

COMMODITY Insights Bulletin

January 2016

Nickel (Q2, 2015–Q3, 2015)



Insight: potential for continued volatility in 2016 prices

In the short term, questions about reduced demand for stainless steel from China will continue to put pressure on the price of nickel. As a result, questions about when higher cost producers are likely to shut down will remain a key factor in future prices. In the medium and long-term, the expectation is that low-cost supply will continue, as these larger players wait and see which higher cost producers cannot sustain. The question is, who will make meaningful production cuts first?

Of significant importance, during Q2, 2015, was Indonesia's recently reaffirmed export ban on nickel, which, had it not have been sustained, would have continued the downward pressure on prices. LME nickel inventories have continued to decline; however at least for now, remain in a surplus position. Expectations of a deficit are expected for 2016, however markets remain cautious of this.

There is an expectation of continued volatility in 2016 prices, as markets wait for production cuts and to see the pace of demand from China.

Price outlook¹

Nickel prices dropped from US\$13,046/t in Q2, 2015 to US\$10,582/t in Q3, 2015, due to further reduction in nickel demand from stainless steel producers. About 70 percent of the refined metal is used in the stainless steel sector, where producers are aggressively selling assets on signs of worsening economic growth. For example, in June 2015, Glencore sold its Cosmos nickel mine to Australian nickel producer Western Areas for US\$19 million.

“ Questions about when higher cost producers are likely to shut down will remain a key factor in future prices. ”

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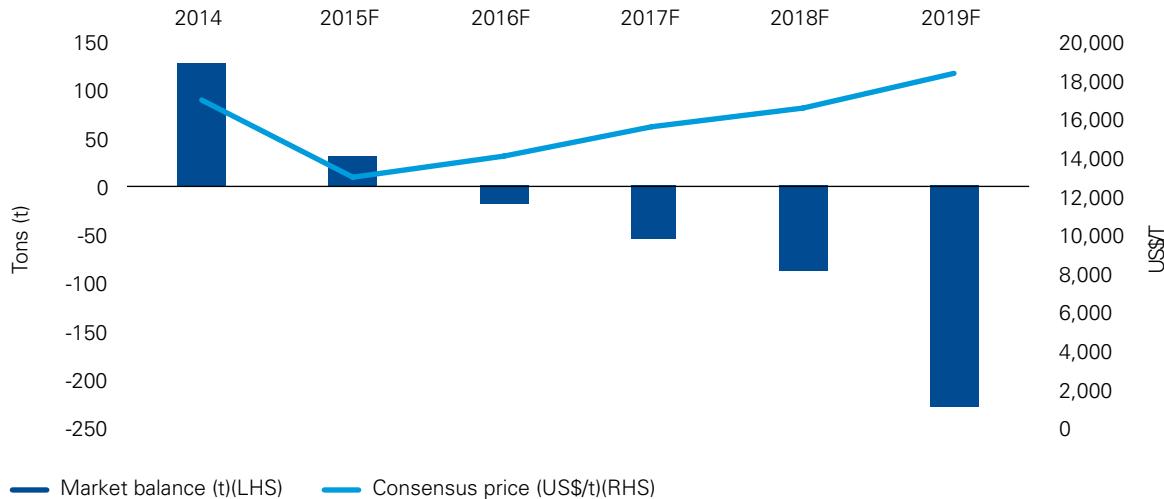
Another reason for the drop in prices was increased production of nickel ores from the Philippines during Q2 and Q3, 2015, resulting in an oversupply. Over the past few years, Indonesian nickel ore was the raw material for up to 30 percent of global production of refined nickel, which is used to make stainless steel. However, the Indonesian ore export ban in Q2, 2014 resulted in reduced commodity supply and increased price in the global market. During Q2 and Q3, 2015, the market witnessed a significant growth in the export of high-grade laterite ores from the Philippines and reduced Chinese consumption, resulting in commodity oversupply and reduced price. During this period, global nickel ore inventory rose to 458 thousand tons (Kt), the highest since 1990, further lowering the commodity price. In Q3, 2015, nickel prices witnessed continued decline due to the economic slowdown in China resulting

