

AUSTRALIA LEADING THE LIGHT METALS AGE

Knapp, R

Australian Aluminium Council, Dickson, Australian Capital Territory, Australia

Abstract

The Australian aluminium family of industries have experienced very strong growth over the last three decades driven by expansion in global demand for aluminium and Australia's specific attributes of world-class bauxite resources and the availability of internationally competitive energy, a key element in the Australian success story in the transformation of the raw material bauxite into the significantly higher-value energy-intensive products of alumina and aluminium.

Figure 1 presents the production relationships in the Australian aluminium industry, showing the cascade of activities from bauxite through to final products.

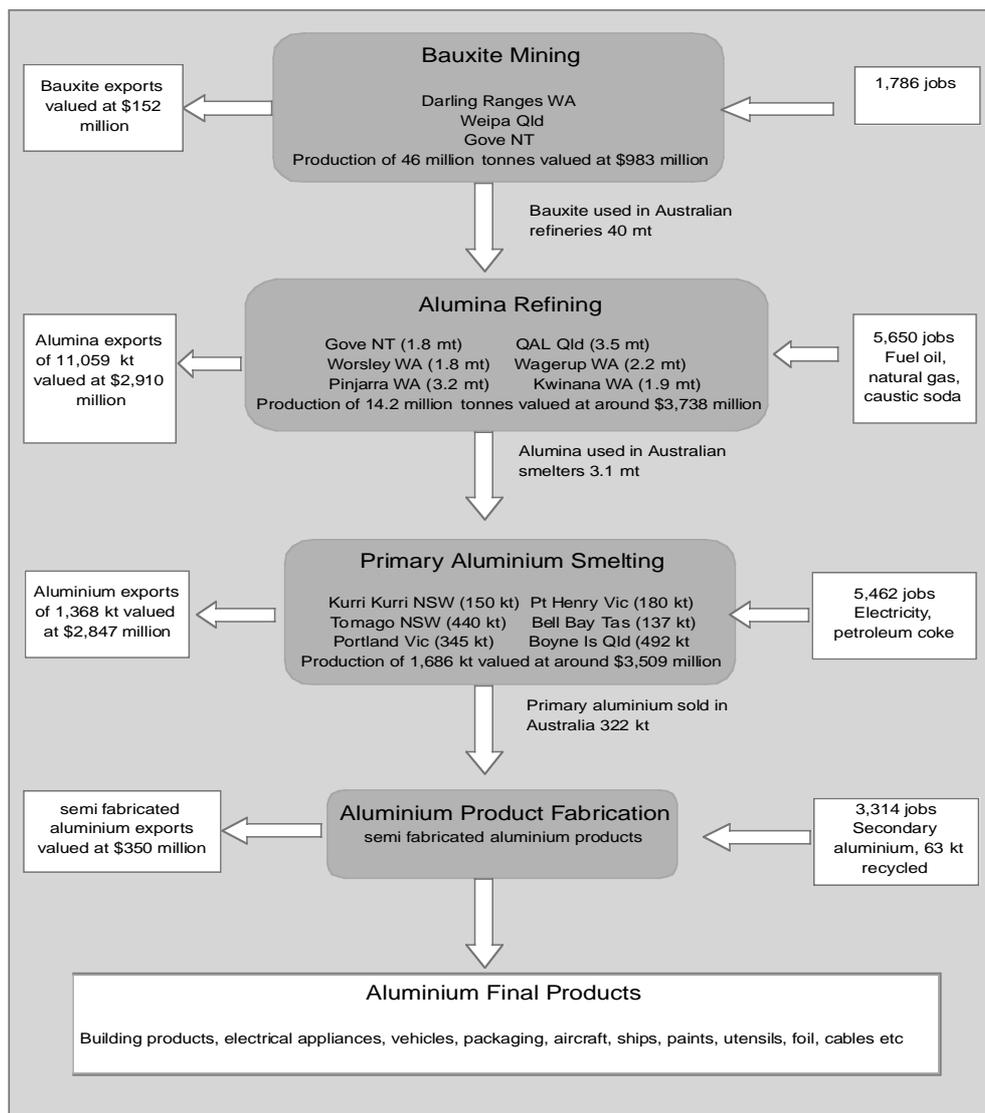


Figure 1 — The structure of the Australian Aluminium Industry 1998–99

Source: Australian Aluminium Council — Contribution to the National Economy — ACIL Consulting, May 2000

The industry has operations in five States and the Northern Territory. These operations are located in regional areas and are the main economic drivers in many of these regions. Direct employment in the industry is in excess of 16,000 and indirect employment at over 50,000, with the majority located in regional areas

1. Contribution to the Australian economy

Most Australian bauxite is processed into alumina in Australia and about 30 per cent of the alumina is further processed into metal in Australia. These are significant value adding and high technology steps that contribute positively to Australia's economy.

