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Good morning, Ladies and gentlemen.

This conference is one of the most important nickel conferences on the calendar. I am sure once again it will be stimulating and thought provoking. I am very grateful to SSB and AJM for their invitation to speak.

It seems to me that there are perhaps four key areas that our industry must address if it is to prosper.

The first of these is the outlook for supply, demand and hence, allegedly, prices. I am coming to the conclusion that perhaps prices don't actually have much to do with supply and demand. I sincerely hope I am wrong, but when one sits with a full order book, prices around $US2.00/lb, and more often than not a positive correlation between London Metals Exchange stocks and prices – stocks down, price down – I prefer to leave this crystal ball for others`, in particular the courageous Alan Heap, to gaze into.

The second is the flow of greenfields projects – I am going to leave that one to one side as well. In a recession it is difficult to make a convincing case for adding large amounts of new capacity

The third is the attraction of investment to our industry. The nickel industry has got something of a reputation for destroying value. This is, I'm sorry to say, not undeserved. Showing investors how they can avoid the ways of the past, that they can make money in Nickel, by investing with companies with proven track records, for example, is one theme running through my talk today.

The fourth area is all about our customers, both first and end-use customers. We are still very much, particularly in Australia, what Brian Gilbertson has called a "dig and deliver" industry. My belief is that this is pretty dinosauric. The syndrome of "my project's better than yours, but let's get them both going" is a major route to value destruction.

We have a great product. Amidst the doom and gloom, let's not forget this. Nickel product serves society in ways which are, and will continue to be, hugely beneficial to our quality of life. As an industry we must work with our customers to preserve and grow our end use markets. If we do not, all the great nickel projects of the future – and I am sure we will hear of many in the next two days – will be of no value at all.

At the outset, I would like to thank Peter Cranfield on BHP Billiton Stainless Steel Materials, and also Bill Molloy of the Nickel Development Institute, for their help in preparing this presentation.

SLIDE 2 Nickel Intensity of Use

This slide shows how the intensity of use of nickel has grown over the last 50 years. The comparator is Industrial Production (IP).

Industrial Production, the index of manufacturing activity, has a closer correlation with metals use than GDP. We have presented the data in terms of thousands of tonnes of western world use per unit of industrial production.

Here the base year is 1983=100. The IP index in 2000 was 167. Nickel demand was around 1million tonnes, equating to just over 6,000 t per IP unit. The smoothed data here is a 5-year moving average.

Whilst copper and steel have shown significant decreases in their intensity of use over the past 50 years, nickel and Al show increases. In the case of Ni, this is about 30% over the period. After a flat period between 1970 and 1990, Nickel has shown a resurgence in the 1990s.

Indeed, it is clear that Ni has outperformed economic growth over the past 50 years, and particularly in the past decade. Our prognosis is that, on the back of Stainless Steel, nickel will continue to outperform.

SLIDE 3 Nickel Industry Structure

This slide looks at the value chain of nickel.

On the right, mine production. On a global basis, some 2/3 of Nickel production is still produced from sulphides, most of which, outside Australia, are underground. About 1/3 of Nickel production is from oxide ores all of which are open pit. Clearly with the lack of major discoveries in sulphides, the balance is likely to shift to lateritic oxide ores in the future.

You can see that the industry is highly integrated, with nearly 90% of mine production being processed in-house, although in many cases at a different location from the mine.

Very little sulphide material is custom smelted or refined. This is essentially restricted to exports from WMC and a few minor producers in Australia, to Finland and Canada

Less than 10% of oxide ore is traded. This represents purchases by Japanese FeNi smelters and Yabulu from New Caledonia, Indonesia and the Philippines.

Turning to our customers, on a first use basis roughly 2/3 of primary nickel is used in stainless steel and 1/3 in other uses.

The final end uses are spread right across almost all manufacturing activities. They include most of the high growth areas, including, for example, NiMH batteries in electronics.

SLIDE 4 Stainless Steel Value Chain

This is a rather busy slide. It shows what goes into Stainless Steel, in terms of value and volume. It also emphasises the end uses of Stainless Steel in terms of diversity and growth.

The left hand column shows the raw material inputs into stainless steel production on a material balance basis.

To produce the current volume of around 19Mt of stainless slabs would require the following purchased materials:

- 4.5Mt of stainless scrap, value around US$2.5bn;

- 650kt of primary nickel, value around US$4bn

- 4Mt of FeCr alloys and 7Mt of carbon steel scrap, summing up to just over 16Mt, value around US$2.7bn.