¹ Credit Suisse, "Commodities view: Who will cut nickel production to lift the price," 10 November 2015; UBS Research, "Commodities: Mining & Metals Nickel — Nickel: China Ni-imports a new record," 10 November 2015, via Thomson research/Investext; "Resources and Energy Quarterly, June 2015," Bureau of Resources and Energy Economics (BREE), Australian Government; "Commodities: Nickel — demand," EIU website, accessed November 2015.

in reduced demand. About two-thirds of the nickel in China is used for stainless steel production and the downturn in manufacturing and construction industries impacted the steel market in China — which is the largest global consumer of nickel.²

Nickel consensus prices are expected to grow by about 8 percent from US\$12,976/t in 2015 to US\$14,053/t in 2016 as producers plan to tighten the market through reduced supply in 2016. To lift the nickel prices, the market needs a deficit of 24Kt in 2016, with an estimated production cut of 35–55 thousand tons per annum (Ktpa) by 2016.³

Figure 1: Nickel price trends (2014–19F)



Source(s): Credit Suisse, "Commodities view: Who will cut nickel production to lift the price" 10 November 2015; UBS Research, "Commodities: Mining & Metals Nickel — Nickel: China Ni-imports a new record" 10 November 2015, via Thomson research/Investext; "Resources and Energy Quarterly, June 2015," Bureau of Resources and Energy Economics (BREE), Australian Government; "Commodities: Nickel — demand" EIU website, accessed November 2015.

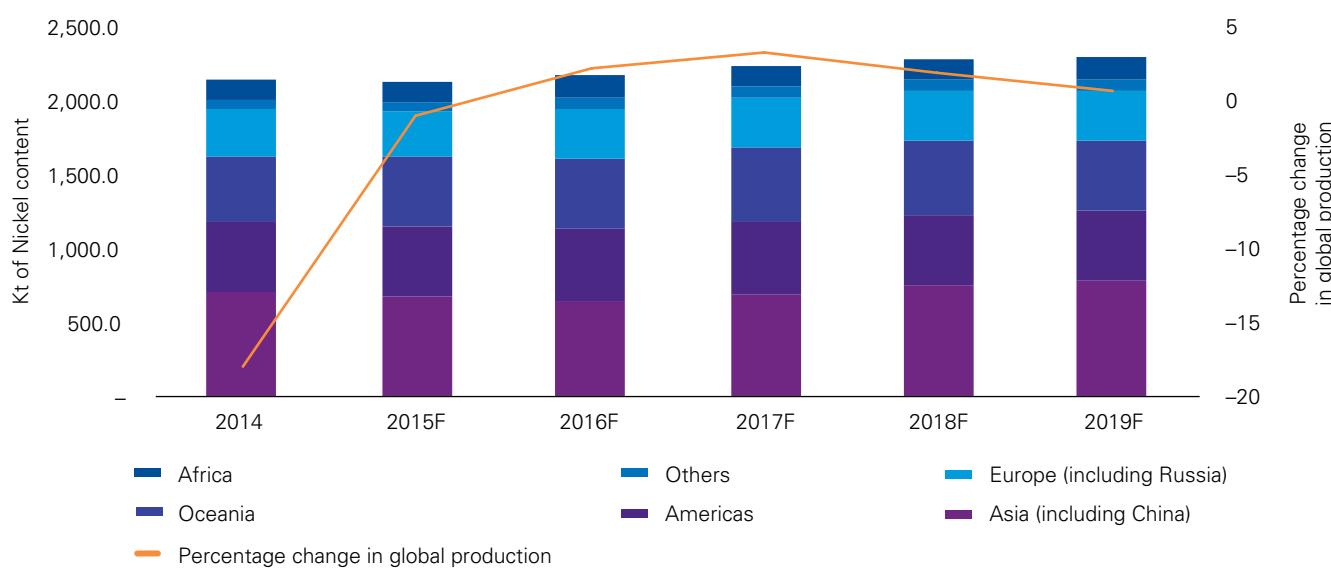
Nickel prices are expected to increase significantly by 9.04 percent during the forecast period (2015–2019), from US\$12,976/t in 2015 to US\$18,344/t in 2019, driven by increased demand from stainless steel production in China and reduced supply. With the current low-price environment,

large miners could incur huge losses from their existing high-cost mining operations. For example, BHP Billiton is expected to generate an EBITDA loss of US\$386 million from its Nickel West mine in Q4, 2015.