In 1999–2000, Australia produced 36% of world bauxite and almost 30% of world alumina, making it the world's largest producer of bauxite and alumina (Figures 2 and 3). In addition, it is the fifth largest producer (at 7%) and the third largest exporter (at 10%) of aluminium (Figure 2).

Australian exports of alumina totalled 12,721 kt in 2000–01, generating export earnings for Australia worth in excess of A\$4.5 billion per annum (Table 1). This alumina goes to many markets, primarily USA, Russia, China, Canada, South Africa, Norway, and the Middle East. Alumina is Australia's number one export to many of these countries.

Table 1 — Australian Exports of alumina (1995 to 2001)

Year ended June	Volumes (000 tonnes)	Values (\$ million)	Unit values (\$/tonne)
1995	10,315	2231	216
1996	10,984	2717	247
1997	11,011	2604	236
1998	10,536	2887	274
1999	11,059	2910	263
2000	11,654	3471	298
2001	12,721	4507	354

Source: ABARE (2001), Australian Commodity Statistics 2001
 ABARE (2002), Australian Commodities (Outlook) March 2002

With the energy intensive nature of the production process for alumina and aluminium, the success of the industry depends on parallel development and provision of secure, long-term supplies of internationally competitive priced energy.

The share of energy in the cost structure of alumina production is shown in Figures 3. The alumina refineries are located in WA, Qld and the NT, and consume, or are potential customers for, gas in those States/Territories. The refineries' demand for gas, combined with gas used in the smelters is estimated to account for about 11% of Australia's domestic supplies of gas.¹

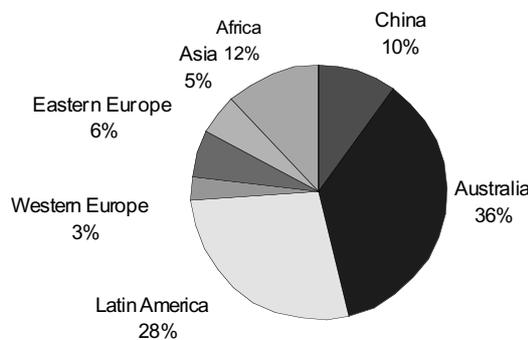
2. Future growth potential

Alumina production in Australia has continued an impressive growth pattern (Figure 4). Projections for further expansion are also very significant, but will depend on the emerging policy environment particularly in relation to energy and greenhouse policy in Australia.

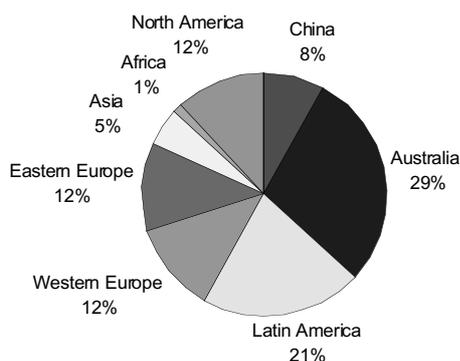
Industry estimates provided in Q3 of 2001 and aggregated by the Australian Aluminium Council predicted an increase in alumina production capacity by 2010 of between 25% and 58%, taking capacity from 16.5 million tonnes to between 20.6–26.1 million tonnes. ABARE (Outlook March 2002) forecast growth of 18% in production capacity (19.5 million tonnes).