The balance of under 3Mt is provided largely by runaround scrap.

Under normal prices the value of purchased raw materials is around US$10bn, of which primary Ni represents 40%.

Ignoring the runaround scrap, the volume of purchased materials - i.e. what goes in the gates of the stainless mill - is similar to what comes out around 16 – 17Mt of stainless mill deliveries.

Of what is produced by the Stainless Steel Mills, Approx. 75% is austenitic grades (AISI 300 Series), just under 25% are ferritic and martensitic grades (AISI 400 series) and a very small volume largely in India are manganese containing grades - AISI 200 series. Under normal stainless steel prices the value of mill shipments is of the order of US$ 30bn.

Flat products account for 70% or more of stainless shipments and long products the balance.

As far as end uses are concerned, automotive, consumer durables and building and construction are important for ferritic grades. The austenitic grades are used in a greater diversity of applications where higher specification physical and chemical properties are required.

In general, stainless steel enjoys high growth at the expense of carbon steel and other materials, because it is:

- Cheap (unfortunately a little too cheap right now)
- Superior in corrosion resistance and high temperature performance
- Has other important physical and chemical properties
- Has a sophisticated recycling industry behind it ensuring value in recycling
- Low life-cycle cost

SLIDE 5 Nickel Properties in Use

In more detail, the winning properties of Nickel are listed here:

At 1453 oC, Nickel has a very high melting point. It confers high temperature strength to its alloys

Its other most important property is to confer corrosion resistance to acids, alkalis and oxidising agents. So Ni does not get consumed in use. It is not destroyed and can easily be recycled

Nickel has a face-centred cubic crystal structure, conferring ductility. It can therefore be drawn or extruded easily, to form pipes, saucepans etc

Nickel alloys also have controlled expansion characteristics. They also show very good work-hardening properties, which, as we will see, makes them of great value in absorbing the impact energy in crash situations

Nickel also forms alloys easily, can be deposited by electroplating, and exhibits catalytic behaviour. Ni and Ni containing alloys are potential substitutes for PGMs in certain catalytic uses, and at much lower cost.

These are the properties which make Ni potential of great value to society

SLIDE 6 Capital Efficient Growth

This slide shows the development of BHP Billiton's nickel production capacity over the past 5 years.

The blue bars refer to the right hand scale and represent Nickel production capacity either acquired or constructed by BHP Billiton.

In 1994 we acquired a non-controlling interest in Cerro Matoso, and then in 1997 were able to acquire most of the balance of the Cerro Matoso shares in the Colombian Government's privatisation programme.

In 1998 we acquired 100% of QNI.

In January of this year we achieved first production from the US$300m expansion at CMSA.

For 2006 we have included an estimate of construction costs of the Ravensthorpe and Yabulu expansion project. You can see that the projected volumes of these six events amount to about 120kt/a Nickel projected by 2006. However, the only real new capacity added to date has been the 25 ktpa at Cerro Matoso. We at least are not responsible for any current over-supply.

The left hand scale represents the cost in terms of US$ per annual pound of capacity. In other words, a plant producing 30,000t or 66m pounds per year at US$ 12 - 15 per annual pound capital cost would cost 66m x 12 = US$800m to US$ 1bn.

There is often quite a gap between the claimed capital cost of new projects, and the real full cost the owners actually have to fund. Often in the “my project is cheaper than yours” competition, only the cost of the plant itself may be quoted. To this one really has to add the owner’s costs, working capital, overheads and infrastructure, as we have done here.

A review of recent plants built confirms that the true cost of building a greenfield Nickel plant including infrastructure, owner’s costs, working capital is indeed around US$12 – US$15 per annual pound capacity. If things go wrong it can be higher. Nickel prices well in excess of US$ 3/lb would be required to allow these plants to meet their cost of capital. This is a major cause of value destruction for the investor in Nickel.

At BHP Billiton we have striven to ensure a decent return to our shareholders, and our average cost of building or acquiring capacity has been between US$ 6 – 7 per annual pound capacity.

SLIDE 7 Nickel is Used, not Consumed

Because of the anti-corrosion properties Ni gives to its alloys, and the demand for scrap from the Stainless Steel melting industry, Ni is one of the most intensely recycled industrial materials.