Supply and demand⁴

Supply

Figure 2: Global nickel mine production, 2014–19F



Source: RBC Capital Markets, "Nickel Market Outlook — Fourth Quarter 2015," 5 October 2015, via Thomson research/Investext, accessed November 2015.

² Credit Suisse, "Commodities view: Who will cut nickel production to lift the price," 10 November 2015; "Morgan Stanley slashes nickel forecasts on deteriorating macro outlook," Reuters website; "Glencore sells Australian nickel mine to Western Areas," Reuters website, accessed December 2015.

³ Credit Suisse, "Commodities view: Who will cut nickel production to lift the price," 10 November 2015, via Thomson research/Investext, accessed November 2015.

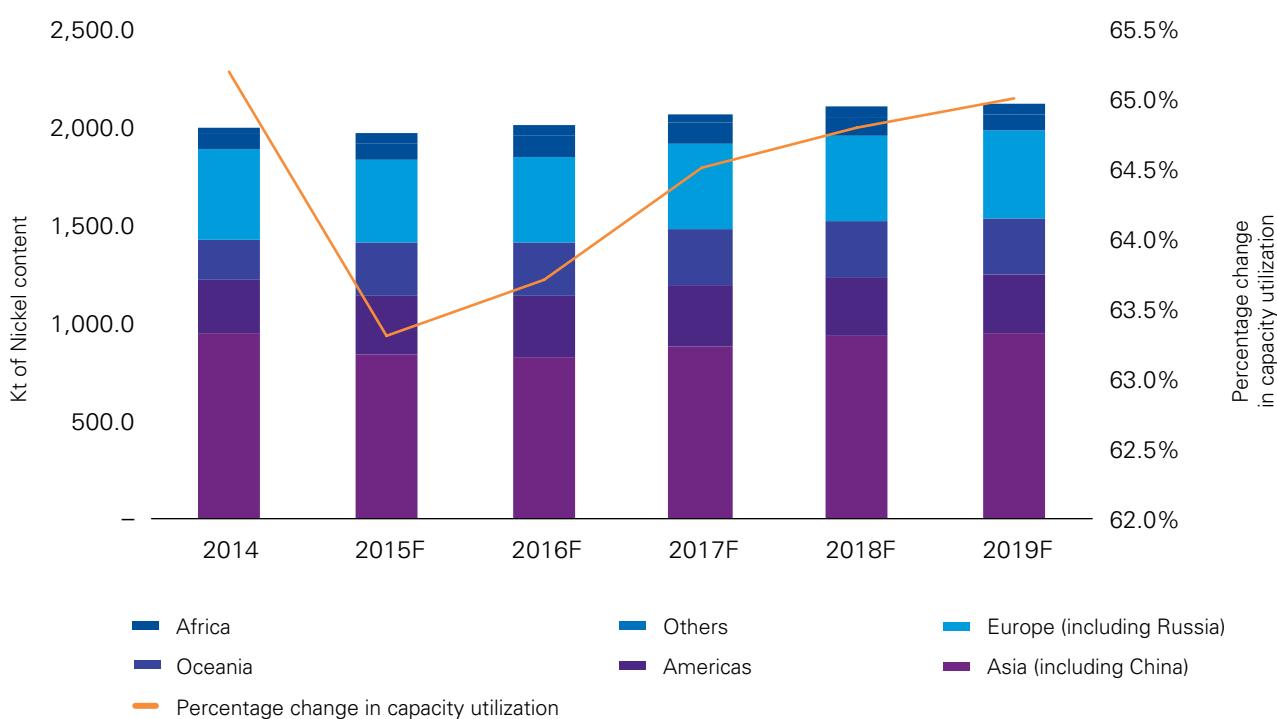
⁴ RBC Capital Markets — Nickel Market Outlook — Fourth Quarter 2015, 5 October 2015, via Thomson research/Investext; Q3 marks another profitable quarter in 2015 despite low nickel price, Vale website; Philippines' Agata Mining cuts May nickel ore exports due to weak prices, demand, Reuters website, accessed November 2015.

