

Aluminium and magnesium industries

Introduction

- 2.1 Australia's aluminium industry is highly developed and a significant contributor to the national accounts. While the magnesium industry is in its infancy there are issues that it shares with the aluminium industry. Chief amongst these are energy needs and the implications of greenhouse gas emission restrictions.
- 2.2 This chapter reviews the status of each of these industries, discusses their value-adding opportunities, and comments on impediments that may prevent further growth.
- 2.3 The Australian Government is still considering the implications of the Kyoto Protocol. The light metals industries have a particular interest in what restrictions may apply, as they are heavy users of energy and emit large quantities of greenhouse gases. Therefore, part of this chapter is dedicated to discussing this matter.

Aluminium industry

- 2.4 Aluminium production is divided into three stages. These include bauxite mining, alumina refining and aluminium smelting. Aluminium oxide is extracted from the raw material bauxite to produce a fine white powder called alumina. Aluminium is the final stage of production and involves the separation of alumina into aluminium metal and oxygen using electrolytic reduction in a series of furnaces. Molten aluminium is

cast into various forms for transfer to fabricating plants for casting, rolling and extruding.¹

- 2.5 The following sections review Australia's aluminium industry and its share of world production. In addition, the key factors affecting the value-adding potential of the industry are examined.

Production and export status

- 2.6 Australia is the largest miner of bauxite making up about 40 per cent of world production. Similarly, Australia is the largest producer of alumina contributing about 30 per cent of world share. The figures are less impressive for aluminium production. Australia accounts for just over seven per cent of world production.² The Department of Industry, Science and Resources (DISR) notes that Australia's production of alumina grew rapidly through the 60s, 70s and 80s 'but little has changed since the mid 1980s'.³
- 2.7 Since the 1970s, Australia has consistently processed above 70 per cent of its bauxite into alumina. However, the proportion of alumina processed domestically into aluminium is much lower and has fluctuated around 20 per cent for the past 15 years.⁴
- 2.8 Australia's production of aluminium increased through the 1980s and early 90s. During this period, new smelters were constructed at Boyne Island, Tomago and Portland.⁵ This growth is attributed to the contraction of the Japanese smelting industry. In addition, Australia's competitive energy costs, close proximity to alumina refineries, and access to the Asian market attracted investment into the aluminium industry. Growth in aluminium production slowed during the 1990s due to a collapse of Russian demand.⁶
- 2.9 The *Light Metals Industries Action Agenda* highlights the overall economic contribution that the aluminium industry makes to Australia's economy. The key facts include:

1 IC, Micro Reform — *Impacts on Firms: Aluminium Case Study*, Research Paper, AusInfo, Canberra, March 1998, p. 10.

2 DISR, submission no. 28.4, p. 6.

3 *ibid.*, p. 6.

4 *ibid.*, p. 15.

5 Stevenson, T. 'Aluminium, Australia's Role in the world market', *Outlook 2000, Minerals and Energy*, Vol. 3, Proceedings of the National Outlook Conference, Canberra, 29 February to 2 March 2000, p. 261.

6 *ibid.*, p. 261.

■ direct employment	16 212
■ indirect employment	50 000 (regional)
■ wages and salaries paid	\$857 million
■ turnover	\$9.1 billion
■ exports	\$6.3 billion
■ value added or gross product	\$3.1 billion. ⁷

- 2.10 The direct employment in the aluminium industry comprises 1 800 in bauxite mining, 5 700 in alumina refining, and 5 500 in aluminium smelting.⁸
- 2.11 In 1998-99 the total value of export earnings for the aluminium industry was \$6.3 billion. This comprised \$152 million from bauxite, \$2.9 billion from alumina, \$2.8 billion from aluminium metal, and \$350 million as semifabricated products.⁹
- 2.12 Australia's bauxite, alumina and aluminium operations are shown in Table 2.1.
- 2.13 Table 2.1 shows the company ownership of the various bauxite mines, alumina refineries and aluminium smelters. DISR reported that 'Australian ownership in the industry has declined in recent years as assets have been sold to overseas interests'. DISR reported that 'Aluvic was sold to Marubeni and CITIC, Eastern Aluminium has been taken over by Alcoa, Capral's interest in the Kurri Kurri smelter is being sold to VAW, and Comalco, which until recently was an Australian company, is now wholly owned by Rio Tinto which is a joint UK/Australia company'.¹⁰ In addition, DISR commented that 'CSR's share of Gove Aluminium appears likely to be sold to foreign interests'.¹¹

7 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 5.

8 DISR, submission no. 28.4, p. 12.

9 AAC, submission no. 31.2, p. 2.

10 DISR, submission no. 28.4, p. 8.

11 *ibid.*, p. 8.