1. ACIL report Australian Aluminium Industry, Contribution to the National Economy May 2000

World Bauxite Production 2000



World Alumina Production 2000



World Aluminium Production 2000

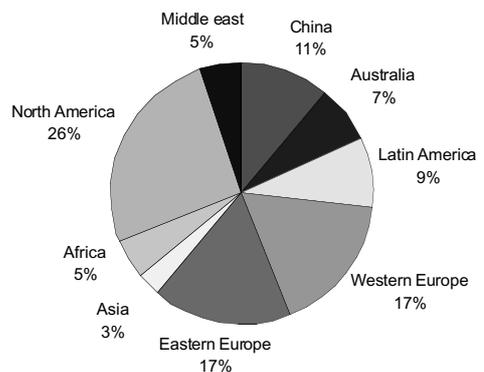


Figure 2 — Year 2000 World production of Bauxite, Alumina and Aluminium
 Source: J. King & ABARE 2001 — as found in LMAA Working Paper No. 1, Aluminium

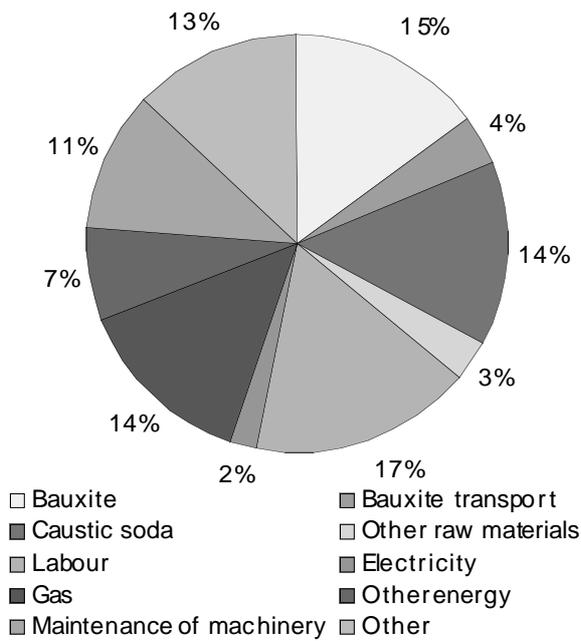


Figure 3 — Australian Alumina Industry Cost Structure
 Source: Industry Commission (1998), Micro reform — Impact on Firms: Aluminium Case Study, Research Report

However, a sobering point from ABARE was their related modelling of the possible impact of Australian ratification of the Kyoto Protocol. This removed the opportunity of alumina production growth over this period. (In the case of aluminium smelting in Australia, ABARE predicted a contraction of the industry over the period compared to a “no Kyoto” expansion of 21% by 2010.)

These predictions are driven primarily by the impact of greenhouse policy actions on the price of energy.

There seems no reason why Australia should not be able to continue its role as world leader in the alumina industry, although competitive supplies of energy and continued progress in technology development and adoption will be essential, as there are strong competitors for this investment.

The Light Metals Action Agenda, a collaborative project undertaken in 2001 between the Federal Government and the industry, identified the many challenges facing the light

metals sector and their future development prospects in Australia. The future demand for alumina for domestic aluminium smelters is closely linked to this Agenda.

3. Light Metals Action Agenda — Australia Leading the Light Metals Age

The Light Metals Action Agenda (LMAA) report discusses the current state of the light metals industry, identifies opportunities and impediments to achieving the industry potential and proposes a set of recommendations to help the industry capture these opportunities.

The Light Metals Action Agenda provided an opportunity for industry and research stakeholders to work with Government to create the conditions so that Australia can realise the vision for a sustainable and internationally competitive light metals industry over the next 20 years and beyond.

The Light Metals Action Agenda was initiated and driven by industry, with whole of Government support. Industry, government and research interests worked together in the strategic planning phase to identify initiatives that would help industry overcome barriers to development and fulfil its potential. A Strategic Leaders Group (SLG) drawn from industry, government and research agencies guided the development of the Action Agenda.

The Minister for Industry, Tourism and Resources, the Hon Ian Macfarlane, launched the Light Metals Action Agenda in December 2001 and in June 2002 announced the formation and composition of the Implementation Committee to take forward the key priority issues identified in the Action Agenda. This work has commenced and will be progressed over the remainder of 2002 and early 2003, in preparation for the first annual forum to review progress.

3.1 LMAA Executive Summary

The Light Metals Action Agenda process has created the opportunity to develop a more effective partnership between the light metals industry and government. Industry and government have worked together to create a vision for the light metals industries in Australia that will underpin commercially viable and internationally competitive growth over the next 20 years and beyond. The process has focused on a strategic analysis of the opportunities and impediments facing the processing of aluminium, magnesium and titanium metals and their downstream application.