- In 2014, global nickel mine production declined by about 18 percent, from 2.6 million tons (Mt) in 2013 to 2.1Mt in 2014, as a result of the Indonesian ore export ban. However, the loss in supply from Indonesia was partially offset by increased output in the Philippines, which emerged as the market leader, accounting for about 16 percent of total mine production — 308Kt in 2014.⁵
- During Q2 and Q3, 2015, a few mining companies, like Vale, witnessed profits despite the fall in prices, as a result of increasing production. For example, Vale recorded a profitable quarter in Q3, 2015 with earnings of US\$10 million along with increased production of 15 percent, q-o-q in Q3, 2015. However, as a result of the recent sharp fall in prices, global miners are focusing on improving operational efficiencies and reducing costs to prevent losses. In May 2015, the Philippines' Agata Mining had cancelled three of four ore shipments from its mine in the country due to depressed prices and low demand.⁶
- Nickel mine production is expected to increase marginally by 2 percent, from 2,122Kt in 2015 to 2,165Kt in 2016. The reduced supply from the Indonesian export ban in 2014 is expected to be largely offset by the large laterite projects and nickel pig iron (NPI) plants coming on stream in Indonesia in 2016. For example, PT Antam, Indonesia's gold and nickel producer, is planning to develop Mandiodo NPI in Konawe, Indonesia, with production capacity of 24Ktpa and commissioned to start by 2018. Hence, supply from Indonesia in the form of NPI is expected to gain traction

in 2016 with several smelter projects in construction. Nickel mine output in Australia and Canada, two major nickel mining countries, is expected to marginally grow in 2016–2017, taking advantage of the shortfall in supply triggered by Indonesia's continuing export ban. However, domestic Chinese nickel producers are expected to cut their nickel output in 2016 to lift prices. In November 2015, eight producers, including state-owned Jinchuan Group Co Ltd, announced plans to cut nickel production by 15Kt in December 2015 and announced further cuts of 80Kt in 2016, if prices do not recover.⁷

- During the forecast period (2015–2019), Chinese nickel production is expected to decline by 1.8 percent year on year (y-o-y) to 100Kt, as the sector will face significant challenges from slowing growth in industrial activity. Reduced demand for steel products will reduce demand for nickel, resulting in commodity oversupply. Chinese steelmakers will increasingly diversify their operations into non-steel businesses in a bid to arrest the collapse in profit margins over recent years.⁸
- Global nickel mine production is expected to increase about 8 percent during 2015–2019, from 2.1Mt in 2015 to 2.3Mt by 2019, driven by an increase in Indonesian mine production, to feed the growing Chinese NPI capacity. By 2019, nickel mine production is expected to increase as existing operations and previously approved new projects will contribute about 346Kt of new supply relative to 2014.⁹

Figure 3: Global refined nickel production, 2014–19F



Source: RBC Capital Markets, "Nickel Market Outlook — Fourth Quarter 2015," 5 October 2015, via Thomson research/Investext, accessed November 2015.

⁵ RBC Capital Markets, "Nickel Market Outlook — Fourth Quarter 2015," 5 October 2015, via Thomson research/Investext, accessed November 2015.

⁶ "Q3 marks another profitable quarter in 2015 despite low nickel price," Vale website; "Philippines' Agata Mining cuts May nickel ore exports due to weak prices, demand," Reuters website, accessed November 2015.

⁷ BMI Research, "Industry Forecast — Nickel: Weak Domestic Growth," 28 October 2015, via Thomson research/Investext; "PT Antam signs investments in mineral projects," Rambuenergy website; "Cedrus Investments, PT Antam sign agreement on mineral project developments," Reuters website, accessed November 2015.

⁸ RBC Capital Markets, "Nickel Market Outlook — Fourth Quarter 2015," 5 October 2015, via Thomson research/Investext, accessed November 2015.

