

INCREASING VALUE ADDING TO AUSTRALIA'S RAW MATERIALS

Inquiry by House of Representatives Standing Committee on Industry, Science and Resources

SUBMISSION BY THE AUSTRALIAN ALUMINIUM COUNCIL

Introduction

The Australian Aluminium Council represents the aluminium industry in Australia. Its membership includes all operators in the mining and value adding sectors of this industry.

The aluminium industry is one of Australia's biggest, especially in relation to its regional impacts and its contribution to exports. It is a major success story for this country in adding value to an abundant raw material, in this case bauxite.

There is significant opportunity for this industry to grow further but there are challenges to be met if this potential is to be fulfilled.

The aluminium industry

The Australian aluminium industry involves production of bauxite (the raw material), alumina (an intermediate product, most of which goes to produce metal), aluminium metal, semifabricated products and fabricated products. The dimensions and relationships of the subsectors of the industry are shown in Figure 1.

Australia is a major player in the upstream sectors of bauxite, alumina and aluminium and a significant producer of semifabricated and fabricated products.

Some simple facts will illustrate Australia's place in the global structure of these industries :

- ❖ **Australia is**
 - The largest producer and second largest exporter of bauxite
 - The largest producer and exporter of alumina
 - Around 30% of the world's alumina comes from Australia
 - The fifth largest producer of aluminium
 - After USA, Russia, Canada, and China
 - The third largest exporter of aluminium
 - After Russia and Canada
 - A major exporter of aluminium can sheet
 - Alumina exports go to North America and Europe but also to South Africa, the middle east, Russia and China
 - In some cases forming Australia's largest export to these countries
 - Aluminium exports go mainly to Asia, especially Japan and Korea
 - Cansheet exports go to a number of countries in Asia and again form one of Australia's most valuable exports to these countries
- ❖ **Some key facts and figures for the industry in 1998/99 are :**
 - Employs over 30000 people directly
 - And over 75000 people when indirect jobs are considered

- Makes up one of the most important industries outside the capital cities, including
 - Hunter Valley
 - Geelong
 - Western Victoria
 - Gladstone
 - South west WA
 - Northern Tasmania
 - NT
 - Cape York
- Gross value of production of \$7billion
- Exports of \$5.8 billion
 - Making aluminium Australia's second largest export industry
- ❖ The industry has invested over \$5billion in the 1990s
 - And has the potential to invest well over \$5billion over the next decade
 - Provided the investment climate is internationally competitive
- ❖ The aluminium industry is a technological leader in Australia
 - Given Australia's leading position as a global producer there has been significant investment in the latest technology to stay at that leading edge
 - Australia is the world's most efficient region when it comes to the amount of energy used per tonne of alumina and aluminium produced.

Development of the Australian aluminium industry

The aluminium industry in Australia started in the late fifties and sixties with the development of the vast bauxite reserves on Cape York and eastern Arnhem Land. Towards the end of the sixties and into the seventies beneficiation stages were built in Australia to process the bauxite into alumina and aluminium metal. An aluminium semifabrication industry also developed in the late sixties and seventies, where the metal is turned into extrusion and rolled products for use in building and construction, transport, packaging, electrical applications etc. These developments were based mainly on Australia's abundant raw materials, including availability of cheap power.

Towards the end of the seventies the second oil shock caused significant changes to investment in the aluminium industry globally. Those countries that had limited supplies of energy, such as Japan, redirected investment in the aluminium industry to countries like Australia, which were more competitive. The Australian aluminium industry grew rapidly from the early eighties, with metal production rising from 263000 tonnes in 1978 to 1626000 tonnes in 1998. This expansion has been more or less continuous, with the latest investment at the Boyne Island smelter in Queensland only coming fully onstream in 1999. The growth of the alumina industry has paralleled the metal sector, rising from 6.8 m tonnes in 1978 to 13.5 m tonnes in 1998. The development of the industry is shown in Figure 2.

There is great potential for further expansions in both the alumina and aluminium sectors of the industry. The AAC has estimated that on reasonably conservative grounds the industry should grow by at least 30% by about 2010. For this potential to be realised the investment climate and the policy framework must be competitive with alternative locations for this investment. There is fierce competition for this investment, mainly from developing countries.

Value adding and the aluminium industry

Aluminium is one of the key success stories in Australia when it comes to an internationally competitive export industry that significantly increases the value of the raw material in Australia.

The key point is that the value of one tonne of aluminium metal is as much as 100 times greater than the value of one tonne of bauxite. This is not a clear measure of the amount of value added because a number of other inputs go into the transformation of bauxite to metal. However most of those inputs are produced in Australia so the bulk of the increase in value is of benefit directly to the Australian economy.