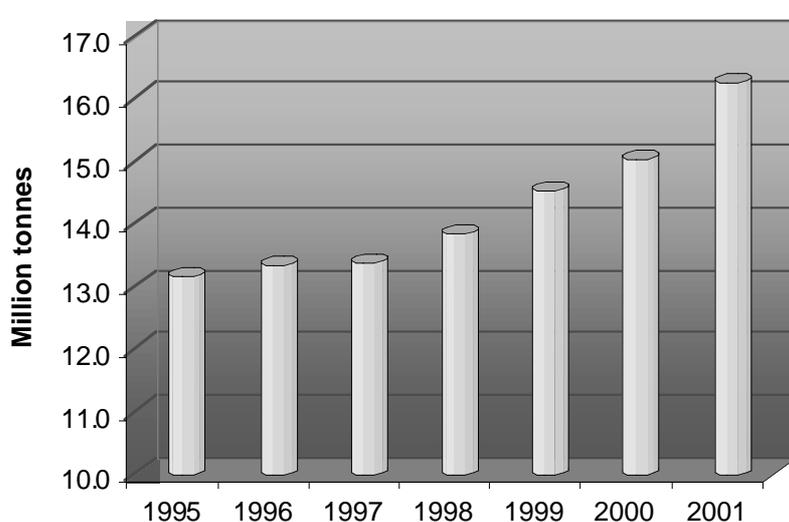


Figure 4 — Australian Alumina Production (1995 to 2001)
 Source: 1995–2000 data — ABARE (2001), Australian Commodity Statistics 2001. 2001 data — industry estimate.

Australia is one of the world's leading producers and processors of aluminium and is strongly placed to become a leader in magnesium and titanium production. Australia's significant natural resources provide a solid platform for further growth in aluminium processing, the emergence of magnesium metal production and the development of a titanium metal sector. While Australia's competitiveness in mining and metal processing has not yet led directly to major growth in downstream adding value to these metals, significant market opportunities are starting to appear. These build on the success stories that have emerged (eg fast ferries, canned sheet, windows and doors, alloy wheels).

There are opportunities for growth in both the upstream and downstream sectors driven by increased global interest in light metals. The car industry presents a major opportunity for greater use of light metals reflecting the movement towards more energy efficient transport. The Light Metals Action Agenda has sought to identify strategies to enable Australian firms to capture these opportunities.

Australia's aluminium industry is economically significant and well placed to take up new market opportunities. Its challenges reflect the maturity of the domestic market and the need to develop further its environmental credentials. The success of the industry will depend on its capacity to increase metal production within a sustainable framework that reduces energy use and greenhouse gas emissions while remaining internationally competitive and encouraging greater uptake of aluminium by end users.

Technological innovation and the attractiveness of Australia as an investment location are important factors in the development of a magnesium industry in Australia. Challenges include moving from project status to metal production, attracting investment funds, obtaining reliable, competitively priced energy supplies and encouraging increased magnesium usage by end users.

While we have a significant mineral sands industry, the challenge is to produce titanium metal that is competitively priced in the world market. The technologies that CSIRO is developing to provide opportunities to lower the price of the metal would increase its market demand considerably in the transport, construction and chemical industries. The challenge is to realise these technical and commercial opportunities and develop greater end use markets.

Worldwide, downstream manufacturing using light metals is on the edge of enormous growth and opportunity. Australia already has a number of successful light metals manufacturing firms that have built on strengths both within and external to their organisation to develop profitable and sustainable markets based on these opportunities. The capacity of Australian metal manufacturers to capture a greater share of these opportunities will depend on their level of international competitiveness and their ability to enhance their value chain linkages, especially with their customers.

Stakeholder consultations have identified a number of opportunities and impediments to the further development of light metals in Australia. The Strategic Leaders Group (SLG), which comprises industry leaders, members of the research community and government, has guided the development of the Light Metals Action Agenda. The group has put together a set of 21 recommendations to address these opportunities and impediments and to help the industry achieve its potential.

These recommendations fall into six key categories and cover actions and initiatives to be undertaken by industry, the government, or by working in partnership. The categories are:

- Investment
- Energy

- Industry leadership
- Market development
- Innovation
- Sustainable development

The SLG has also expressed their ongoing commitment to the implementation of the recommendations the group has developed through the development of an implementation strategy. The group has recommended the establishment of a steering committee to oversee the implementation of the Action Agenda recommendations.