⁹ Ibid.

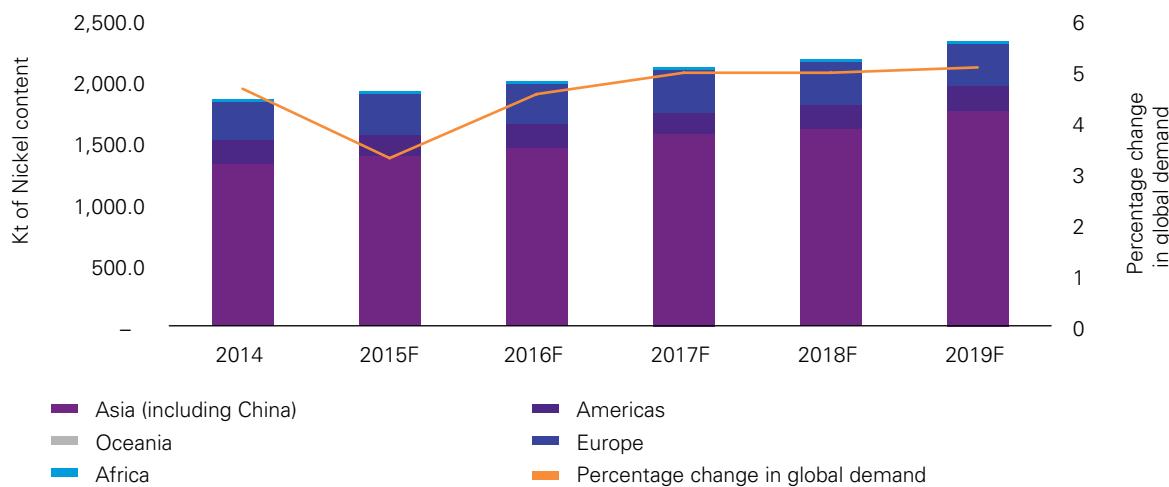
- In 2014, China was the largest supplier of refined nickel, contributing to more than 50 percent of the global refined nickel capacity, as a result of less-stringent environmental laws and lower cost structure. However, strict environmental regulations (that were enacted in January 2015), overcapacity and weak consumption growth impacted refined nickel production in China during Q2 and Q3, 2015. These conditions led to the closure of several smaller ferronickel plants in China through Q2 and Q3, 2015. For example, few Chinese NPI producers, including Linyi Jinhaihui Technology Co Ltd, are expected to face permanent closures, if they do not have funding to upgrade facilities to meet China's tougher environmental standards after local authorities ordered them to halt production in Q2, 2015. During the period, refined nickel production in Russia was also hampered by the planned closure of refining units and falling ore grades at ageing mines.¹⁰
- Ongoing production issues hampered refined nickel output from Australia in 2015. For example, pollution problems continued to affect the non-integrated Queensland Nickel refinery at Yabulu. Refined nickel production is likely to remain more or less flat in 2016,

as a result of the low-price environment. Increased mine supply in Canada will support a rise in refined output by 3 percent from 154Kt in 2015 to 159Kt in 2016. Therefore, a marginal increase in global production of refined nickel in 2016 is expected along with a more substantial rise of 3.7 percent in 2017, driven by new refining capacity coming on stream and recovering output in the supply of mined nickel ores.¹¹

- Global refined nickel production is expected to increase by only 7 percent during 2015–2019, from 1.9Mt in 2015 to 2.1Mt by 2019, since refined production is expected to be constrained by the lack of mine supply. Additionally, if nickel prices stay at their current low level, despite reduced production over 2015–2019, the market might witness further than forecasted tightness in production.¹²
- The growth in NPI capacity and the slow start-up of the large laterite projects have resulted in low refining utilization of 65 percent during Q2 and Q3, 2015. During the forecast period (2015–2019), utilization rates are expected to remain at relatively low levels due to tightness in mine supply and shutdown of Chinese NPI plants.¹³

Demand

Figure 4: Global nickel consumption, 2014–19F



Source: RBC Capital Markets, "Nickel Market Outlook — Fourth Quarter 2015," 5 October 2015, via Thomson research/Investext, accessed November 2015.