Table 2.1 Australian bauxite, alumina and aluminium operations

Operation	Company	State	Capacity
			<i>kt</i>
Bauxite Mines			
Weipa	100% Comalco	Qld	11 000
Huntly	100% Alcoa World Alumina and Chemical	WA	19 000
Willodale	100% Alcoa World Alumina and Chemical	WA	8 000
Boddington	56% Reynolds, 30% Billiton	WA	6 800
Gove	70% Swiss Aluminium, 30% Gove Aluminium	NT	6 500
Total			51 300
Alumina Refineries			
Gladstone	30% Comalco, 28% Kaiser, 20% Pechiney, 21% Alcan	Qld	3 460
Kwinana	Alcoa World Alumina and Chemical	WA	1 900
Pinjarra	Alcoa World Alumina and Chemical	WA	3 200
Wagerup	Alcoa World Alumina and Chemical	WA	2 200
Worsley	56% Reynolds, 30% Billiton	WA	3 100
Gove	70% Swiss Aluminium, 30% Gove Aluminium	NT	1 800
Total			15 660
Aluminium Smelters			
Kurri Kurri	100% VAW	NSW	150
Tomago	35% Pechiney, 35% Gove Aluminium, 15% AMP, 12% VAW	NSW	440
Point Henry	100% Alcoa World Alumina and Chemicals	Vic	180
Portland	55% Alcoa World Alumina and Chemicals, 22.5% Marubeni, 22.5% CITIC	Vic	180
Boyne Island	Lines 1&2: 50% Comalco, 17% SLM, 9.5% Kobe, 9.5% Ryowa, 9.5% YKK, 4.5% Simitomo Chemical	Qld	492
Bell Bay	100% Comalco	Tas	137
Total			1 744

Source DISR, submission no. 28.4, p. 7.

2.14 The foreign-owned companies include those from the:

- USA Alcoa and Kaiser,
- UK Billiton, Rio Tinto,
- Switzerland Swiss Aluminium - also known as Alusuisse,
- Germany VAW,
- France Pechiney,
- Canada Alcan,
- Japan Marubeni, Sumitomo, Kobe, Ryowa, YKK, SLM), and
- China CITIC.¹²

- 2.15 Australia has four aluminium rolling mills. Three are located in Sydney's western suburbs and the fourth is at Point Henry near Geelong. In addition, Australia has 11 aluminium extrusion mills and 20 aluminium casting operations. DISR noted that Australia 'does not produce marine grade aluminium sheet for use in Australia's fast ferry industry'.¹³ This particular quality of aluminium sheet is imported at a cost of \$120 million per annum.
- 2.16 DISR noted that during the past 30 years there has been significant growth of Australian alumina and aluminium industries. However, 'there have been no greenfield alumina refineries or aluminium smelters built in Australia since 1986'.¹⁴ However, there are a range of proposed alumina and aluminium projects for Australia. Table 2.2 shows the proponent and the proposed facilities and location for these projects.

Table 2.2 Proposed alumina and aluminium projects in Australia

Proponent	Proposed facilities and location	Cost	New capacity	Status
		\$m	(kt)	
Alcoa World Alumina	Process improvement at Pinjarra alumina refinery	na	165	Committed
Alcoa World Alumina	Wagarup alumina refinery expansion	700	1 100	Feasibility
Comalco	Greenfield alumina refinery at Gladstone	1 400	1 400	Feasibility
Aust-Pac Aluminium	Greenfield aluminium smelter at Lithgow	2 750	450	Feasibility
TOTAL		4 850		

Source DISR, submission 28.4, p. 14.

- 2.17 In relation to exports, Australian-produced alumina is either exported or smelted domestically. Table 2.3 shows the volume and worth of alumina and aluminium exports between 1997 and 2000. While export volumes grew during 1999, export value fell because of lower world prices.¹⁵ As indicated in the introduction, Australia is the world's largest producer of bauxite and alumina but contributes only about 7% of aluminium production.

13 *ibid.*, p. 8.

14 *ibid.*, p. 9.

15 *ibid.*, p. 10.

Table 2.3 Australian alumina and aluminium exports

	1997	1998	1999	2000 p
Alumina export, kt	10 902	10 804	11 128	11 654
Alumina exports, \$m	2 735	3 055	2 877	3 568
Aluminium exports, kt	1 156	1 312	1 381	1 365
Aluminium exports, \$m	2 527	2 935	2 918	2 990

Source DISR, submission 28.4, p. 10; Allen, C., Haine, I., & Curtotti, R. 'Aluminium and alumina, Outlook to 2005-06, OUTLOOK 2001, Volume 3, Proceedings of the National Outlook Conference, Canberra, 27 February to 1 March 2001, p. 259. Note: figures for 2000 are preliminary.