3.2 Investment

For both upstream and downstream interests, the major challenge for potential investors is set by the size and capital intensity of projects and their long lead times for achieving a return on investment. The Commonwealth Government, through its investment promotion body Invest Australia, is seen as playing a particularly important role in attracting new and continuing investment to Australia. Australian governments at all levels need to work together to ensure a coordinated and consistent approach to the attraction of investment in the light metals industry. Industry, too, has a critical investment role to play in developing and maintaining technology at the forefront of global competition.

3.3 Energy

The production of light metals is very energy intensive and the availability of secure, long term supplies of internationally competitively priced energy is an essential prerequisite to a competitive industry. Australia has been able to meet these energy requirements and this has been a major factor in the growth of the aluminium industry over the past 20 years. The recommendations recognise that further work is necessary to ensure that Australia remains a competitive location for light metals processing. This should address energy market reform, the supply and environmental impact of energy production and the creation of appropriate alliances between energy producers, distributors and users.

To remain competitive, the industry also needs to further improve its energy efficiency and to reduce its level of greenhouse gas emissions. The recommendations point to the importance of technology in achieving these goals. They also seek to create opportunities for industry and government to work together to produce outcomes that are in the best interests of all participants.

The Government has made it quite clear that while it remains committed to its international greenhouse obligations, it also recognises the imperative of maintaining the competitiveness of Australian industry. The light metals industry agrees with these objectives.

3.4 Industry Leadership

Discussions with stakeholders raised issues of industry leadership with suggestions that the light metals industry in Australia should look holistically at its structure and identify opportunities for greater collaboration between the sectors to promote the use of the metals. The recommendations seek to create opportunities for light metals producers to take a leadership role in demonstrating the capabilities of light metals and applications. They aim to draw the sector together and to take actions to build industry capabilities. It is also recommended that downstream users of light metals should consider building a more integrated sector by developing greater cooperation between companies.

3.5 Market Development

Exports will continue to be the major growth markets for aluminium, magnesium and titanium metals. Market trends worldwide also indicate significant growth opportunities for value added products especially in areas of automotive components, IT and communications and the construction, petroleum and chemical industries. The recommendations are designed to encourage Australian firms to adopt strategies that help them capture their share of these opportunities. These strategies include alliances that strengthen value chain linkages and provide opportunities for product and process development. Collaborative and cooperative initiatives amongst downstream manufacturers should help firms get better access to markets by increasing scale and market presence.

3.6 Innovation

Innovation and using state of the art technology will be important keys to counteracting cost advantages enjoyed by competitors. Innovation will be targeted to process and product development and improvements, lower capital requirements for new plant, higher process and energy efficiency, and to improvements to environmental performance. The SLG has recommended the formation of a task force to contribute to the establishment of research priorities, to encourage increased innovation and to improve the transfer and uptake of technology.

3.7 Sustainable Development

Sustainability is important to the future viability of the light metals sectors and an important plank in marketing the Australian industry as environmentally and socially responsible. The Strategic Leaders Group has made four recommendations to initiate and build upon industry strategies that will ensure the sustainable development of these industries. Specific issues include the establishment of triple bottom line targets, life cycle analysis and recycling.

3.8 Implementation Strategy

The implementation strategy is designed to ensure that mechanisms are put in place to work towards the vision articulated during this process [and to] ensure we do not lose the momentum developed through the first stage of this process and help maintain the strong relationship already built between the various players who have worked together to produce this document.

The Action Agenda highlights the position of Australia as a leader in light metals, through its world class aluminium industry and its emerging magnesium industry. In the case of aluminium, this position has been achieved through effective tapping of our fundamental competitive advantages especially in raw materials, energy and infrastructure. The same factors will be pivotal in the emerging light metals of magnesium and titanium, underpinned by technology.

While Australia has some advantages for these industries, there is intensive competition around the world for future investment. The cost pressure is constant and Australia must work hard to keep its competitive position in aluminium and realise its potential in other light metals. This competitiveness is a fragile thing and it must be carefully guarded or it will disappear, as it has in other industries and other countries.

The importance of these industries for Australia and the effort that will be needed to maintain their growth requires a long-term vision with the Government and a framework within which the challenges can be met effectively.

The recommendations of the Light Metals Action Agenda are contained in the Annex to this paper — and copies of the report are accessible via our website <http://www.aluminium.org.au>.