In the UK, I have been told, one tonne of carbon steel dissolves every 90 seconds – lost as iron oxide to the environment by corrosion. With stainless steel you can at least keep what you buy!

This slide shows the recycling pattern and time in use for the major applications.

All major uses of Ni, except for plating, have high recycling rates.

The uses of Ni also have long average periods in use before recycling occurs – thereby saving energy and other costs per unit of metal in use.

Because of this combination of long life cycle and high recyclability, when life cycle costing is introduced, stainless and nickel containing alloys are usually clear winners. I will show you some examples of this in the slides that follow

Nickel is not consumed – it is used, and can be re-used almost indefinitely. About one-third of the total nickel demand each year is met from recycled materials.

SLIDE 8 SD with Nickel

To those of us committed to sustainable development, Ni, especially through Stainless Steels, brings many benefits to society –

- Clean water
- Better and safer public transportation
- Safer, cleaner cars and light vehicles
- Less pollution
- Cleaner food
- Cleaner electricity

- Lower life-cycle costs

But because some nickel compounds are known carcinogens, poorly informed regulators can put at risk many of these benefits.

The Industry Associations – NiDI and Nipera – are doing a lot of good work to try to inform and educate regulators. This is, however, a slow and expensive task. The more industry can support it, the more resources we will be able to deploy to defend our markets. It is in the interests of all involved in the nickel industry to support the work of these associations.

A licence to produce, and access to markets, increasingly depends on:

- Communicating effectively the benefits which nickel and its products offer,
- Understanding impact of nickel on health and the environment,
- Providing credible socio-economic data on Ni production, use and recycling, and
- Taking voluntary Product Stewardship action to address production or use that is not responsible.

SLIDE 9 Growth Markets – Water treatment

I would now like to indicate some of the problems of modern society, and show how stainless steel and other Ni containing materials can assist. Or better, how these problems can actually be opportunities for us in the nickel industry and our customers.

My first example is the issue of clean drinking water.

Stainless steel has a number of key applications here, largely because it does not corrode, and hence has a long life in wet oxidizing conditions.

With privatisation of water companies in the UK, and return on investment being perhaps more important that it was under public ownership, life cycle costing has been applied. As a result, existing iron pipes are being replaced with, or lined with, stainless pipe.

The physical properties of austenitic stainless steel mean stainless steel pipes are much less liable to rupture under stress, and hence are the materials of preference in earthquake zones such as Japan.

In addition, the resistance of stainless to corrosion means it can be used as the material of choice for devices to treat water with UV or ozone – the more environmentally responsible treatment routes.

SLIDE 10 Sewage Treatment

Sewage is not the most pleasant of topics, but modern urban societies produce a lot of it.

Sewage treatment presents a highly corrosive environment, and materials such as galvanised or coated steels have short lives.

Again public sector ownership tended to favour use of the cheapest materials, but with a new focus on life cycle costing, stainless found to give superior economic performance on a fully costed basis.

SLIDE 11 Food Processing

As a society we are consuming more and more processed food, either bought to prepare at home or for eating out.

A number of incidents have shown the extensive problems that can be caused by contamination in processed food.

Wasted food is a cost, and must be kept to a minimum.

The food industry uses stainless as its material of choice, because its resistance to oxidation, and attack by acid and alkali's means sterile surfaces can easily be maintained.

McDonalds, for example, kept to austenitic stainless for direct food contact surfaces even when Ni prices were high in the late 1980s. They switched back from ferritic to 300 series even for non-contact surfaces as soon as Ni prices fell back below $10/lb.

SLIDE 12

This picture shows that virtually all the equipment in a food processing area is made of stainless.

SLIDE 13 Public Transportation

Key issues for public transportation units are fuel efficiency, safety, maintenance and net life-cycle capital costs

Stainless steels give good strength / weight ratios

The corrosion resistance means there is no need to repaint (with associated occupational health issues of paintshops). Surfaces can be easily cleaned to appear bright and customer friendly.

In accident situations, their high work hardening absorbs impact energy much more than, say, Aluminium.

Stainless units have long lives and at end of life are recyclable

SLIDE 14 photo

SLIDE 15

The same safety considerations apply to cars, where the work hardening of stainless gives great advantages in its use in space frames.

In addition, new fuel-efficient high performance “common rail” turbo diesels produce much lower emissions. But they operate at higher temperatures and require much lower tolerances in their materials over these greater temperature ranges.

