

Nickel

Ni



Uses: 80% of nickel is used to make alloys for industrial purposes, the main alloy being stainless steel

Factors influencing demand:

As stainless steel production is its main use, the demand for this product determines the demand for nickel



Image courtesy of BHP Nickel West



Image courtesy of Minara Resources

Yokogawa's involvement with nickel

We have control systems in these mines



BHP Billiton Nickel West

BHP Billiton Nickel West's operations are located in the northern Goldfields area of Western Australia. It is a fully integrated mine consisting of mines, smelter and a refinery. The mines are the Leinster underground mine and the Mt Keith open cut. At Kalgoorlie there is a concentrator and smelter and at Kwinana the refinery is located. Nickel West produced 46,000 tonnes of nickel in 2012. Nickel West's processing and concentrating processes are control by Yokogawa Centum DCS systems. Nickel West is also a user of Yokogawa AXF flow meters, EJX pressure transmitters and analytical products, Rotamass and Rotameters.



Murrin Murrin

GlencoreXstrata's Murrin Murrin nickel and cobalt mining and refining project is in the North Goldfields area of Western Australia. In 2011 production was 30,000 tonnes of nickel and 2,100 tonnes of cobalt. The ore processing comprises pressure acid leaching, mixed sulphide precipitation and cobalt and nickel refining. Murrin Murrin's processing and refining processes are controlled by Yokogawa Centum DCS systems with the Exaquantum plant information system and the PRM plant resource manager. Murrin Murrin is also a user of Yokogawa AXF flow meters, EJX pressure transmitters and analytical products, Rotamass and DY vortex meters.

Yokogawa Instrument Users

- **GlencoreXstrata's Cosmos mine**
 - northern Goldfields Western Australia
 - Yokogawa AXF flow meters
 - EJX pressure transmitters and analytical products
- **First Quantum Minerals Ravensthorpe mine**
 - southern Goldfields Western Australia
 - Yokogawa AXF flow meters and analytical products
- **Panoramic Resources Savannah mine**
 - south Goldfield of Western Australia
 - Yokogawa AXF flow meters
 - EJX pressure transmitters and analytical products
- **Vale – New Caledonia**
 - Yokogawa AXF flow meters
 - EJX pressure transmitters and analytical products