BHP Steel

Submission to the Productivity Commission Review of Post-2005 Assistance Arrangements for the Australian Automotive Industry

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Executive Summary

- The automotive industry is an important customer for BHP Steel, accounting for annual sales revenues in excess of $300 million, and 14% of the corporation's annual steel sales (tonnes) into the Australian market.

- BHP Steel is one of the major manufacturing enterprises in Australia. BHP Steel employs over 9,000 people in Australia. Globally, the business has annual sales approaching $5 billion per annum.

- The automotive side of our business is highly sophisticated, and has been a driving force behind bringing leading-edge steel technologies into Australia, particularly in the areas of high-strength steels, tailor welded blanks, super deep drawing steels and corrosive resistant metallic coatings.

- BHP Steel would support programs developed to maintain and grow vehicle manufacturing in Australia. The success of Australian vehicle manufacturers and Australian automotive component manufacturers in maintaining and growing their market penetration, both locally and globally, provides a vital foundation for the further development and growth of all of the Australian manufacturing enterprises which form part of the automotive supply chain, including BHP Steel.

- BHP Steel's business has shared in the benefits of the industry's considerable progress and development over the last decade, and wants to see these successes continue into the future.

- To this end, BHP Steel supports the broad thrust of the policy recommendations put forward by the Federation of Automotive Products Manufacturers (FAPM) and the Federal Chamber of Automotive Industries (FCAI) in their submissions to the Commission.

- For BHP Steel's customers in this industry, an environment conducive to planning certainty is critical. The automotive industry is characterised by long lead-times with the release of new models by vehicle manufacturers every 3-4 years dictating this. A consistent theme running through our comments on government policy settings, therefore, is that these policies should take a strategic and longer-term perspective in line with the industry's normal commercial planning timeframes.

- In addition, BHP Steel offers the following comments on the three key policy areas of tariffs, market access and the continuation of the Automotive Competitiveness and Investment Scheme (ACIS) which are all being considered as part of this Inquiry.

Automotive Tariffs

- BHP Steel favours the Australian automotive tariff rate being set at a level that supports continuing investment and competitiveness of the automotive industry in Australia; and

- Any further reduction in Australia's automotive tariffs should be linked to firm and unequivocal commitments from key trading partners to substantially reduce their own tariff and non-tariff barriers relating to automotive products.

Market Access

- BHP Steel supports a continuation of the government's current strategy to improve access to foreign markets for Australian exporters, including automotive producers, through:

  (i) multilateral initiatives in fora such as APEC, AFTA and the new WTO round; and

  (ii) bilateral initiatives, particularly in strategic automotive markets such as Thailand, Malaysia, Indonesia and the United States.

- In bilateral free trade agreements, there is significant potential to negotiate outcomes which enhance market access for Australian automotive exports, and therefore help to grow demand for Australian-manufactured inputs, including steel.

Continuation of ACIS

- BHP Steel supports the continuation of ACIS because of the crucial role that it plays in underpinning our customers' investment plans, and offers the following suggestions in relation to an ACIS Mark II should it continue:

  (i) that the framework of an ACIS Mark II be confirmed within 12 months; and

  (ii) that the scheme has a long enough life to provide certainty to our customers in the context of their strategic planning decisions.

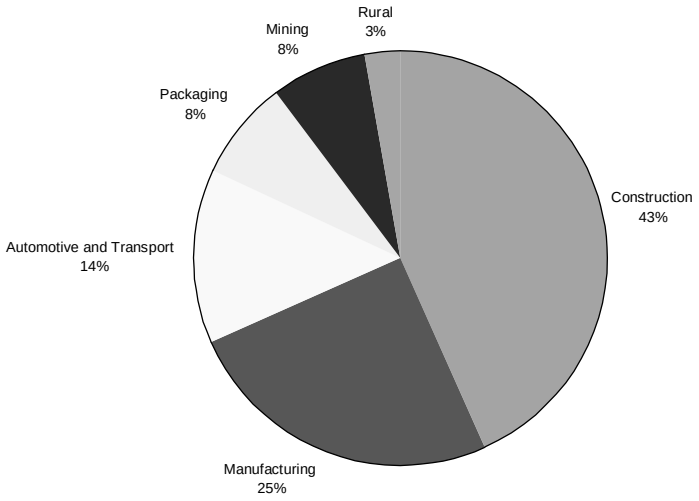
1. Overview of BHP Steel

BHP Steel is the leading steel company in Australia and New Zealand, supplying around 80 per cent of all flat steel products sold in these markets. The company's products are vital components in suburban houses (eg. Colorbond® roofing, appliances and whitegoods), landmark buildings and structures, popular makes of Australian produced cars, and containers for food and beverages.

BHP Steel specialises in the production of flat steel products, including slab, hot rolled coil, cold rolled coil, plate, tin plate and value-added metallic coated and painted steel products. Its steelworks at Port Kembla in New South Wales is the largest steel production facility in Australia and one of the world's lowest-cost producers of steel products. Steel rolling, coating and painting plants are located in Australia, New Zealand, Thailand, Malaysia and Indonesia. These facilities are complemented by a network of roll-forming facilities across the Asia Pacific region. We have a number of joint venture investments in the United States.

BHP Steel's sales of flat steel products in Australia amounted to approximately 2.4 million tonnes in the year ended 30 June 2001. The majority of these sales were to the construction sector (43%), the manufacturing sector (25%) and the automotive and transport sector (14%).

BHP Steel's sales tonnes in Australia by industry sector (%)
For the year ended 30 June 2001



BHP Steel employs over 9,000 people in Australia. Globally, the business has annual sales approaching $5 billion.

The company supplies customers in Australia, New Zealand, Asia, the US, Europe, the Middle East, the Pacific and elsewhere with purpose-designed products backed by comprehensive after-sales service, technical support, and transport and logistics capability

Going forward, BHP Steel is focused on enhancing its manufacturing excellence, further reducing costs, maintaining value in its existing businesses and pursuing selected growth opportunities, particularly in the company's primary markets of Australia, New Zealand and Asia.