Australia has achieved this position with aluminium because of the following factors :

- **Abundant cheap supplies of quality raw material (bauxite)**
- **World competitive electricity and direct energy such as coal and gas.**
- **A basically effective and competitive economic system and investment climate**
- **A stable political environment**
- **A highly educated workforce with considerable advanced technological skills**
- **A large and lightly populated country that can deal responsibly with the environmental pressures of a resource based and energy intensive industry such as aluminium**

There is potential to maintain the current industry and to attract substantial new investment in this sector. To do this in the face of the intense competition from elsewhere Australia must offer an attractive future investment climate and continue to be able to deliver the other parameters that are necessary for a competitive aluminium industry.

There are some particular challenges that will have to be met if this industry is going to be able to continue to play a major part in Australia's future economic prosperity. The key challenges include:

- **Maintenance of competitive energy supplies**
- **Meeting the greenhouse challenge**
- **A competitive tax regime that competes for investment with other countries**
- **An industrial relations system that is effective**

Of these challenges it is greenhouse that poses the greatest threat to future investment and the maintenance of prosperity of this industry in Australia. If the response to the greenhouse targets agreed at Kyoto is to substantially increase energy prices to the Australian aluminium industry then the value added sectors will become uncompetitive and the industry will be forced back to exporting basically the raw material. This is unlikely to have any global greenhouse benefit as the investment in the aluminium industry will go mainly to countries not covered by the Kyoto targets. In many cases these countries will use coal to generate their energy needs for such industries and in some cases may even base this on imports of Australian coal.

The aluminium industry in Australia has responded to the greenhouse challenge by making the maximum effort to reduce emissions and to use energy more efficiently. However, Australia is already the world's most efficient region in terms of energy used per tonne of aluminium produced so there are limits on the further progress

that can be made in this direction in the short to medium term. In the longer term investment in the latest plants, new technology and development of lower emission power will bring substantial further emission reductions.

In the context of value adding , if the Australian greenhouse response is to substantially raise energy prices to the aluminium industry beyond levels in competing countries then the result will be to move the aluminium industry back towards a raw material exporting sector. This was shown quite clearly in a paper recently presented by ABARE, from which the Figure 3 is taken.

Such a move would cause significant cost to the Australian economy by destroying much of a world competitive industry. Such industries are very hard to come by and should not be sacrificed lightly. In this case there would be no global environmental benefit as the metal would be produced elsewhere using mainly fossil fuel and in countries with a poorer record of environmental management than Australia.

In dealing with the greenhouse response Australia needs to find an approach that does not destroy internationally competitive industries like aluminium. That should require the aluminium industry to continue to do everything possible to contribute to greenhouse gas abatement consistent with good commercial business practice. The industry is already a leading player in the Greenhouse Challenge Program and the Energy Efficiency Best Practice Program and has reduced emissions of Perfluorinated Carbons (PFCs) by over 75% since 1990. This is the most significant response to greenhouse so far by Australian industry. However, there are limits to how much more can be done without the industry becoming internationally uncompetitive

Conclusion

The Australian aluminium industry is one of the most successful stories in value adding. It is internationally competitive without any level of protection in Australia.

The industry has succeeded where many others have failed because it has built on Australia's competitive advantages, especially in raw materials and competitive supplies of energy.

The industry is global in nature and most of the companies involved in it are global players. Australia has built a key role in these global businesses and thus has the potential to play an even greater role in the future of the global aluminium industry.

The aluminium industry in Australia is at the leading edge of world industry technology and plays a direct role in the development and application of further improvements. Governments could help underpin this technology role by giving attention to the research and developments incentive and support policies and measures.

The importance of Australia in the technological areas of this industry underpins wider skill and technology developments in related fields such as metallurgy material science, industrial chemistry and environmental management.

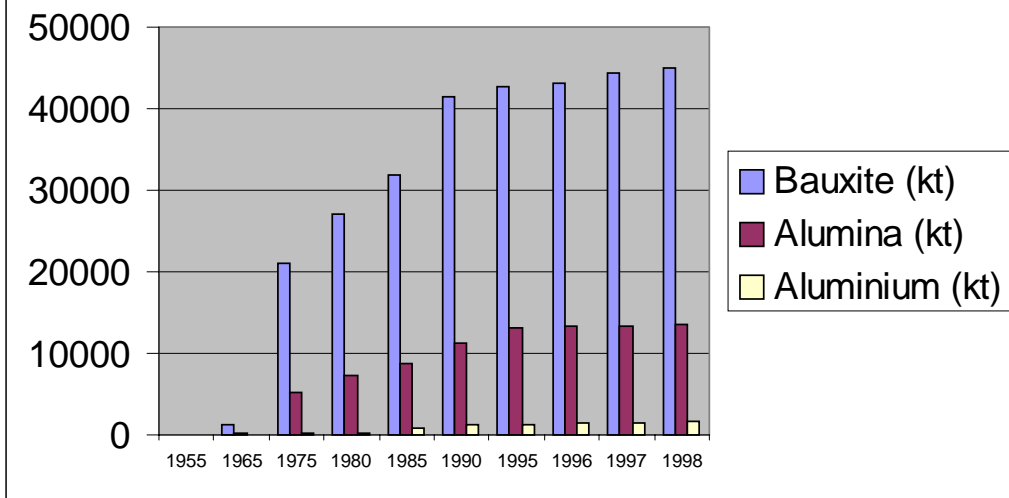
Developments in applications of aluminium can also have great advantages for Australia. The success story of the fast ferry industry and the emerging potential in light weighting of automobiles are just two of the examples where aluminium as a