The work already undertaken within the LMAA and the ongoing agenda is firmly anchored within a sustainable development framework. Aluminium benefits from the broader sustainable development consideration of its impact in terms of environmental footprint using a full cradle-to-grave life cycle analysis.

As pointed out by the International Aluminium Institute (IAI), aluminium is a sustainable material whose recyclability and applications justify the high energy requirement of primary aluminium production which includes the earlier commitment to alumina production. The IAI has produced a report on sustainable development within the aluminium industry as part of the preparations for the World Summit on Sustainable Development (WSSD) scheduled for late August–early September providing a global report card on the progress towards increased sustainability and reduced environmental impact. This report is available at <http://www.world-aluminium.org/iai/publications/documents/sustainable.pdf>

Aluminium satisfies more than almost any other material the requirement for a fair distribution of resource utilisation between generations. The largest known and most rapidly growing stocks of aluminium are “metal in use”. These stocks of aluminium represent a permanent asset for society, because aluminium is not biodegradable and does not rust away. It is estimated that while annual global production of primary aluminium from bauxite is 24 million tonnes per annum, there are still 400 million tonnes of the metal in use that will eventually be available for recycling. Aluminium is an investment for future generations.

Energy savings from recycled metal (in place of virgin metal) are in the order of 90–95% — this saving is multiplied in life cycle and sustainability terms by the ability to recycle aluminium again and again without loss of quality.

4. Conclusions

The Light Metals Action Agenda is the culmination of the efforts to put the necessary framework in place. It has a number of recommendations that set up processes for all parties to work together on the challenges such as those mentioned above.

It needs to be underlined that light metals are an industry of the future in terms of global sustainable development objectives. Light metals have much to offer as the world strives to meet sustainable development goals.

It is also important to underline that one of the key elements in the future success of these industries is technological progress. For further improvements in energy efficiency, for continuing leading edge environmental performance, for further greenhouse gas abatement and for costs to be kept in line with competitors, significant technological advances must take place.

The aluminium industry has taken a big step already, with the release of the Alumina technology roadmap. This is one of the actions under the light metals action agenda and provides a pathway for global improvements in the performance of the alumina industry. This roadmap has reinforced Australia's position as the world leader in the alumina industry and its technological development.

It is encouraging to know that the issues identified in the alumina technology roadmap are being continued/advanced.

The vision put forward in the Action Agenda for the period through to 2020 is for Australia to become the best supplier of light metals in the world. The challenge now is

to make it happen. That requires an implementation program to take the recommendations of the action agenda forward, utilising where possible existing processes such as some of the programs already under way in the aluminium industry.

The Australian aluminium industry is a major national (domestic) undertaking with a major investment in people and assets, particularly in regional areas. Further Australian investments are being pursued by global companies, by choice, under current economic and policy conditions which are competitive with other alternative locations, but Australia must maintain its global position to continue to realise these further investment and employment opportunities.

Appendix

Australia Leading the Light Metals Age

LMAA Recommendations

Investment

1. Government consider enhancing Invest Australia's role in working with industry to promote the benefits of new and continuing investment in the light metals sectors in Australia. In particular, Invest Australia could:
 - facilitate further investments in the aluminium industry;
 - investigate options for attracting investment partners for magnesium projects and related research activities;
 - investigate the feasibility of attracting a major titanium metal producer to invest in or re-locate to Australia, to capture the benefits of Australia's R&D in titanium metal production;
 - continue to build on existing strategies to attract new investment in die casting and other automotive components to respond to new local and regional opportunities;
 - stressing the benefits of close proximity to both primary and secondary metals processing facilities to take advantage of the availability of hot metal supplies and synergistic intermediate products; and
 - highlighting the opportunity for developing better links between domestic metal producers, downstream processors and end users.
2. The Commonwealth continue to work with State, Territory and local governments to ensure Australia offers advantages, including the provision of appropriate infrastructure, that allow it to compete as an investment destination. In particular, there should be consistency across governments on investment promotion strategies to increase the level of investment funds available for major light metals projects. Investment promotion agencies and programs should:
 - facilitate access to relevant information on taxation issues associated with investment in major projects, to inform industry investment initiatives; and
 - promote their current services and programs to light metals sectors, to improve the reach of these existing mechanisms.
3. Industry and governments monitor the taxation regime as it affects the light metals sectors to ensure it supports an ongoing investment in Australia by these industries.