BHP Steel seeks to develop tailored solutions to customers' product requirements, and is widely recognised for fostering the development of innovative steel solutions through its own research and through strategic alliances with world-leading technical partners.

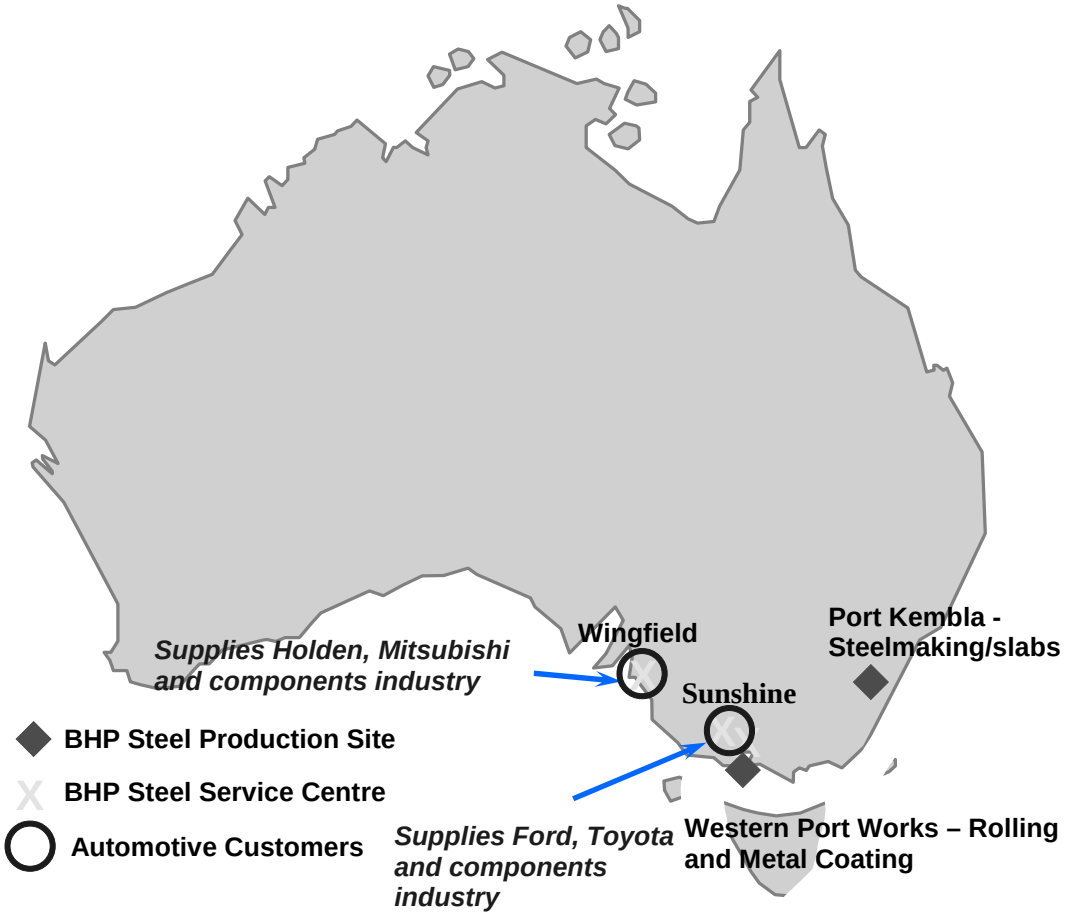
2. Overview of BHP Steel's Automotive Business

BHP Steel is a key supplier to the Australian automotive industry. It has established that position by maintaining long-standing relationships with Australia's four vehicle manufacturers, demonstrating a commitment to leading-edge product development and enjoying a close developmental alliance with the Australian automotive parts manufacturing industry.

BHP Steel's automotive business directly results in the employment of around 1,200 people and represents about 14% of BHP Steel's sales (tonnes) in the Australian domestic market. Automotive steels account for greater than 25% of Western Port Works' production.

BHP Steel's automotive steel manufacturing activities are situated in four key locations shown in the following diagram:

- Port Kembla (NSW) – Steelmaking Facility – Provides the raw steel in slab form with the tightly controlled chemistry required for automotive steels;
- Western Port Works (Hastings, Victoria) – steel mill where flat rolled products for automotive are produced;
- Sunshine (suburb of Melbourne, Victoria) – Processing and distribution facility; and
- Wingfield (suburb of Adelaide, South Australia) - Processing and distribution facility.



BHP Steel produces a comprehensive range of automotive steels for the Australian industry including hot rolled steels, cold rolled steels and metallic coated steels. An increasingly greater number of specific products within these groups are being produced with a specific customer, product or model in mind. In most instances the development work around these products is performed in conjunction with customers in order to ensure that the output from BHP Steel meets customer requirements. The trend is for a greater requirement for high-strength, super deep drawing steels for greater formability and non corrosive metallic coatings. Appendix 1 sets out some key milestones that BHP Steel's automotive business has achieved over the last three decades.

BHP Steel provides steels specifically engineered for automotive applications to a large range of Australian automotive producers including the four Australian vehicle manufacturers and over forty component manufacturers.

While BHP Steel does not export its automotive steel products directly to the rest of the world, the enhanced export performance of the Australian automotive industry has generated substantial flow-on benefits for BHP Steel. In 2001, in excess of 45,000 tonnes of BHP Steel's product was used in the manufacture of exported automotive vehicles and components. From a strategic standpoint, greater export opportunities for Australian vehicle and component manufacturers offer BHP Steel the greatest prospects for increased volumes and efficiencies. This fact is, no doubt, replicated across the entire Australian automotive supply chain. Hence, the policy initiatives that the government is already pursuing in relation to facilitating greater access to key foreign markets for Australia's automotive manufacturers are bringing benefits to the entire automotive supply chain. Trade and market access issues are discussed in more detail later in this submission.

3. BHP Steel - A Strategic Element of the Automotive Future

Steel accounts for the majority of a vehicle's weight and is one of the most significant material input costs for vehicle manufacturers. Therefore, steel is a strategic input to vehicle manufacture and is a fundamental determinant of a vehicle's performance.