material has much to offer. Australia can play an increasing role in those developments providing the policy mix for Australia allows that to happen.

The aluminium industry would welcome the chance to discuss these issues further with the Committee

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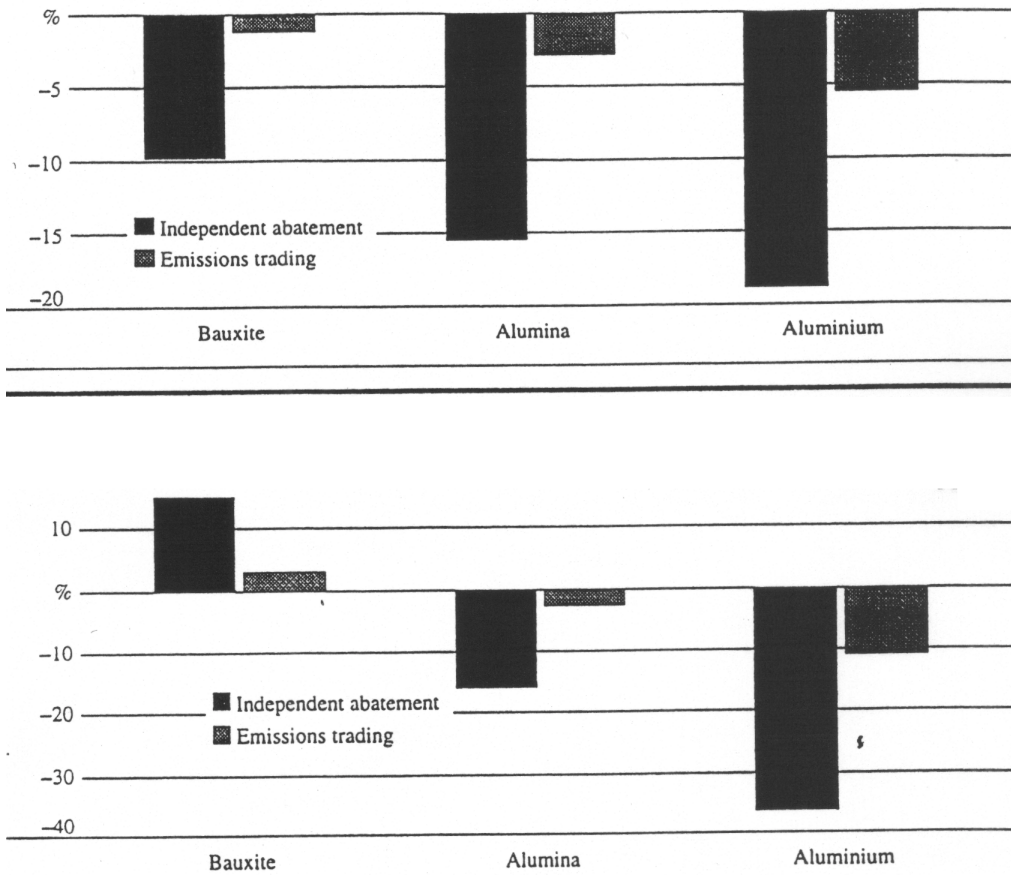
Figure 2
Development of aluminium industry



| | 1955 | 1965 | 1975 | 1980 | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 |
|----------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Bauxite (kt) | 8 | 1186 | 21033 | 27179 | 31839 | 41391 | 42655 | 43063 | 44465 | 45000 |
| Alumina (kt) | 0 | 202 | 5129 | 7246 | 8792 | 11231 | 13161 | 13348 | 13384 | 13537 |
| Aluminium (kt) | 1 | 88 | 214 | 304 | 851 | 1234 | 1297 | 1372 | 1495 | 1628 |

FIGURE 3

Change in production(above) and exports(below) at 2010 to meet Kyoto target



Source : ABARE Conference Paper 99.16 . Assessing the impacts of the Kyoto Protocol : Implications for the Australian aluminium industry. Stephen Brown, Frank Jotzo and Brian S. Fisher. Australasian Aluminium and Alumina Summit, 21-22 April 1999.

FIGURE 1

The Australian aluminium industry 1998