Energy

4. Governments maintain their commitment to energy market reform and the development of a National Energy Policy that aims to:
 - provides competitive access to energy across Australia, particularly in regard to the location of energy intensive industries;
 - continues to pursue the establishment of a competitive energy market, including removing any market distorting policies;
 - encompasses options over the long term for the self generation of power, including achieving best practice and/or investing in state of the art power plants; and
 - recognise the needs of energy-intensive users, including through consultation with light metals producers.
5. The light metals industries identify opportunities for partnerships/alliances with energy producers and distributors to:
 - enhance each party's understanding of the other's needs and provide a forum to jointly investigate new power generation needs;
 - improve certainty in the national energy market;
 - consider the options presented by issues of interruptibility and other forms of demand side management, as well as reliability of supply; and
 - identify opportunities for improved energy efficiency and reduced emissions from power generation and usage, including the opportunities for collaborative research and development.
6. Government continue to provide a framework that allows industry to develop financial instruments and a liquid, robust derivatives market, to manage the risk of exposure to the volatile wholesale electricity market. Implementation could include investigating a government-sponsored joint initiative with key stakeholders including the National Electricity Market Management Company (NEMMCO), financial institutions, retailers, generators and large users to encourage an industry solution.
7. Governments develop for industry an easy to understand guide to energy market reform, covering issues such as what the reform has entailed, the aims and benefits of NEM and the effective use of financial markets that are critical to the effective operation of the wholesale electricity market.
8. Industry pursues reduction of greenhouse gas emissions through improved process efficiency and the increased use of cost competitive, less emission-intensive fuels in the production of light metals. Initiatives should include:
 - incremental improvements in energy efficiency;
 - introduction of new technologies and support for research and development that will provide more energy efficient production routes and reduced emissions;
 - investigation of opportunities for additional use of co-generation in the light metals industries;
 - investigation of opportunities for co-location of synergistic industries; and
 - consideration of development of a proposal for a sectoral greenhouse strategy to facilitate maximum abatement by the light metals industries while maintaining the competitiveness of these industries in the short, medium and long term for Government consideration.
9. Government maintains its commitment in international negotiations to pursue cost effective

greenhouse gas abatement policies that minimise the burden for business and the community, so that Australian industry, including the light metals industries, remain competitive, and avoid measures that divert investment decisions away from Australian light metals projects.

10. Industry and Government develop a forum to:
 - investigate opportunities for effective offset projects to help meet greenhouse objectives while maintaining competitive growth in the light metals industries; and
 - raise awareness of key government programs focused on energy and eco-efficiency, greenhouse gas abatement and technology commercialisation and diffusion.

Industry Leadership

11. Light metal producers and manufacturers investigate the creation of infrastructure to provide industry leadership and foster cooperation amongst all players. The purpose of the new arrangements would be to 'pool' resources to focus on common issues for industry growth and establish closer links with downstream users to develop more diverse end markets. Options include:
 - building upon existing industry bodies (eg Australian Aluminium Council) to create formal institutional
 - arrangements;
 - establishing new institutional arrangements covering all the sectors (eg National Light Metals Institute);
 - developing new sector specific industry associations for magnesium and/or titanium; or
 - working within a cooperative framework such as CAST or other research agencies to develop strategic alliances between upstream metal producers and downstream processors and manufacturers.
12. Companies, particularly in the downstream industries, work with industry associations and governments to develop inter-company co-operation and networking to help:
 - provide access to an increased range of skills and expertise;
 - encourage exchange of information and experience on marketing, exporting, eco-efficiency and cleaner production and other matters critical to the firm's growth, including information on and access to relevant government programs; and
 - groups of firms develop increased market presence and the critical mass to respond to customer demands for large orders, product packages or integrated products.

Market Development

13. The Minister for Industry, Science and Resources convene a high level meeting of metal producers, metal manufacturers, researchers and the automotive industry to examine the benefits of working closely together, linking with similar international initiatives, and considering a framework for greater interaction through a Task Force to:
 - promote synergies for product development that encourage the innovative application of light metals;
 - explore a range of initiatives that aim to exploit new market opportunities (including the possible future introduction of fuel efficiency targets and product stewardship); and