The potential for great advances in steel technologies which can dramatically improve a vehicle's ease of manufacture, safety and structural performance, while at the same time reducing a vehicle's weight and emissions, are easily overlooked. The potential for light-weight alloys to displace steel is limited by the range of components in which such alloys can be commercially used.

World class steel research, product development and investments in process-enabling technologies undertaken by BHP Steel will play a key role in helping the automotive industry meet some quite fundamental challenges over the coming decade, including the need to:

- reduce vehicle weight thereby reducing emissions;
- reduce the cost of steel and the costs of the manufacturing processes in which it is used;
- ensure that vehicles being exported meet the anti-corrosion and other structural performance requirements that apply in destination countries; and
- achieve all of the above while improving the level of occupant protection in vehicles.

In the early 1990s when these kinds of issues were gathering momentum, BHP Steel joined an international consortium, under the auspices of the International Iron and Steel Institute (IISI) and worked with 35 other steel mills from 18 different countries to strengthen the position of steel as a relevant and modern material for automotive design. The result was the establishment of the UltraLight Steel Auto Body (ULSAB) program, the UltraLight Steel Closure (ULSAC) program and the UltraLight Steel Auto Suspension program (ULSAS). The Porsche Engineering Group was contracted to lead the ULSAB and ULSAC programs, while Lotus Engineering were contracted to lead the ULSAS program. The goal of these initiatives was to use leading-edge or near-term stretch-technology or process technology to design a vehicle body shell that met the so called "SAFE" principles of the program:

- **S**afe (better designed body shell, particularly in terms of occupant protection);
- **A**ffordable (in steel, using a relatively inexpensive manufacturing material);
- **F**uel-efficient (less weight leading to lower fuel consumption and emissions); and
- **E**nvironmentally-friendly (capitalising on the ease with which steel can be recycled).

It is estimated that the intellectual property generated through the UltraLight Steel research initiatives is valued at greater than $50 million. In making this patented know-how available to its Australian automotive customers free of charge, BHP Steel is helping diffuse knowledge about these technologies throughout the supply chain.

The leading-edge engineering developments that resulted from this intensive research process are now being applied and/or further developed by BHP Steel in Australia, particularly in the areas of:

- High strength steels;

- Tailor welded blanks;
- Super deep drawing steels; and
- Metallic coatings.

These new products that BHP Steel is in a position to deliver to the Australian automotive industry will enhance the industry's ability to meet its environmental and safety obligations. High-strength steels and tailor welded blanks have the potential to play a key role in helping Australia's vehicle manufacturers meet the new National Average Fuel Consumption (NAFC) targets, while at the same time meeting the government's new occupant protection standards for offset frontal impact and dynamic side impact.

These initiatives indicate how innovative developments in upstream parts of the automotive supply chain can have a strong impact in terms of consumer, safety and environmental outcomes. Therefore, in order to maximise their effectiveness, the overall policy settings for the automotive industry need to foster innovation throughout the industry, including in the upstream parts of the supply chain.

Some more detail about these innovative automotive steel products is provided below.

High Strength Steels

Over the last five years, BHP Steel has spent many millions of dollars developing a number of high strength steels exclusively for automotive use. These steels are designed to absorb more crash energy per kilogram and therefore, allow vehicle weight to be reduced, while improving occupant protection and lowering vehicle emissions.

BHP Steel has developed four notable high-strength steels in the last decade:

- Very high strength (VHS) Martensitic steel developed for tubular door intrusion beams that has found wider application in stabiliser bars, drive shafts and axles, as well as other automotive componentry;

- Bake hardenable steels were developed for high-strength dent resistant outer panel applications;

- TS440, a metallic coated high-strength steel development, delivering both a lighter and stronger product, while meeting corrosion resistance requirements of customers; and

- High-strength wide vanadium steel, developed for stronger, but lighter weight rear suspension components.

The development of the TS440 product, exclusively driven by the requirements of the automotive industry, was a major step forward for BHP Steel, as it demonstrated BHP Steel's ability to produce high-strength formable steel that was metallic coated (Galvanneal), which prior to this was only available via import.

Tailor Welded Blanks

A major innovation resulting from the ULSAB program was the extensive utilisation of tailor welded blank technology.

Development work by BHP Steel on this technology started in 1992, and by the time the first Australian-built car using this technology is produced, BHP Steel will have spent many millions of dollars perfecting this product and investing in the enabling production technology.

Traditionally, when the specifications for steel used in the structure of a vehicle are determined, the gauge and strength of the steel are set at lowest common denominator levels (thickest/heaviest), which will allow it to perform in the most demanding structural role for that component. With the application of tailor welded blanks, the gauge and strength can vary throughout the component to place steel where it is required and therefore optimise the structure.

In the past, this has meant that many structural steel components in a vehicle have been "overspecified" adding unnecessary weight to the vehicle, reducing its fuel efficiency and increasing vehicle emissions. In addition, the fact that the gauge and strength of the steel used in these components has been a "compromise" (eg. balancing the need for a side body frame that is strong enough to support a door, without making the entire frame too heavy), has often led to the need for additional manufacturing processes to be undertaken during vehicle assembly (eg. adding additional reinforcements to the door frame during the manufacturing process). This lack of flexibility in setting specifications for structural vehicle components has also made maximising occupant protection more difficult.

By allowing automotive engineers the freedom to specify the optimum steel thicknesses and steel properties for particular sections of structural components, tailor welded blanks facilitate all of the following:

- Optimised structural component manufacture resulting in weight reduction and lower fuel consumption and emissions, without compromising vehicle performance;

- Careful choice of steel thickness and quality bringing about substantial improvement in the strength and crash characteristics of vehicles, the elimination of reinforcements and reduction in noise, vibration & harshness (NVH);

- Lower manufacturing costs. Fewer parts and a reduced number of reinforcements reduces the number of manufacturing processes and die sets and their associated maintenance and storage costs. Available press capacity is also increased while assembly time is reduced;

- The simplified production process results in reduced capital investment, lower variable costs and higher productivity;

- Reductions in part complexity leading to simplified logistics, lower engineering design & development time, and reduced purchasing/administrative overheads;

- Elimination of the need for stiffeners and overlapping joints leading to improvements in corrosion resistance and eliminating the need for sealing work and sealing compounds;

- Improved part fit up leading to less scrap and rework and an improvement in vehicle quality; and

- Greater opportunities for simultaneous engineering with the added flexibility in the design and manipulation of major structural components.