2.18 Table 2.4 shows world bauxite, alumina and aluminium production for 1996.

Table 2.4 World bauxite, alumina and aluminium production, 1996

	Bauxite		Alumina		Aluminium	
	(Kt)	% of world production	(Kt)	% of world production	(Kt)	% of world production
Australia	46 808	36.4	13 334	29.5	1 371	6.6
New Zealand	0		0		285	1.4
North America	33	a	5 884	13.0	5 860	28.1
Latin America	38 019	29.6	9 334	20.7	2 107	10.1
Western Europe	3 013	2.3	5 733	12.7	3 369	16.1
Eastern Europe	7 117	5.5	5 073	11.2	3 513	16.8
Africa	18 875	14.7	622	1.4	1 015	4.9
Asia (Middle East)	100	0.1	0		792	3.8
Asia (other)	14 628	11.4	5 157	11.4	2 549	12.2
Western countries	113 676	88.4	37 378	82.8	15 563	74.6
Eastern countries	14 917	11.6	7 758	17.2	5 299	25.4
Total world	128 593	100.0	45 136	100.0	20 862	100.0

Source Industry Commission, *Micro Reform—Impacts on Firms: Aluminium Case Study*, AusInfo, 1998, p. 9.

Value-adding opportunities

2.19 The aluminium industry is a significant value-adding industry. The Australian Aluminium Council (AAC) reported that in 1997–98 the industry had value-added of \$3.1 billion.¹⁶ In considering the contribution that each part of the aluminium industry makes, it is

16 AAC, submission no. 31.2, p. 1.

important to note that one tonne of aluminium is worth about 100 times more than a tonne of bauxite.¹⁷

- 2.20 In relation to world demand for aluminium there are positive signs for growth. The OUTLOOK 2001 conference heard that 'world aluminium consumption growth is expected to increase in 2002, before stabilising with the assumed higher levels of world economic growth over the medium term'.¹⁸ The main influences on world demand for aluminium are rates of economic growth. It is expected that the downturn in the USA economy may lead to lower consumption of aluminium in 2001.¹⁹ Over the medium term, however, growth is expected to increase to an average of 3.3 per cent over the period 2002-2006. The automotive and construction industries are expected to provide the bulk of the growth.²⁰
- 2.21 In relation to Australia's outlook, the production of primary aluminium is expected to rise by 2.8 per cent in 2000-01 to 1.79 million tonnes. With the achievement of efficiency improvements, Australian production is expected to increase to 1.81 million tonnes in 2003-04 and stabilise around this level for the period to 2005-06.²¹ However the OUTLOOK 2001 conference heard that if two new proposed aluminium developments occur then overall Australian production could increase. These include the greenfields smelter at Gladstone, and expansion options for the Kurri Kurri smelter.²²
- 2.22 Australian exports of aluminium are forecast to increase by 4.7 per cent in 2001-02 to 1.43 million tonnes. However, this level will slow to about 1.39 million tonnes a year by 2005-06.²³
- 2.23 Australia's production of alumina is forecast to rise by 7.5 per cent in 2000-01 to 16.17 million tonnes. The OUTLOOK 2001 conference heard that 'export earnings from alumina are forecast to rise by 25 per cent in 2000-01 to \$4.35 billion. This forecast is based on 'increased export volumes and higher Australian dollar alumina export prices'.²⁴

17 *ibid.*, p. 3.

18 Allen, C., Haine, I., & Curtotti, R. 'Aluminium and alumina, Outlook to 2005-06, *OUTLOOK 2001, Volume 3, Proceedings of the National Outlook Conference*, Canberra, 27 February to 1 March 2001, p. 257.

19 *ibid.*, p. 258.

20 *ibid.*, p. 260.

21 *ibid.*, p. 260.

22 *ibid.*, p. 264.

23 *ibid.*, p. 264.

24 *ibid.*, p. 265.

2.24 The evidence to the Committee suggested that there are prospects for further value-adding in the aluminium industry. The AAC commented that there are opportunities ‘for further expansion in the value-adding parts of the industry, especially in many regional areas of Australia’.²⁵ DISR identified the following types of activities that could increase the value-adding performance of the aluminium industry:

- greenfield alumina refineries;
- brownfield expansion of existing alumina refineries;
- greenfield aluminium smelters;
- brownfield expansions of existing aluminium smelters; and
- diecasting of automotive parts.²⁶

2.25 The AAC provided more information on the possible greenfield and brownfield developments that could occur. These include:

Bauxite

- expansions at existing mining operations to support refining expansions listed;
- opening up of greenfield bauxite mining is unnecessary for at least ten years and probably much longer. But such greenfield deposits exist in abundance;

Alumina refining

- Worsley, WA, expansion coming on stream in 2000;
- Wagerup, WA, stage 3 is being actively considered and feasibility studies and approval is well advanced;
- QAL, Gladstone, considering major expansion – about 30%;
- Nabalco, NT, considering significant expansion – about 15%;
- Comalco greenfield project at Gladstone in feasibility stage;
- one other greenfield project likely within 10 years – probably WA or Qld;

Aluminium smelting

- expansions possible in NSW at both Tomago and Kurri;
- expansion possible in longer term at Portland, Vic;
- greenfield proposal at Lithgow, NSW;
- greenfield proposal in Latrobe Valley, Vic;
- one other greenfield proposal possible;

Semifabrication

- expansions likely in extrusion capacity;
-

25 AAC, submission no. 31.2, p. 7.

26 DISR, submission no. 28.4, p. 16.

- expansion being considered in rolling capacity; and
- die cast and other automotive components expansion likely, especially in energy park framework.²⁷

2.26 The AAC concluded:

The above possibilities illustrate the potential for this industry over the next ten years or so and they are profoundly important for the economic development of Australia, especially regional Australia. They add up to an increase in capacity for alumina and aluminium of at least 30% over the next ten years.²⁸

2.27 This level of growth was supported by comments in the Government's *Light Metals Industries Action Agenda, November 2000*.²⁹

2.28 While the evidence to the Committee suggested that there are opportunities for expansion in the aluminium industry over the medium term, this will be subject to certain challenges being met. The following section reviews some of the key challenges that could influence the growth potential of the aluminium industry.