- expand existing markets with an emphasis on building new or stronger customer relationships.
14. Industry [through the leadership infrastructure referred to in Recommendation 11], promote the use of light metals across a wider range of end users and/or products, including:
 - identifying and targeting specific end users (eg architects/designers), developing strategies to engage them, including through their industry associations, educational/training institutions and/or the use of design or other awards;
 - establish a group to develop a program with engineers, architects and designers including universities and other training institutions, to identify strategies to improve the quality of training in the use of light metals and dissemination of material on these metals and their applications;
 - marketing the light metals industries' environmental credentials to customers/end users to support the concept that light metals can offer greater environmental benefits in the longer term than some substitute materials, including steel and plastics.
 15. Industry and government work through existing mechanisms to:
 - address specific market access barriers to Australian light metals products and to develop Australia's negotiating position in international forums; and
 - increase industry awareness of processes for addressing import tariff matters, including classification disputes.

Innovation

16. Establish a Task Force comprising companies, industry associations, government and public research agencies, to measure the effectiveness of existing technology transfer processes and examine ways to encourage innovation within light metals processing and manufacturing, including:
 - benchmarking existing technology diffusion activities, with a particular emphasis on their applicability to small to medium firms (including how well the existing research agencies for light metals, including CAST, cater for the research and innovation needs of the light metals industry);
 - identifying what other structures could be utilised or established to cater for these needs, (including establishing research priorities for the development of new light metal products and processes using methodologies such as the alumina technology roadmap);
 - looking at ways of improving technology transfer and diffusion within and between the light metals sectors, for example methods of dealing with spent pot liners (SPL);
 - supporting the compilation of an audit of existing technology and skills to identify gaps and means to meet these needs; and
 - investigating the business case and exploring funding mechanisms to establish a world class demonstration die casting facility in Australia.

Sustainable Development

17. The light metals industries develop and pursue ambitious goals for improvement in the sustainable development of their sectors, including building on industrial ecology and regional synergies, including introducing triple bottom line performance targets to

assist in developing an increasingly sustainable industry that achieves and/or maintains best practice:

Economic Performance

- decreased cost and increased productivity
- market targets, e-commerce, taxation
- recycling and materials recovery

Environmental Performance

- energy efficiency
- abatement greenhouse emission
- clean production technologies
- social performance
- health and safety.

18. Industry and governments monitor domestic and international initiatives focusing on sustainable development but also look for options for major step initiatives, including:

- a Sustainable Light Metals 2020 initiative to assess how materials needs might be met with light metals by 2020 with factor X reductions of the overall environmental impact over the life-cycle of these materials uses (with factor X being in the range of 4 to 20), and develop R&D agendas to realise the necessary technical and organisational breakthroughs to achieve those sustainable light metal uses.

19. Industry and governments to investigate existing research and conduct further studies on the life cycle analysis (LCA) of light metals and the implications for its markets because of increasingly stringent environmental and other regulations affecting the use of light metals:

- using methods and studies acceptable to independent and international peer review processes to ensure that the Australian public and international customers are able to accept the results as being credible;
- conveying the results of internationally accepted peer review life cycle assessment to customers and to the community more broadly, to highlight the industries' environmental commitments and to argue the case that decisions affecting the use of light metals should have a sound scientific base;

- using the results from the LCA to identify opportunities for industries to continue to improve its environmental performance; and
- promoting initiatives through which the industries can build on their environmental credentials, possibly including a product stewardship scheme.

20. Governments and industry look at options to build on the recycling advantages of light metals to:

- produce light metals using less energy through recycling;
- increase Australian recycling and/or production of secondary metals, including through the promotion of the research and development required to improve secondary metal smelting efficiency;
- establish a recycling and secondary metal group involving primary and secondary metal producers, researchers and government to improve knowledge of the secondary metal sector, interact with the global aluminium recycling project, develop strategies to improve recycling and address environmental issues, such as dioxins; and
- support research into magnesium recycling, given that the lack of any magnesium recycling facility in Australia is limiting the use of magnesium by diecasters.

Implementation

21. The Minister for Industry, Science and Resources establish a steering committee to oversee the implementation of the agreed recommendations arising from the Action Agenda. In particular:

- membership of the steering committee will be at the invitation of the Minister and will comprise industry leaders and decision makers in the research community, industry associations, Commonwealth and State governments;
- the committee will report regularly to the Minister on the progress made in the implementation of the Action Agenda recommendations;
- the committee will sponsor an annual National Light Metals Forum with key industry, government and research stakeholders to review progress and develop further actions as necessary to progress the Light Metals Action Agenda.