The significance of the tailor welded blank technology goes beyond the emissions, safety, quality and efficiency gains set out above. It will also help Australian vehicle manufacturers position themselves in export markets.

All major vehicle manufacturers around the world use tailor welded blanks in their vehicles. There is a 30% compound annual growth rate in the take up of tailor welded blanks. The parent companies of Australia's four vehicle manufacturers all utilise the technology in their overseas manufactured vehicles. The widespread deployment of tailor welded blanks is a good illustration of how the steel industry can contribute to fundamental advances in vehicle technology.

Hence, if Australian produced vehicles are to succeed in overseas markets longer-term, they must embrace this technology in future model cycles.

Given the relatively small size of the Australian vehicle manufacturing industry, an industry-wide solution to the introduction of tailor welded blanks is required. BHP Steel is well placed to work with the Australian industry to achieve this outcome.

BHP Steel has established technical agreements with key centres of global research and development expertise overseas, particularly through the ULSAB consortium, to ensure that it can maximise these benefits for its customers, and successful implementation will require these linkages.

Super Deep Drawing Steels

BHP Steel plays a key role in developing new steels.

BHP Steel's customers are continually coming up with more complex parts, or combining several parts into one, which creates considerable demands on steel formability. Consistent with this move, limits of formability were pushed further recently, with the introduction of a new part by an Australian vehicle recently, which resulted in the development of a super deep drawing steel, with mechanical properties not previously possible from any formable steel in the BHP Steel product range, nor from any product in the imported product range. This new product improved customer yields by 28% by eliminating in-process yield losses (steel splitting), eliminating processing failures (machine time losses) and allowing reductions in steel thicknesses (further yield advantages and weight reductions). This product development showed what can actually be achieved with innovation and careful processing controls. This product remains available for unusually complex parts that may be developed in the future from the automotive and manufacturing sectors.

The development of these leading-edge steels, therefore, is an important contribution by BHP Steel to the ongoing improvements in innovation and technical efficiency being displayed by automotive component producers in Australia.

Metallic Coatings

A major focus for BHP Steel is on the development of corrosive-resistant metallic coatings for automotive applications.

This focus is being driven by the need to service export markets where there are more stringent vehicle corrosion specifications. The increasing level of export activity by BHP Steel's customers, therefore, will drive further innovations in this area.

4. BHP Steel – A Solution Provider to the Automotive Industry

Part of BHP Steel's success in transforming itself into a total solution provider for all things steel for the Australian automotive industry, has been the way BHP Steel integrates itself with the supply chain. There are a number of areas in which this has occurred.

Early Vendor Involvement and Simultaneous Engineering

The early vendor involvement (EVI) program involves customers in the selection of steels for new model designs. BHP Steel also utilises simultaneous engineering concepts, which together with EVI, have enhanced BHP Steel's ability to provide proactive solutions to its customers by better integrating the activities of all parties involved in the product development process.

For example, BHP Steel has recently been working closely with a customer to resolve a production issue with a high-volume problem component supplied to the domestic market and to the United States. A working group to resolve the problem has been formed involving production personnel, the tooling manufacturers, and technical and research personnel. BHP Steel has set up a laboratory simulation process through its research facilities to understand the process first hand, and identify potential improvements. The close working group has been able to understand some fundamental problem issues involved in the process which have led to discussions with the part designers, and an action plan to resolve the problem. The learnings from the exercise have been significant, and led to a first hand understanding of the complexities of such a process which would not have otherwise been possible. These learnings will be very applicable to the manufacturing sector as a whole.

There are numerous other examples of BHP Steel becoming involved in systems engineering in relation to products to be provided to export markets, and particularly in relation to the development of steels to be used in new products which are innovative and ultimately patented. The learnings from such initiatives are significant, with BHP Steel gaining significant knowledge and experience on the demands that such a process makes on the steel, and the attributes critical to success. Understanding the tooling and its design criteria is a further area of significant learning for BHP Steel. These projects provide opportunities for the gaining of first hand experience and expertise not attainable without such customer involvement.

Strategic Technical Alliances

BHP Steel's access to technology doesn't end at its own boundaries. The general depth of BHP Steel's engineering capability has been improved through strategic alliances with world-leading technical partners who provide enhanced technical assistance in steel selection and component design. This has also considerably reduced the time taken to commercialise innovative technical developments.

BHP Steel's automotive customers are global companies, and BHP Steel is integrating itself with the global steel industry through its global technical linkages. These strategic technical alliances are helping BHP Steel keep pace with global steel developments in the following important areas:

- Steel making;

- Coating technology;
- Component design;
- Diagnostic assistance; and
- Steel selection.

Just-in-Time Lean Manufacturing Capabilities

Historically, the automotive industry has been a leader in the uptake of just-in-time supply chain management. BHP Steel has worked with our customers to implement innovative just-in-time methods as required by our customers.

BHP Steel has been supplying the major car companies on very short lead times and via Kanban call ups for a number of years.

Given the impetus to transfer just-in-time culture, skills and processes into other areas of our business, BHP Steel embarked on a business improvement program in May 2001 known as Supply Chain Velocity (SCV). The SCV program focuses on using reduction of inventory as a lever for driving improvements in quality, customer responsiveness, delivery performance and of course improved cash flow. Inventory is reduced by controlling the levels of inputs (Raw Coil and Slab), Work in Progress (WIP) and finished goods, by the use of 'Kanbans'. The program is an important aspect of BHP Steel's lean manufacturing approach to business improvement .

Quality – QS-9000

The automotive management system standard, QS-9000, is more stringent than ISO 9002, and exposes suppliers to world's best practice expectations. Development of upstream suppliers, or sub-contractors is demanded and creates many opportunities for improvement throughout the supply chain. Average performance is no longer acceptable. QS-9000 allows quantification of supplier performance. The processes for new product development requires customers and suppliers to form multi-level problem solving teams, which also provides opportunities for the development of on-going cooperative relationships between BHP Steel and its customers. The QS-9000 process promotes a climate of continuous improvement and problem solving. When product issues occur the cross-company involvement produces long-term solutions, which is consistent with BHP Steel's goal of being a solution provider to the industry.