Key challenges influencing value-adding

2.29 At the February/March OUTLOOK 2001 conference, a senior official of VAW³⁰ aluminium AG discussed the two most important issues which drive investment decisions in the aluminium industry. First, aluminium smelting is 'capital intensive, requiring a long investment horizon typically of more than twenty years'.³¹ Second, aluminium smelting requires large amounts of continuous electricity. Electricity is generally the second highest input cost after alumina. In relation to whether capital investment proceeds in the aluminium industry, the AAC stated:

The opportunity is there for further expansion in the value-adding parts of the industry, especially in many regional areas of Australia. A major factor in whether that expansion is achieved is the performance of Commonwealth and State Governments to get the right policy settings to encourage the

27 AAC, submission no. 31.2, pp. 2-3.

28 *ibid.*, p. 3.

29 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 1.

30 VAW aluminium AG is one of Europe's largest aluminium companies with annual revenues of around 3 billion and a workforce of 16 000.

31 Schumacher, U. 'VAW aluminium in Australia, Investment in an uncertain energy environment', *OUTLOOK 2001*, Volume 3, p. 273.

large capital investment that will be needed and which can easily go to competing countries.³²

- 2.30 This section focuses on government activities that may influence whether a commercial decision is made to invest in aluminium production. The single most important issue raised in the inquiry was the impact that compliance with possible greenhouse gas emission agreements could have. Greenhouse issues are examined in a separate section at the end of this chapter as they impact generally on the light metals industries. Similarly, the energy and infrastructure needs of both the aluminium and magnesium industries are discussed at the end of the chapter.
- 2.31 Some of the key challenges facing the aluminium industry include:
- research and development (R&D);
 - international competition;
 - education;
 - coastal shipping; and
 - other microeconomic reform issues.

Research and development

- 2.32 This discussion focuses on the possible use of new technologies, and tax concessions for R&D. DISR reported that a Technology Roadmap is under consideration by the alumina industry and DISR's Energy Efficiency Best Practice Program. The technology roadmap will focus on 'improved technologies especially in relation to energy efficiency'.³³
- 2.33 In relation to government support for R&D conducted by industry, the AAC commented that governments 'could help underpin this technology role by giving attention to the research and development incentive and support policies and measures'.³⁴ The AAC noted that the 'reduction of the taxation concession for R&D to 125 per cent from 150 per cent is a negative signal by the Government and the aluminium industry would look for some review of R&D and concessions in the near future'.³⁵ It should be noted that the AAC made this observation prior to the Government's *Backing Australia's Ability* policy statement in January 2001 in which modifications were made to the R&D tax concession program. This statement provides for a premium rate of

32 ACC, submission no. 31.2, p. 7.

33 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 8.

34 AAC, submission no. 31, p. 4.

35 *ibid.*, p. 7.

175 per cent for additional R&D activity. A summary of these changes is contained in Chapter One of this report. R&D tax concession issues are discussed in more detail in Chapter Six.

Conclusions

- 2.34 While the 175 per cent premium rate for additional R&D is a positive measure, the Committee is concerned that perceptions exist that the Australian Government is not committed to or providing sufficient incentive for R&D. It is essential that Australia provides a competitive R&D framework. The final chapter of the report will examine the R&D tax concession in more detail, together with a discussion of other tax issues.

International competition

- 2.35 International competition is influenced by the type and level of assistance provided by foreign governments to their industries. For example, DISR noted that ‘government support is likely to have been a significant factor in recent and proposed new aluminium smelter capacity in South Africa, Mozambique, China and the Middle East.’³⁶
- 2.36 The AAC noted that, while recent Australian taxation reforms were positive, ‘they still leave Australia behind many competing countries in the aluminium industry, which have lower levels of company taxation and more generous depreciation on capital investment.’³⁷

Conclusions

- 2.37 It is essential that the Australian Government monitor the taxation regimes and other industry assistance programs offered by aluminium competing countries. There are broader factors which influence capital investment – for example, Australia has relatively low energy costs, mature infrastructure and a stable social and political environment. While investment capital rates these factors highly, another consideration is the industry assistance framework. The Australian Government must continue to monitor and assess its industry assistance framework against the performance of comparable governments.

36 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 8.