High Ni alloys, in this case variants on Ni-Resist cast irons are essential to this new generation of engines.

Ni-resist cast irons contain 18% Ni, and are used for the engine casing. Other parts require Alloy 713, which contains 60% Ni. Higher operating temperatures mean Austenitic stainless must be used for exhaust manifolds as well.

In addition, of course, the nickel bearing materials command a significant value when recycled.

SLIDE 16

And one must not forget the huge potential for Ni in NiMH batteries for hybrid and Fuel Cell driven cars.

The automotive sector could soon account for 15 % of Ni use – and recycling rates are high.

SLIDE 17 photo

SLIDE 18 Power generation

Power needs in LDCs such as India are huge. Gas turbine and combined cycle units result in lower greenhouse gases. Power is needed for both the old and new economies e.g. powering the Internet.

SLIDE 19

Flue Gas Desulphurisation

Coal burning power plants and other processing plants using coal or gas emit SO2, as the contained sulphur is burned during combustion.

Flue Gas Desulphurisation plants remove SO2 from boiler exhaust gases, capturing it as acid, or as gypsum by spraying with limestone slurry
The environments in these boiler stacks is highly acid and hot. Nickel base alloys are the preferred materials to withstand these extreme conditions

To give an example, and one both graphic and welcome one to those of you familiar with Seoul, South Korea will install 76 such units in the next 15 years.

Thus nickel plays an important role in cost-effective pollution control.

The photograph gives an idea of the size and scale of these FGD units.

SLIDE 20 photo

SLIDE 21 Civil Engineering

In environments where concrete is exposed to salt water, acids, pollution and varying temperatures, the reinforcing bar gradually corrodes away, especially at slab joins, or at expansion joints. The whole concrete structure fails, not because of damage to the concrete itself, but because of attack from inside the structure as the rebar rusts away.

In North America, a good example is provided by the large number of road bridges which were constructed after the war in a great infrastructure boom. These invariably are made of reinforced concrete, and a massive programme is now required to replace these structures. This is particularly so in coastal areas or in the north where roads are treated with salt in winter.

Life cycle costing demonstrates the clear economic advantage in using stainless steel rebar for sections of concrete exposed to attack by air, water and salt.

SLIDE 22 This slide shows the prospero Pier in the Gulf of Mexico.

In the background is a pier structure made of concrete using stainless steel rebar
In the foreground is the remains of a second structure, also of concrete, but using normal carbon steel rebar.

The question is, which is the older structure.

In fact the one in the foreground was built around 30 years ago, and is now completely destroyed. The one in the background was built around 60 years ago, was recently surveyed, and found to be in almost pristine condition.

SLIDE 23 Architecture

Stainless steel as cladding or as exposed structural elements offers a high strength material, does not need painting, and is very low maintenance.

More and more, architects are turning to stainless steel for innovative design. Some examples are quoted here.

Perhaps the most innovative and exciting is the use of stainless for roofs of major structures such as the Nagoya Dragons stadium in Japan.

SLIDE 24

Ladies and Gentlemen, there are two major issues which our industry has to address if we are to ensure a sustainable and positive future for the nickel industry;

The first is to secure sustainable markets.

Nickel, steels and alloys containing nickel, and nickel containing battery applications, when appropriately used, bring great benefits to the well-being of society.

The attitude of regulators, based in part on isolated but well publicised inappropriate uses of nickel in the past, for example nickel plated jewellery, puts at risk the contribution nickel can make.

Would, one asks, regulators ban glass for use in windows and drinking vessels, because quartz dust can give rise to pneumosilicosis?

But complaining is of no value. With your head in the sand you are not going to see the future, as it were. The nickel industry, and its customers, have no choice but to work with regulators to ensure the appropriate use of nickel is sanctioned, even encouraged, by regulation.

SLIDE 25

Lastly, nickel has enormous growth potential, but nickel bearing materials increasingly have to compete with plastics and coated steels. We also have to produce adequate returns for our investors. The cost of nickel units must therefore be competitive.

Much proposed new primary nickel capacity will simply be too expensive to create value at reasonable prices for those investing to fund it. Examples of value destruction are well known, certainly in Australia.

Technical innovation, supported by rigorous test-work, and particularly a rigorous approach to design and management of capital projects, are essential if our industry is to provide value to investors and customers in the future.

Ladies and Gentlemen, thank you.