5. BHP Steel's R&D Capabilities

As the Australian automotive industry moves into the twenty-first century, it faces real challenges to sustaining growth and keeping up with global trends.

Recent years have also seen a shift by automotive manufacturers to more global "platforms" for automobiles. This shift makes it possible for efficiencies to be achieved through greater volumes. In addition, when selecting suppliers the automotive companies now expect a whole package or "total solution" rather than merely looking for a provider of componentry. For BHP Steel, these "systems" are often characterised by early vendor involvement (EVI), , and may include steel supply, information & knowledge supply, and manufacturing technical support.

As the automotive industry in Australia rises to meet the challenge of remaining competitive in this constantly changing global marketplace, the new demands placed upon BHP Steel by automotive customers drive the need for consistent infusions of capital and resources into research and development as well as new plant and equipment. To keep pace with the demands and needs of the Australian automotive industry, BHP Steel must continually invest in research and development.

In addition to providing total solutions and introducing new products, BHP Steel must make significant investments to bring new manufacturing technologies such as tailor welded blanks, and high-strength steels to the Australian automotive industry. A future technology could be tubular hydroforming, which is an efficient method for shaping and forming hollow components, at low to medium volumes, in some cases replacing two pressings welded together.

The wider base of supporting knowledge needed for automotive steel products in terms of their response to forming, shaping, welding and assembly, as well as performance after assembly (corrosion, crash, durability) demands that research is performed in order to provide the answers and solutions required by BHP Steel's automotive customers. Automotive companies are demanding more specific performance information. This previously came from test vehicles but is moving more to laboratory analysis and/or computer model predictions and relate to areas such as:

- High strain rate properties (to model crash performance);
- Fatigue performance (to model durability);
- Pressing (to model manufacturability in areas such as shape fix, press forces, drawbead design, effective lubrication and powdering); and
- Corrosion performance (to ascertain in-service performance).

BHP Steel has an ongoing commitment to automotive steel technology development. Broadly speaking, the main areas of focus are at BHP Steel Research Laboratories (Port Kembla). This involves a dedicated automotive project known as Auto 2010.

Laboratory facilities include investments in mechanical testing (tensile, hardness, etc), specialized metal forming tests (Erichsen test m/c), larger scale simulations (200 tonne press), welding (resistance spot) and the use of adhesives. The laboratory facilities also cover custom designed tests for friction, coating adherence and so on.

The Auto 2010 team also support the plant-based groups (Process/Product Development teams and the Customer Technical Service officers).

BHP Steel has forged strategic technical alliances with offshore centres of engineering excellence, to ensure that its development work here in Australia is at world's best standards. BHP Steel has also played an important technology diffusion role by facilitating visits by pre-eminent engineers from overseas to the Australian industry.

BHP Steel undertakes collaborations with various Australian universities and research organisations in relation to leading-edge automotive steel technology. For example, Deakin University has undertaken collaborative work on press forming with BHP Steel, an Australian vehicle manufacturer and a lubricant manufacturer through the so-called STAMP Program, which ran for five years.

These initiatives play an important role in leveraging BHP Steel's technical expertise and help diffuse its knowledge into other industries. However, there is currently a lack of Australian-based engineering facilities in certain areas. This has necessitated BHP Steel taking certain testing and development functions offshore – particularly in relation to fatigue testing and high strain rate property assessment which BHP Steel is planning to outsource to a company in Germany.

Therefore, BHP Steel urges the government to consider providing assistance in the establishment of new Australian-based "centres of engineering excellence" to facilitate:

- the establishment of fatigue testing facilities and high-strain rate property assessment facilities; and

- engineering collaboration between the industry and research institutions in relation to specialised automotive steels.

6. Environmental Responsibilities

BHP Steel has a clear focus on responsible environmental management and is aiming to have international standard ISO14001 (Environmental Management Systems) certification by December 2003.

Western Port Works in Victoria, the primary manufacturing centre directly servicing the automotive industry, has a strong environmental record.

BHP Steel is actively committed to improving the environment through enhancing existing manufacturing processes and developing stronger steel grades and pursuing technologies that reduce the weight of vehicles and reduce vehicle emissions.

As discussed in detail earlier in this submission, BHP Steel has developed (and are continually developing) high strength steels to help reduce the weight of vehicles and hence improve fuel economy. Involvement with programs such as ULSAB (UltraLight Steel Auto Body) , which is aimed at producing a lighter weight vehicle using steel is evidence of commitment to this objective. BHP Steel's involvement with tailor welded blanks, which are part of the ULSAB program, also supports the vehicle weight reduction objectives. Steel is a material which is easy to recycle. This is becoming a more critical consideration as there may be a requirement in Australia soon, as in Europe, regarding cars being returned to the manufacturers after their life for disposal and recycling.

The work done through ULSAB/ULSAC has demonstrated a 25% reduction in mass for body-in-white, and up to 29% for closures (doors, engine hood, boot lid). These features and benefits have been demonstrated to Australia's vehicle manufacturers through BHP Steel sponsoring Australian visits by leading world experts in this field. In addition, the continuing development regarding high strength steels will further enable weight reductions and improvements in vehicle crash performance.

7. Spillovers from Automotive Production into Other Industries

One important feature of the automotive industry is the leadership role it plays in the manufacturing sector in terms of technology uptake – both in relation to products and processes. Because BHP Steel is a diversified steel manufacturer, the spillover benefits from our automotive business to other product lines and other industries is clear to us.

The key spillovers generated by the automotive industry that are recognised by BHP Steel arise predominantly in the following areas:

- Just-in-time / lean manufacturing processes;
- Quality improvement; and
- Diffusion of new steel technology.

Service

In 1998, BHP Steel was able to take the learnings from its automotive market Supply Chain Management (SCM) strategy and embark on developing a just-in-time approach to the supply of steel into the building and construction market. BHP Steel successfully applied many of the lessons learnt and systems developed for just-in-time supply to the automotive industry to the building and construction market.

