Nevertheless, the structural oversupply seen in recent years and resulting excessive global inventories slow any recovery
  - Today 750,000mts +/- 5% of nickel sits in global inventory, approx 367K on the LME, 112K on the SHFE, another 140K in bonded/non bonded China, and the balance a combination of SRB stocks and non terminal exchange stocks in Taiwan, Malaysia, Singapore, Rotterdam and elsewhere.
- Further supply side rationalisation and continued demand growth will help drive a significant and sustained recovery in prices

2010 – 2016 Market balance (kt Ni)



2014 – 2016 Nickel price and LME stocks



**Forecast:**  
**Positive long term outlook**

# Positive long term outlook

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**Current demand, supply, sentiment and macroeconomic developments contribute to a positive long term outlook**

## **Demand**

- Nickel is a late-cycle commodity with properties required in high-end applications where demand will continue to grow.
- Batteries and the onset of the EV revolution could prove to be a transformational event as NCA and NCM Li-ion technology establishes itself as the battery chemistry of choice and EV penetration multiplies from a non-existent base. Whilst the materiality is debated, we believe +60Kt of Ni demand in batteries today will multiply over the next 5 years to ~150-300Kt and potentially more.

## **Supply**

- Domestic Chinese supply is stable at best, with China reliant on imported Ni units/drawing down finite legacy inventory.
- Philippine resources are limited and primarily low grade (at best medium grade). While potential ore supply from elsewhere, including New Caledonia, is limited.
- Expansionary capital collapse and sustaining capital cuts seen in the last 24 months will have a material impact on supply starting later this decade and potentially before. Current rates of spend are unsustainably low.

## **Macroeconomic environment and sentiment**

- While the fundamental backdrop is critical in supporting prices higher, market sentiment and investor conviction is critical in determining price action, especially in the short/medium term.
- Sentiment has clearly improved on the back of more positive macroeconomic data, particularly in China.
- Whilst investors remain cautious, market positioning is more balanced and position is starting to shift towards the long-side versus the short-side, which is where the money has sat since 2014 or earlier.

**In conclusion:**

# In conclusion

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Whilst the nickel market has to address the 2009-2015 oversupply legacy, the work has begun in earnest in the second half of 2015 and results are starting to be seen, as evidenced by significant deficits in 2016.

We expect this to continue as demand growth continues to exceed supply, largely on the back of Chinese outperformance and the emergence of the battery sector as a major nickel demand driver.

Whilst new competitive supply has been commissioned and ramped up in Indonesia and additional competitive supply will be built out, supply elsewhere will decline, capping the actual rate of supply growth for the foreseeable future. This is very different from what we saw in 2009-2014 when supply expanded at +9% pa despite the poor ramp-up performance of a number of projects.

**The medium term/long term outlook is much more positive fundamentally and we believe it is only a matter of time before the markets start to recognise this and price accordingly.**



**Questions?**