- During Q2 and Q3, 2015, China's refined nickel imports increased by 250 percent y-o-y to 38.5Kt, as a result of increased supply from Russia and the Philippines. Chinese appetite for refined nickel has increased during the period to supplement the fall in Chinese nickel ore and concentrate imports. Russian exports of refined

nickel to China were up 32 percent q-o-q in Q3, 2015 at 21.6Kt from 16.3Kt in Q2, 2015. This represents 56 percent of China's refined metal imports in Q3, 2015. NPI production costs have increased due to higher feed costs combined with lower prices for both nickel and NPI.¹⁴

¹⁰ RBC Capital Markets, "Nickel Market Outlook — Fourth Quarter 2015," 5 October 2015, via Thomson research/Investext; "Resources and Energy Quarterly, June 2015," Bureau of Resources and Energy Economics (BREE), Australian Government; "Commodities: Nickel — demand," EIU website; Chinese city shuts factories as environmental law bites, Reuters website, accessed November 2015.

¹¹ "Commodities: Nickel — demand," EIU website, accessed November 2015.

¹² RBC Capital Markets, "Nickel Market Outlook — Fourth Quarter 2015," 5 October 2015, via Thomson research/Investext, accessed November 2015.

¹³ RBC Capital Markets, "Nickel Market Outlook — Fourth Quarter 2015," 5 October 2015, via Thomson research/Investext, accessed November 2015.

¹⁴ "Nickel imports in China nab a massive increase," Platts website, accessed November 2015.

— In 2015, global demand for nickel is expected to increase marginally by 3 percent, from 1,860Kt in 2014 to 1,930Kt in 2015, driven by growth in stainless steel production in China. The country's nickel consumption is forecast to grow by 4.5 percent to reach 990Kt toward the end of 2015. According to the World Bureau of Metal Statistics (WBMS), China's imports of refined nickel surged by 64 percent y-o-y in the first 8 months of 2015, while imports of ferronickel rose by 152 percent over the same period, which is expected to drive down nickel demand in 2016. China has registered unusual nickel stock movements since early 2014, when Indonesia introduced a ban on exports of nickel ores, resulting in greater nickel ore imports from the Philippines. Nickel consumption in China is also being hit by weakening activity in the stainless steel sector amid softening demand for stainless steel, both in China and abroad. In March 2015, the EU, along with India and other steel consumers, introduced anti-dumping import duties on stainless steel cold-rolled flat products from China. Improving economic conditions in OECD countries, including the US, the EU and Japan, and the recovery in demand for both South Korea and Taiwan is expected to increase nickel demand in these countries through 2016.¹⁵

— Global demand for nickel is expected to increase by 4.5 percent from 1.9Mt in 2015 to 2Mt in 2016, driven by strong growth in industrial and manufacturing activity in the US and Europe. US nickel consumption is forecasted to increase by 5 percent to 163Kt in 2016. Slowdown in industrial production in the US depressed nickel consumption during Q3, 2015, but both the stainless steel markets and the aerospace sector have recovered and will continue to grow in 2016–2017. Growth in US consumption is forecast to be supported by increased production of automobile components, household appliances and growth in the residential and commercial construction sectors.¹⁶

— During Q2 and Q3, 2015, nickel consumption in Italy and Germany — major nickel consumers in Europe, was held down by slow economic growth. However, it is expected that the real GDP growth in the eurozone will edge up from an estimated 1.5 percent in 2015 to an average of 1.6 percent per year in 2016–2017, indicating recovery in industrial development. Hence, nickel demand will remain on an upward trend with apparent consumption of nickel to accelerate from 1.5 percent in 2015 to 6 percent y-o-y, on average, in 2016–2017.¹⁷