The SCV process has taken the 'Kanban' concept used to supply automotive customers with our finished goods and pushed it further up BHP Steel's supply chain into the production process. Kanbans are now in place between all major production units. Inventory is reduced progressively by reducing the size of the kanbans over time. As inventory levels are reduced system shortfalls are identified. These then become opportunities to be addressed in order to systematically sustain the low inventory levels. Continuous improvement is therefore driven in the areas of scheduling, quality, and unit reliability.

Quality

Involvement with the quality systems associated with the automotive industry (eg QS-9000) drives the improvement of the overall quality systems for the whole of BHP Steel, which are then applied to other sectors of the business (eg Building and General Manufacturing).

The day-to-day quality demands of BHP Steel's automotive customers also drives quality improvements across product lines for other industries. BHP Steel is continually working with automotive customers in relation to the quality of the materials provided. Corrective actions that are made to production lines which produce both automotive and non-automotive products naturally cascade down to other products which are produced using the same facilities.

Steel Technology

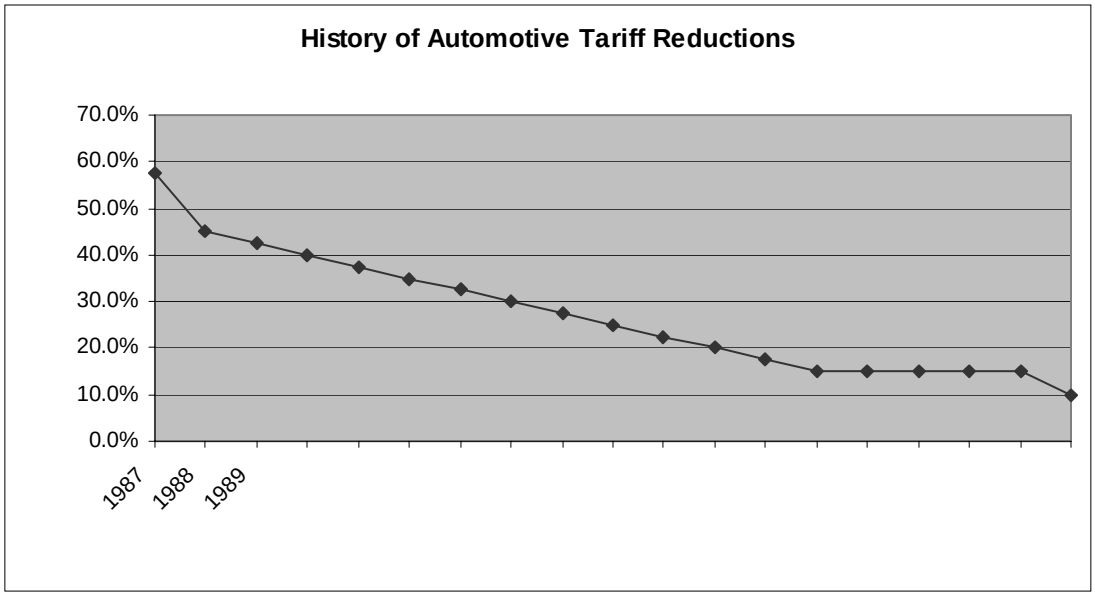
The research that BHP Steel undertakes in leading-edge steel technology developments assists in the retention of technical skills within Australia, which are then available to the wider manufacturing base. It also assists in the maintenance of a critical mass for engineering education institutions within Australia (employment in teaching). The automotive industry's links with universities and other research organisations such as the CSIRO and industry

associations such as the Society of Automotive Engineers of Australia SAE(A), ensures that leading-edge technologies developed in the automotive industry are diffused to other industry sectors.

BHP Steel, therefore, is firmly of the view that the presence of the automotive industry in this country has definite flow-on benefits to other industries which significantly improves their productivity and efficiency, as well as bringing an element of dynamic efficiency to the wider manufacturing industry. These dynamic spillover effects that the automotive industry brings should be borne in mind as important justifications for the continuation of sector specific measures for the automotive industry into the post-2005 period.

8. The Automotive Tariff

In 1987 the automotive tariff rate was 57.5%. Successive Car Plans have seen the automotive tariff reduced from this level to 15% in 2000, and it has been legislated that it will be further reduced to 10% on 1 January 2005. The history of phased tariff reductions is summarised in the following Chart:



Source: Productivity Commission, The Automotive Industry, Report No. 58, Appendix K and *Customs Tariff Amendment (ACIS Implementation) Act 1999*

When Australia's automotive tariff reaches 10% in 2005, Australia's tariff rate on passenger vehicles will be set at the same level as the common external tariff for the automotive producing European Union (EU) countries such as the UK, Germany and France.

By 2005, the average nominal tariff rate applied to automotive components will be well below the 10% applied to motor vehicles, because a significant number of automotive components are dutiable at 5% or free. This anomaly arises mainly in instances where some newer or more advanced automotive components are classified to non-automotive tariff headings which do not carry the full automotive rate of duty – particularly new electronic components used in vehicles. These tariff classifications are sometimes bound at a lower rate than the full automotive duty rate.

When nominal tariff rates that are applied to motor vehicles and automotive components are considered together, the average nominal tariff rate in 2005 is expected to be around 5.2%[1], well below the "headline" 10% rate for the industry, and only 2.4 percentage points above the average for all manufacturing industries.

This level of commitment to free and open trade in the automotive sector shown by Australian policy makers has not, however, been reciprocated by many other countries around the world. Recent research conducted by Deloitte Touche Tohmatsu and the Allen Consulting Group point to some notable examples of far more "protectionist" automotive trade policies. The following countries represent a sample of large and small automotive producers and markets,

[1] Source: Productivity Commission 2001, Trade and Assistance Review 2000-01, Annual Report Series 2000-01, AusInfo, Canberra, December, Page 15

major exporters to Australia and countries with fast growing automotive industries and fast growing imports to Australia.

