



Queensland Nickel is a global leader in the production and distribution of high-quality nickel and cobalt.

### Our Process

Queensland Nickel performs two key functions – ore processing and refining.

#### Ore processing



The ore processing section is where the ore is dried, ground, roasted and leached in an ammonia solution to extract the nickel and cobalt.

Drying and grinding prepares the ore for roasting, which reduces nickel and cobalt to a metallic states so it can be dissolved in Ammonia.

In the roasters air and oil are combusted in a series of chambers at about 740°C and is then cooled to about 250°C and added to the ammonia solution.

Once the ore is in the solution it is aerated and washed in eight large tanks, called thickeners. The slurry inside the tanks is slowly agitated to allow the product materials to settle and the product liquor – containing nickel and cobalt – is pumped off the top.

#### Metal refining

In the metal refining section of the Refinery the nickel and cobalt are recovered using unique solvent extraction technology developed by the Refinery's technical team.

### Our Products

Queensland Nickel's core nickel product is nickel metal compacts. They are about 99 per cent nickel and are most commonly sold to produce stainless steel. The Refinery also produces nickel oxide and nickel carbonate.

Queensland Nickel's core cobalt product is most commonly used in rechargeable lithium-ion batteries.



#### QUEENSLAND NICKEL

Greenvale Street, Yabulu,  
QLD 4818

Phone: 4720 6200  
[www.qni.com.au](http://www.qni.com.au)



## Utilities

### Gas Plant

All gases used in the treatment process at the Refinery are produced on site at the Gas Plant. The main products created are aqua ammonia and hydrogen sulphide. Hydrogen and ammonia are also produced at the Gas Plant.

### Power Plant

Queensland Nickel generates its own power through a coal-fired power station that produces high pressure-steam.

The steam has its energy extracted in three turbines to generate power required for plant operations.

### Coal seam methane gas

Coal seam methane gas has recently been introduced to various parts of the Refinery.

The gas is an environmentally friendlier and safer energy source – reducing CO<sub>2</sub> production and using new safety-instrumented systems and burner management systems.

There are plans to expand the use of coal seam methane gas further in the plant in the future.

### Water Recycling Facility

As part of its environmental commitment, Queensland Nickel has worked hard to introduce water efficiencies at the Refinery.

The Refinery's Water Recycling Facility on site has significantly reduced the Refinery's consumption of water from the Black River bore field.

Wastewater from the refining process is brackish and unsuitable for direct reuse in the Refinery.

The water was traditionally stored in tailings ponds for evaporation or discharged into Halifax Bay under environmental authority.

The \$25 million Water Recycling Facility treats wastewater from the nickel refining process, which allows it to be reused in the plant.

The facility has also enabled the Refinery to become a zero discharge site, ending the practice of releasing wastewater into Halifax Bay.