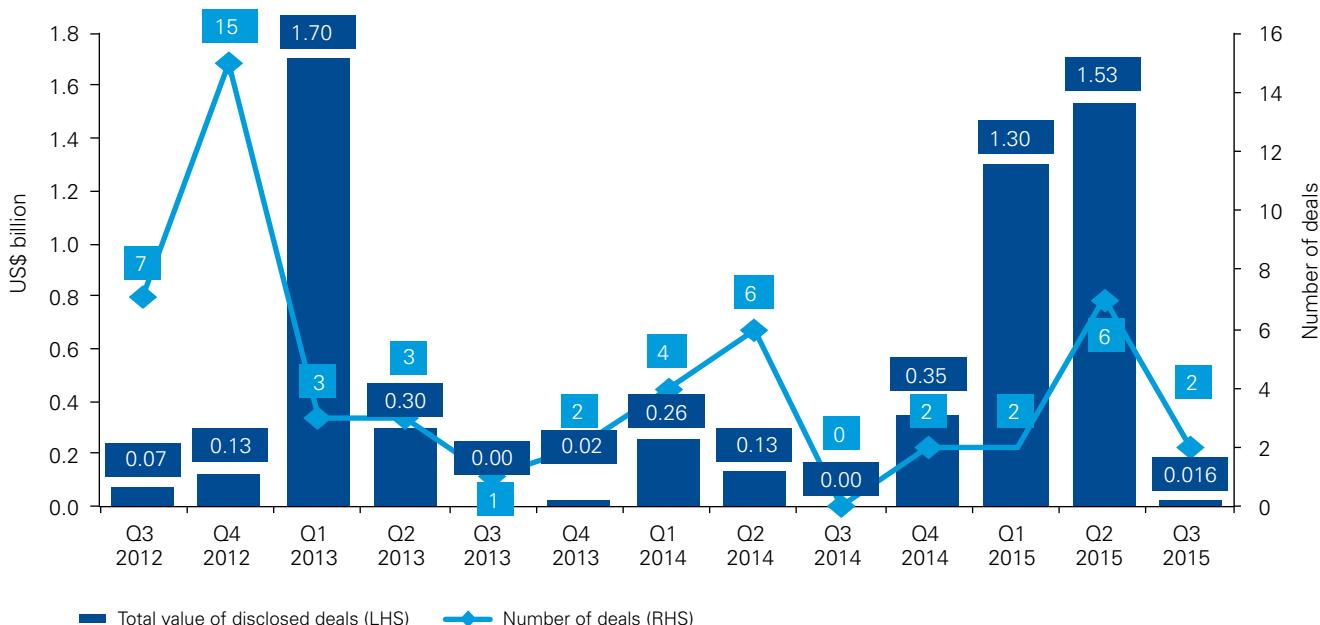
Key developments

Ownership changes¹⁸

The total value of six major deals announced in Q2, 2015 was US\$1.5 billion, compared with two deals in Q1, 2015, valued

at US\$1.3 billion. Similarly, the total value of two major deals announced in Q3, 2015 was US\$0.016 billion.

Figure 5: Value of major deals announced in Q2, 2015 and Q3, 2015



Source(s): Mergermarket and Thomson database accessed December 2015; KPMG analysis.

¹⁵ "Resources and Energy Quarterly, June 2015," Bureau of Resources and Energy Economics (BREE), Australian Government; "Commodities: Nickel — demand," EIU website, accessed November 2015.

¹⁶ "Resources and Energy Quarterly, June 2015" BREE, Australian Government; "Commodities: Nickel — demand," EIU website, accessed November 2015.

¹⁷ "Commodities: Nickel — demand," EIU website, accessed November 2015.

¹⁸ Deals: Search, Mergermarket, accessed November 2015.