- USA - where Sports Utility Vehicles (SUVs), which represent some 60% of their market, have a 25% tariff applied to them, where the Australian reciprocal arrangements are 5% because they are classified as "commercial vehicles";

- Malaysia - where tariffs are applied at rates of between 140% and 300% for passenger vehicles and 60% to 200% for 4WD and commercial vehicles;

- Thailand - where tariffs are applied at rates of between 60% and 80% for vehicles and 10% to 46% for components;

- Poland - where a complex regime of tariffs applies, ranging from 0% to 293% depending on vehicle type and country of origin; and

- South Africa - where tariffs on vehicles range between 23% to 40% dependent upon vehicle size and 30% for components.

In addition, this same research showed that many other countries which have low "headline" tariff rates have significant non-tariff barriers. For example:

- the headline tariff rate in Japan is zero, but the vehicle type approval system, design rules, environmental and safety standards and the complexity of the vehicle distribution system are all impediments to market access in Japan, to the extent that import penetration accounts for only 5% of the market; and

- the headline tariff rate in Korea is 8% for vehicles and from 10 to 13% for most components, however, ownership of a foreign vehicle previously guaranteed a tax audit, and this factor has kept import penetration to less than 1%.

For BHP Steel, growth in our automotive sales are dependent to a large degree on the success of our customers – particularly the four Australian OEMs which are all foreign owned. In turn, our customers' fortunes depend on the strength of the domestic market, export opportunities and their ability to invest. All four OEMs must compete for funds and export opportunities with sister plants in other countries, including home countries, and obtain Head Office approval for investments. Currently, government policy settings through ACIS, and to a lesser extent the automotive tariff, play an important role in assisting our customers to win the mandate from their overseas Head Offices for new investments in either replacement models, or totally new model lines, such as the new all wheel drive vehicles and sports coupe recently announced by Ford and Holden.

Accordingly, BHP Steel favours the Australian automotive tariff rate being set at a level that supports continuing investment and competitiveness of the automotive industry in Australia. Any further reduction in Australia's automotive tariffs should be linked to firm and unequivocal commitments from key trading partners to substantially reduce their own tariff and non-tariff barriers relating to automotive products.

9. Export Market Access Issues

The future of the Australian automotive industry is critically dependent upon its ability to attract investment capital and its ability to expand its production volumes through export. Increased export market access for Australian automotive producers is critical in relation to both of these requirements.

Larger automotive producing countries such as the United States, Canada and many European countries all have access to multi-member trade agreements, which deliver benefits to their automotive industries, enabling trade on a "free and open" basis between group members. Membership of such agreements is strategically important to these countries because it creates an extended domestic market, which underpins production volumes. In turn, these large markets act as an important driver of investment location decisions for large-scale automotive manufacturers. Australia is not currently a member of a multi-member trade agreement and as a result, does not have the investment attraction advantages that membership of such agreements brings. A country with access to a multi-member trade agreement will obviously be a more attractive place to invest compared to a country that does not have such market access. In addition, companies which have already invested in facilities in Australia, face the external tariffs of these countries when they sell their products overseas, and this may act as a constraint on their growth prospects.

BHP Steel supports the government initiatives now being pursued by Australia to address this situation, including the Asia-Pacific Economic Cooperation (APEC) forum, of which Australia is a member. A key objective of APEC is to promote economic integration and growth among the 21 Pacific Rim member nations including; Australia; Brunei Darassalam; Canada; Chile; Peoples Republic of China; Hong Kong; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; Republic of the Phillipines; Russia, Singapore; Chinese Taipei; Thailand; USA and Vietnam. Trade liberalisation is a key focus of APEC.

At their meeting in 1994, APEC member countries endorsed the Bogor goal of free and open trade and investment in the Asia Pacific region. The agreed timing for achieving this goal was 2010 for industrialised countries such as Australia, and 2020 for countries with developing economies.

While progress on trade liberalisation has been good in a general sense, with APEC economies reducing average tariff levels by one-third from 12% in 1995 to 8% in 2000, progress towards achieving this goal for automotive trade has been somewhat disappointing. Automotive trade access is still a major issue in many countries with which Australian automotive producers wish to trade. Thailand, Malaysia and Korea are three prime examples of this. BHP Steel considers that the Automotive Dialogue Group within APEC is a useful forum for maintaining focus on Automotive trade access and should continue to be supported by Australia.

BHP Steel also supports Australia's efforts to increase its engagement with the ASEAN Free Trade Area (AFTA), of which Australia is not currently a member. The member countries of AFTA include; Brunei; Indonesia; Malaysia; Phillipines; Singapore; Thailand; Vietnam; Laos; Myanmar and Cambodia. However, it is notable that at this stage automotive products are not generally covered by the AFTA agreement, and are unlikely to be included until at least 2005. BHP Steel supports closer economic integration with the ASEAN nations - this has potential to bring significant economic benefits to our customers, including the Australian automotive industry.

The next WTO round announced at the WTO Ministerial Conference at Doha, also offers some real prospects for greater international market access by Australian automotive producers.

In addition to our belief in the importance of multilateral trade initiatives, BHP Steel supports bilateral trade initiatives to expedite trade access. BHP Steel strongly supports initiatives being undertaken by the government in this regard – including with the United States, with Thailand and with other ASEAN nations.

In bilateral free trade agreements, there is significant potential to negotiate outcomes which enhance market access for Australian automotive exports, and therefore help to grow demand for Australian-manufactured inputs, including steel.

10. Recommendations

In summary, BHP Steel would support programs developed to maintain and grow vehicle manufacturing in Australia. Over the last decade, there has been a four-fold increase in exports by the automotive industry and in 2001 they reached $4.94 billion. Australia's automotive exports now exceed exports from traditional sectors such as wheat, beef and wool and are more than twice as large as exports of wine. The success of Australian vehicle manufacturers and Australian automotive components manufacturers in maintaining and growing their market penetration, both locally and globally, provide a vital foundation for the further development and growth of all of the Australian manufacturing enterprises which form part of the automotive supply chain, including BHP Steel.

BHP Steel is a member of the Federation of Automotive Products Manufacturers (FAPM) and is supportive of the general thrust of its recommendations to the Productivity Commission, and those put forward by the Federal Chamber of Automotive Industries (FCAI).