37 AAC, submission no. 31.2, p. 4.

Education

- 2.38 The draft *Light Metals Industries Action Agenda* suggests that there is a lack of understanding of the use of light metals in transportation, design and construction. DISR suggested that a greater understanding of the uses and benefits of aluminium could be achieved through the aluminium industry working with the education sector. The education sector will 'introduce the use of new materials into courses focusing on training and design to open new products and markets for light metals'.³⁸

Coastal shipping

- 2.39 DISR indicated that the high cost of coastal shipping can make transport from and to Australian ports 'more expensive than transport of Australian bauxite or alumina to foreign refineries and smelters'.³⁹ DISR reported that every year over six million tonnes of bauxite is shipped from Weipa to Gladstone. A total of 2.5 million tonnes of alumina is shipped every year from Kwinana, Bunbury, Gove and Gladstone to smelters at Newcastle, Bell Bay, Portland and Geelong. The AAC stated:

The aluminium industry is one of the largest users of coastal shipping, to move bauxite from Weipa to Gladstone and alumina from refineries in WA and Queensland to smelters in Victoria, NSW and Tasmania. Reforms are taking place in the coastal shipping regimes but the costs are still well above those that would apply with full international competition in most cases.⁴⁰

- 2.40 The Department of Transport and Regional Services (DTRS) reported that about '90 per cent of Australian coastal trade is undertaken by Australian manned ships despite a significant cost disadvantage'.⁴¹ The Government's policy is to wind back cabotage which is the practice of limiting access to a country's coastal trade to national ship operators or national flag vessels with national crews.
- 2.41 The then Western Australian State Government commented that the Shipping Reform Group found that the 'reform of the cabotage system would provide substantial benefits to the Australian economy by

38 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 8.

39 *ibid.*, p. 8.

40 AAC, submission no. 31.2, p. 4.

41 DTRS, *Cross-Modal & Maritime Transport*, June 2000, [www.dotrs.gov.au/xmt/sse/sseindex1.htm]

increasing the frequency and reliability of coastal shipping services and reducing freight rates'.⁴²

Conclusions

- 2.42 While the removal of cabotage is a highly sensitive matter, particularly amongst unions and local ship owners, the Committee supports measures to reduce the cost of freight.

Other microeconomic reform issues

- 2.43 In 1998 the Industry Commission (IC) identified the impact of microeconomic reform as the key way the Government can help the aluminium industry respond to competitive challenges.⁴³ The IC stated:

Microeconomic reform has direct impacts on the cost, and quality of major inputs used by the industry – such as electricity, gas, rail freight, coastal shipping and port services. It also affects labour market arrangements and the productivity of workplaces, as well as the industry's use of natural resources and other environment assets. Taxation arrangements and other government regulations also have an impact on industry costs.⁴⁴

- 2.44 The IC conducted a survey of firms which sought comment on the impact of microeconomic reforms between 1990 and 1996. Firms ranked the four reforms having the most positive impact and the four reforms with the greatest negative impact on the competitiveness of their businesses, as:

Most positive reforms

industrial relations
rail freight/waterfront
tariff concessions
policy by-laws

Most negative reforms

air emission regulations
taxes on inputs (other than labour)
labour on-costs
land access/resource security.⁴⁵

42 Western Australian Government, submission no. 56, p. 9.

43 IC, *Micro Reform – Impacts on Firms: Aluminium Case Study*, AusInfo, Canberra, March 1998, p. xvi.

44 *ibid.*, p. xvi.

45 *ibid.*, p. xviii.

Conclusions

- 2.45 It is essential that the Government continue with its micro-economic reform agenda. It is essential that industry has access to competitively priced inputs, and government regulations and taxes provide for long-term growth. The Committee agrees with the view that microeconomic reform is one of the key areas where the Government can assist industry to respond to competitive challenges.

Magnesium

- 2.46 Magnesium is one of the lightest structural metals. One of the growing uses for magnesium is in automotive products, which helps to produce lighter weight cars. Magnesium is the eighth most abundant element in the Earth's crust and the third highest dissolved in sea water. DISR noted that the resources from which 'magnesium may be recovered range from large to virtually unlimited and are globally widespread'.⁴⁶
- 2.47 Magnesium metal is produced by either thermal or electrolytic processes. The electrolytic process requires large-scale plants, with low operating costs, and involves three stages of production. These include preparation and purification of magnesium chloride, dehydration and electrolysis. Thermal processes involve small-scale plants but with higher operating costs.⁴⁷
- 2.48 The magnesium industry is at a very early stage of development and is compared by many to what the aluminium industry was 70 years ago. Production costs and the price of the metal are impediments to growth although this is expected to change.⁴⁸
- 2.49 Australia has an abundance of natural resources of magnesium, and world demand is expected to increase during the next decade. The following section examines Australia's current state of magnesium production, and the opportunities that exist for expansion.

46 DISR, submission no. 28.4, p. 19.

47 *ibid.*, p. 20.