Table 1: Nickel deals in Q2, 2015 and Q3, 2015

Date announced	Target	Target nation	Acquirer	Acquirer nation	Status	Value of transaction (US\$ millions)	Stake (%)
25 Jun 2015	African Rainbow Minerals Limited (Dwarsrivier Chrome Mine)	South Africa	Assore Limited	South Africa	Announced	37	50
4 May 2015	CuDeco Ltd.	Australia	Focus Sun Holdings Ltd	China	Announced	40	14
7 May 2015	Emerging Power Inc.	Philippines	Nickel Asia Corp	Philippines	Announced	21	66
10 April 2015	Geogen Corp.	Philippines	Nickel Asia Corp	Philippines	Completed	16	100
28 Sept 2015	Glencore (Araguaia nickel project)	Australia	Horizonte Minerals plc	UK	Announced	8	N/A
19 Jun 2015	Glencore plc (Cosmos nickel mine)	Australia	Western Areas Ltd	Australia	Announced	19	N/A
25 May 2015	Sirius Resources N.L.	Australia	Independence Group NL	Australia	Completed	1,400	100
16 Sept 2015	Wallbridge Mining Company Limited (Four Parkin properties)	Canada	Lonmin plc	UK	Announced	8	50

Source(s): Mergermarket and Thomson database accessed October 2015; KPMG analysis.

Regulatory updates

Table 2: List of recent regulations in the nickel industry

Country	Regulation	Description
New Caledonia	Lifting ban on laterite ore shipments to China ¹⁹	In October 2015, New Caledonia's government approved 300Kt of laterite ore to be exported to China by MKM Group over the next 18 months, effectively lifting its ban on shipments to China introduced in August 2015.
Indonesia	Government confirms no end to nickel export ban ²⁰	In September 2015, the Indonesian government rejected the speculation that the country was preparing to relax regulations banning the export of bauxite and nickel ore — a development that would send already pressured nickel prices lower and impair the fortunes of companies including Norilsk Nickel, the world's biggest nickel miner.
Colombia	Increased royalty payments ²¹	In May 2015, the national mining agency (ANM) of Colombia issued a ruling setting royalty payments in nickel mining based on average monthly US and European nickel prices, instead of at freight on board (FOB) rates from the port of Cartagena, as established by law.

¹⁹ "New Caledonia's lifting of ban on Chinese laterite ore exports seen little benefiting NPI producers", via Factiva, accessed December 2015.

²⁰ "Indonesian officials say no end to nickel export ban; smelter ramp-up delayed", via Factiva, accessed December 2015.

²¹ "Colombia's Cerro Matoso slams royalty change", via Factiva, accessed December 2015.

Projects

Table 3: Cross-section of global projects in nickel mining industry*

Project	Country	Operators/Owners	Potential start year	Nickel production (Ktpa)
Acoje Laterite Nickel Mine	Philippines	DMCI Holdings Inc. (Operator)	N/A	24.5
Agata North Laterite Nickel Project	Philippines	TVI Resource Development Philippines, Inc. (Operator)	2016	21.0
Decar Nickel Project	Canada	Cliffs Natural Resources Inc. (Operator)	N/A	37.4
Dumont Nickel Project	Canada	Royal Nickel Corporation (Operator)	2016	470
Honeymoon Well Nickel Project	Australia	MMC Norilsk Nickel OJSC (Operator)	2017	45.0
Kalgoorlie Laterite Nickel Project	Australia	Heron Resources Limited (Operator)	N/A	37.0
Marlborough Laterite Nickel Project	Australia	Gladstone Pacific Nickel Ltd (Operator)	2017	63.0
Mayaniquel Laterite Nickel Mine	Guatemala	Cunico Resources NV (Operator)	N/A	36.5
Minago Nickel Project	Canada	Victory Nickel Inc. (Operator)	N/A	11.0
Mindoro Laterite Nickel Project	Philippines	Intex Resources ASA (Operator)	N/A	40.0
Ronnbäcken Nickel/PGE Project	Sweden	Nickel Mountain Group AB (Operator)	N/A	26.0
Wingellina Laterite Nickel Deposit	Australia	Metals X Limited (Operator)	N/A	40.0

Source: Company data accessed December 2015.

* Note: Project names are hyperlinked to source links.

The list is not exhaustive and contains only a limited number of projects.

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Daniel has over 14 years of experience working within the mining industry with a focus on South American based clients. He has also acted as project lead on a significant number of special engagements in the mining industry, including comparing mine site accounting policies and internal control advisory, IFRS conversions, US GAAP conversions, financial due diligence, reviewing financial valuation mine models, as well as a large amount of work in prospectus share and debt offerings in both Canada and the US.

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