BHP Steel offers the following recommendations for consideration by the Productivity Commission:

Automotive Tariffs

- BHP Steel favours the Australian automotive tariff rate being set at a level that supports continuing investment and competitiveness of the automotive industry in Australia; and

- Any further reduction in Australia's automotive tariffs should be linked to firm and unequivocal commitments from key trading partners to substantially reduce their own tariff and non-tariff barriers relating to automotive products.

Export Market Access

- BHP Steel supports a continuation of the government's current strategy to improve access to foreign markets for Australian exporters, including automotive producers, through:

    (i) multilateral initiatives in fora such as APEC, AFTA and the new WTO round; and

    (ii) bilateral initiatives, particularly in strategic automotive markets such as Thailand, Malaysia, Indonesia and the United States.

Continuation of ACIS

- BHP Steel supports the continuation of ACIS because of the crucial role that it plays in underpinning our customers' investment plans, and offers the following suggestions in relation to an ACIS Mark II should it continue:

    (i) that the framework of an ACIS Mark II be confirmed within 12 months; and

    (ii) that the scheme has a long enough life to provide certainty to our customers in the context of their strategic planning decisions.

Australia's Onshore Steel Engineering Capabilities

- BHP Steel urges the government to consider providing assistance in the establishment of new Australian-based "centres of engineering excellence" to facilitate the establishment of:

  (i) fatigue testing facilities and high-strain rate property assessment facilities; and

  (ii) engineering collaboration between the industry and research institutions in relation to specialised automotive steels.

APPENDIX 1

BHP Steel's Automotive Products and History

The automotive specific product listing is extensive but can largely be grouped under Hot Rolled Steel, Cold Rolled Steel and Metal Coated Steel. More and more of the specific products within these groups are being produced with a specific customer or product or model in mind. In most instances the development work around these products is performed in conjunction with customers in order to ensure that the output from BHP Steel meets the requirements of these customers.

BHP Steel is at the forefront of developments within the automotive industry nationally. This is achieved through innovative research and development projects. Some of these are initiated by BHP Steel and others are driven by developments in the global automotive industry. There are a number of instances where cooperative agreements between BHP Steel and other major players in the automotive industry are formed in order to achieve efficiencies and innovation.

Some highlights relating to BHP Steel over the last number of decades are as follows :

1970's

- *High Strength Low Alloy (HSLA)* grades - BHP Steel's first major effort to provide formable High Strength steels to Automotive Industry

1980's

- Rationalisation of steel grades and thicknesses via FCAI Steel Committee

- Development of extra deep drawing Interstial Free(IF) steels: Cold-rolled uncoated (CA5SN-E) and metallic-coated(ZINCANNEAL®steel G3NS)

- $22 million for Electrolytic Cleaning Line (ECL) and Tension Leveller Recoil & Inspection Line(TLRL), for cold-rolled uncoated steels - provide cleanliness & improved surface finish

1990's

- $150 million for No.6 Metallic Coating Line (MCL) for wide automotive metallic-coated: Galvanised steel and ZINCANNEAL®steel for inner panel and exposed outer panel (skins) applications

- Super deep drawing steel for severe applications - cold-rolled uncoated(CA6A-G) developed for specific problem parts.

- Corrosion program, surface roughness program and its interrelationship with post painted panels and results presented at the Society of Automotive Engineers (SAE) 1996 Conference as an original paper in Detroit USA. Its findings guided the Automotive industry in selecting appropriate type and specification steels for applications in outer panels.

- Very High Strength (VHS): Martensitic steel developed for tubular door intrusion beams that found wider application in stabiliser bars, axles and driveshafts and other additional automotive componentry.

- Very wide high strength Hot-rolled (vanadium) steel developed for Automotive customer for their rear suspension.

- $23 million Vacuum Degasser investment for improved steel chemistry control for Super Ultra Low Carbon (SULC) steels.

- Bake Hardenable Steels for dent resistant exposed outer panel applications (high strength). Fourth steel company in the world to develop & commercialise hot dipped Metallic-coated bake hardenable steel. Entered into a technology transfer agreement with US steel mill to enable them to work with BHP Steel intellectual property. Dent testing rig designed and developed for the industry to improve steel for automotive applications.

- "Automotive 2010" Research Program initiated in 1990's to position BHP Steel in a competitive light for the future in Automotive steels , metallic-coating technology and applications.

- BHP Steel joined international consortium under the auspices of the International Iron and Steel Institute (IISI) and worked with 35 other steel mills from 18 different countries to strengthen the position of steel as a relevant and modern material for Automotive Design. Contracted Porsche Engineering Group for the UltraLight Steel Auto Body (ULSAB) program , the UltraLight Steel Auto Closure (ULSAC) program and Lotus Engineering for the UltraLight Steel Auto Suspension (ULSAS) program. World premiere launch of ULSAB at the Melbourne International Motor Show in February 1998. Progam results of ULSAC released 1999 and ULSAS 2000. All findings patented in the public arena for free access for all BHP Steel customers. Co-operation and cross pollination of ideas around the world beginning to occur as steel makers engage in helping their customers and each other provide the best steel solutions to the auto industry .

- STAMP program in conjunction with other corporate partners undertaken with Deakin University investigating the relationship between steel type, lubricants, die surface and press parameters to improve productivity in Automotive press shops.

- TS440 - start of Metallic-coated High Strength (HSS) steel development program as Automotive manufacturers shift to more corrosion resistant steels.

2000's

- UltraLight Steel Auto Body-Advanced Vehicle Concept (ULSAB-AVC) program commenced using Porsche Engineering Group as the contract partner. Again all findings patented in the public arena for free access for all BHP Steel customers.

- Further development work on the application of tailor welded blank technologies for the Australian automotive industry.

- BHP Steel Limited moving from being a supplier of steel to a Solution Provider with supporting services in product development via Early Vendor Involvement (EVI) programs , product and process application technical support and superior service (kanban and JIT supply). This has been progressing since the early 1990's and the vision is to become a full services provider for those customers who want us to be so in both product supply (including value added processing) and supply chain management.