48 Professor Gordon Dunlop, Metals CRC, transcript of evidence, p. 258.

Production and export status

2.50 World production of magnesium is about 450 000 tonnes making it a minor metal. This compares to primary aluminium production of about 24.5 million tonnes in 2000. At the present time, Australia does not produce commercial quantities of magnesium. The major producer countries include China, the US, Canada and Norway.⁴⁹ Table 2.5 shows world production of magnesium metal by country.

Table 2.5 World production of magnesium metal by country

Country	Plants	Production (thousand tonnes)						
	1998	1992	1993	1994	1995	1996	1997	1998
China	200	6	11	11	60	56	92	120
USA	3	137	132	128	142	143	140	117
Canada	2	26	26	29	42	52	54	57
Norway	1	30	27	28	35	38	52	49
Russia	2	40	30	25	35	28	35	35
Israel	1	0	0	0	0	0	7	25
France	1	12	9	9	10	11	16	16
Kazakhstan	1	20	20	0	0	0	1	10
Ukraine	1	10	9	7	13	10	10	10
Brazil	1	7	10	10	10	11	9	9
Serbia	1	3	0	1	1	2	3	3
India	2	1	1	1	1	1	1	1
Japan	0	7	3	0	0	0	0	0
Italy	0	1	0	0	0	0	0	0
Total	216	300	278	264	349	352	433	452

Source DISR submission no. 28.4, p. 18.

49 DISR, submission no. 28.4, p. 18; Allen, C., Haine, I., & Curtotti, R. 'Aluminium and alumina, Outlook to 2005-06, *OUTLOOK 2001, Volume 3*, p. 259..

- 2.51 A recent report by the Australian Geological Survey Office referred to deposits of magnesium at:
- Kunwarara, Qld;
 - Arthur River, Tas;
 - Thuddungra, NSW;
 - Yaamba/Herbert Creek, Qld; and
 - Mrytle Springs, SA.⁵⁰
- 2.52 DISR noted that the Kunwarara deposit 'has the largest economic demonstrated resource of magnesite in Australia'.⁵¹ Magnesite, dolomite and carnalite are minerals from which magnesium can be produced. In 1999 the Queensland Metals Corporation mined 2.4 million tonnes of raw magnesite and produced 280 thousand tonnes of beneficiated magnesite, which was converted into 147 thousand tonnes of refractory magnesia.⁵² DISR stated:

Other deposits of magnesite being considered in magnesium metal projects are at Murrin Murrin in Western Australia and at Batchelor in the Northern Territory. Other projects propose to recover magnesium from the asbestos tailings at Woodsreef (Northern NSW), from brines which are associated with salt production near Dampier in Western Australia and from power station fly ash at the Hazelwood power station in Victoria's Latrobe Valley.⁵³

Value-adding opportunities

- 2.53 The Australian Magnesium Corporation (AMC) indicated that magnesium raw materials retail for around \$50 per tonne while magnesium metal retails for around \$1 500 per tonne. Currently, magnesium is considered to be a minor metal but there are expectations that this will change. DISR stated:

Over the next decade, the global magnesium industry may emerge from being a minor metal into the ranks of the major metals. According to one analyst, rising demand for light weight automotive components could see world magnesium production increase from its current level of 450 thousand

50 *ibid.*, p. 19.

51 *ibid.*, p. 19.

52 *ibid.*, p. 19.

53 *ibid.*, p. 19.

tonnes to 1 million tonnes by 2010 - comparable to current world production of nickel and lead.⁵⁴

- 2.54 Some of the major uses of magnesium include use in aluminium alloys, 44 per cent, diecasting, 28 per cent, and steel desulphurisation, 14 per cent. The use of magnesium in diecast automotive parts is estimated at 22 per cent 'but this sector is growing fast at about 15 per cent per annum'.⁵⁵ In relation to the use of magnesium in the automotive industry, the Cooperative Research Centre for Cast Metals Manufacturing (Metals CRC), stated:

The main growth for both aluminium and magnesium is in the automotive industry. That is where the main opportunities are for sale of those two metals and for adding value to them. The automotive market is driven by the need to reduce fuel consumption—a very topical issue right now—and also to reduce exhaust emissions. This is accomplished by decreasing vehicle weight. Of course, there are many other ways of decreasing those two things, but vehicle weight is one of the major issues. There are other opportunities in mass transport and in other consumer industries, such as portable electronics.⁵⁶

- 2.55 While there is merit in the use of magnesium products in the automotive industry, there is some reluctance by the automotive industry to use magnesium products because of the small world supply and high prices. DISR noted that conversely 'the metal industry has been reluctant to install major new capacity without commitments from the automotive manufacturers'. DISR, however, did suggest that this situation may be improving with 'fuel economy legislation leading to the development of business partnerships between automotive companies and magnesium producers'.⁵⁷
- 2.56 In Australia there are nine magnesium metal projects currently under consideration. The proponent, location, capacity and cost of these projects are shown in Table 2.6.

54 *ibid.*, p. 19.

55 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 6.

56 Professor Gordon Dunlop, Metals CRC, transcript of evidence, p. 249.

57 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 6.

Table 2.6 Status of magnesium metal projects for Australia as at October 2000

Proponent	Proposed facilities & location		Cost	Capacity
			\$m	kt
AMC	Mine	Kunwarara, Qld	1 130	96
	Smelter	Stanwell, Qld		
Anaconda	Mine	40 Kms from Murrin Murrin, WA	1 000	100
Bass Resources	Mine	Main Creek or Savage River	800	80
	Smelter	Bell Bay, Tas		
Crest	Mine	Arthur/Lyons River, Tas	950	95
Golden Triangle	Mine	Woodsreef tailings, NSW	700	80
	Smelter	Woodsreef		
Hazelwood Power	Use of flash ash waste from power station		270	34
HCC	Smelter in Pilbara region of WA based on brine as feedstock		700	50
Mr Grace	Mine	Batchelor, NT	120	50
	Smelter	location to be decided		
SAMAG (Pima)	Mine	Leigh Creek, SA	650	52
	Smelter	Port Pirie, SA		
Total			6 320	617

Source DISR, *Light Metals Industries Action Agenda*, November 2000, p. 6.

2.57 During public hearings, Golden Triangle Resources (GTR) was asked about its Woodsreef project. It is expected that design and construction will commence in about mid 2003 with the commissioning of the refinery towards the end of 2005.⁵⁸ GTR stated:

We expect to be in production towards the end of 2005, but we are not leaping in to get there before everybody else: we want to be sure that the technology is environmentally friendly. We will slot in with the market as it develops, which will occur in stages. The automotive industry, which is the principal concern, is going to have to re-tool to use magnesium components.⁵⁹

2.58 In November 2000 the Commonwealth Government committed \$50 million towards further development of the Australian magnesium process technology.⁶⁰ In addition, the Queensland Government will provide \$50 million for multi-user infrastructure for the magnesium industry at Stanwell.

58 Mr Christopher Laughton, Golden Triangle Resources, transcript of evidence, p. 230.

59 *ibid.*, p. 230.

60 Senator Nick Minchin, Minister for Industry, Science and Resources, Media Release, *\$50 Million Boost for Australian Magnesium Technology*, 14 November 2000.

2.59 The CSIRO and the AMC jointly own the Australian magnesium process technology. Senator the Hon Nick Minchin, the Minister for Industry, Science and Resources, indicated that the 'CSIRO will enter into a commercial agreement with AMC, which has the licence to exploit the technology'. The Minister stated:

AMC is proposing to develop a \$1.2 billion magnesium facility at Stanwell, near Rockhampton in Queensland. The AMC project is based on its extensive magnesite resources at Kunwarara and would initially produce 97 000 tonnes per annum of magnesium metal. AMC is aiming to commission the plant in 2003 and previously received all environmental and planning approvals.⁶¹

2.60 In relation to potential outcomes, the Minister suggested that a 'new emerging light metals industry in Australia has the potential to generate additional capital investment of \$3.5 billion and create a further 7 000 direct and indirect jobs in the downstream and value-adding sectors over the longer term'.⁶²

2.61 While there are a number of magnesium projects under consideration the evidence to the inquiry suggested that there may be a number of impediments that need to be addressed. These issues are discussed in the next session.

Key challenges influencing value-adding

2.62 Two key issues influencing the value-adding potential of the magnesium industry are access to reliable competitive energy, and possible greenhouse gas emission requirements. As both these issues affect the aluminium industry as well they are examined in the final part of this chapter.

2.63 Some other key issues affecting the magnesium industry include:

- sufficient sources of investment;
- technology and R&D;
- international competition;
- tariff barriers; and
- possible cultural barriers to development.

61 *ibid.*

62 *ibid.*

Investment finance

- 2.64 As shown in Table 2.6, the cost of developing the various magnesium projects is significant. The total cost for the nine projects is estimated at just over \$6 billion. DISR noted that large 'Australian or overseas companies with an interest in magnesium investment are limited'.⁶³ DISR, however, did note that a 'number of magnesium proponents are well advanced in negotiations regarding prospective equity participation from major international metal companies'.⁶⁴
- 2.65 DISR noted that all the proponents listed in Table 2.6, other than the Queensland Metals Corporation (QMC) and Anaconda Nickel, have net assets of less than \$20 million. In addition, only QMC and Anaconda have a 'track record in developing projects'.⁶⁵ Further, DISR commented that the 'absence of large Australian or overseas resource companies is a notable feature of the projects'.⁶⁶
- 2.66 As part of this debate, the issue of government financial support was raised. Historically, the Commonwealth Government has been involved with the Australian magnesium industry since the late 1980s. In 1990, for example, QMC was not able to purchase suitable technology. QMC, however, with assistance from CSIRO and \$20 million Commonwealth funding, was able to develop its own electrolytic process.⁶⁷ In addition, the Queensland Government also contributed \$5 million to this project.
- 2.67 GTR indicated that the cost of its Woodsreef Magnesium projects together with the cost of a power station would be close to \$1 billion. GTR indicated that it 'would have to raise a large amount of that money offshore'.⁶⁸ GTR drew attention to the 'reticence and apparent inability of state and federal governments to provide seed funding to these communities for vital services such as energy, water, natural gas and transport'.⁶⁹ GTR commented on the benefits that would accrue to the community from government investment:

...in return for an expenditure of between \$200M and \$350M the government and community would receive a 20 – 50 year life industry, delivering 1,000 – 1,600 jobs at construction, 350 permanent multidisciplinary jobs, training and education and

63 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 9.

64 *ibid.*, p. 9.

65 DISR, submission no. 28.4, p. 25.

66 *ibid.*, p. 25.

67 *ibid.*, p. 21.

68 Mr Keven Beck, Golden Triangle Resources, transcript of evidence, p. 232.

69 GTR, submission 49, p. 3.

apprenticeships and infrastructure that would attract downstream, value added industries. The local injection into the economy would be between \$20M and \$30M per annum and into the nation - \$330M of exports.⁷⁰

- 2.68 The Metals CRC suggested that, in view of the difficulties associated with raising risk capital, there needed to be more attractive tax write-offs.⁷¹ Metals CRC concluded that ‘we need special incentives such as assistance with risk capital to encourage the investment in value-adding industries in Australia’.⁷² The Metals CRC also drew attention to the significance of the automotive industry in influencing the magnesium industry. Automotive producers have an objective to reduce the weight of their products. The Metals CRC suggested that the Government should look at ways ‘of encouraging, enticing or forcing the Australian car industry to become more fuel efficient’.⁷³
- 2.69 In contrast to direct government support, Teksid drew attention to the political stability and certainty offered by Australia, which is an attractive feature for investors. Teksid commented that ‘if you put your capital in here, in 20 years time you will have it, whereas with the other countries in the region you may or may not’.⁷⁴
- 2.70 There have been a number of measures undertaken by the Commonwealth Government to promote investment. For example, in the early 1990s, the Commonwealth Government established a light metals strategy:
- to promote the use of magnesium to the Australian diecasting industry;
 - to produce information booklets on the use of magnesium in automotive components;
 - to run seminars promoting the use of the metal in the Australian diecasting industry; and
 - to promote investment in magnesium auto-parts manufacture in Australia.⁷⁵
- 2.71 On 9 August 2001, the Commonwealth and Queensland Governments announced assistance to help overcome difficulties AMC experienced in raising equity for its project at Stanwell. The Minister for Industry,

70 *ibid.*, p. 3.

71 Professor Gordon Dunlop, Metals CRC, transcript of evidence, p. 252.

72 *ibid.*, p. 251.

73 *ibid.*, p. 251.

74 Mr Ian Howard-Smith, Teksid, transcript of evidence, p. 266.

75 DISR, submission no. 28.4, p. 24.

Science and Resources, Senator Minchin, said that the Commonwealth would act as guarantor for a \$110 million loan.⁷⁶ The Queensland Premier said that his Government would fund a yield enhancement for the first three years of the project at a cost of about \$100 million. The money would effectively be provided by way of a repayable loan which would enable participants in the equity raising to receive a dividend guarantee.⁷⁷

- 2.72 Also on 9 August 2001, Senator Minchin announced that the Commonwealth Government was giving urgent consideration to an application for assistance from the South Australian Magnesium Project (SAMAG) for a refinery proposed for Port Pirie. SAMAG had applied for support under the Strategic Investment Incentive Program.⁷⁸

Conclusions

- 2.73 Australia has an excellent opportunity to be at the forefront of expected world growth in magnesium. It has effective infrastructure and microeconomic reforms are advancing to ensure that Australia is sufficiently competitive to attract capital.
- 2.74 However, it is insufficient for governments to argue that provided economic settings are competitive then companies will invest in Australia. The magnesium industry has the potential to be a significant value-adding industry and contributor to Australia's national accounts. The Australian Government must, alongside industry, monitor world market developments to ensure that Australia is best positioned to benefit from expected future growth.
- 2.75 GTR suggested that, if government invested between \$200 and \$350 million in its Woodsreef magnesium projects, then significant benefits would accrue to the Australian public through jobs, construction, the attraction of downstream value-added industries, and annual exports of about \$330 million. The Committee has insufficient market information to make a recommendation supporting this proposal. However, the provision of a loan guarantee for the AMC project does provide an example of one way that governments could contribute to the development of the magnesium industry when investment finance is difficult to obtain.

76 Senator N Minchin, media release *Minchin announces Government backing for AMC*, 9 Aug 2001.

77 The Hon P. Beattie MP, ministerial media statements, *Queensland Cabinet commits \$100 million to Australian Magnesium project*, 9 Aug 2001.

78 Senator N Minchin, media release *Government considers support for SAMAG*, 9 Aug 2001.

- 2.76 The Government's *Light Metals Industries Action Agenda*, expected to be considered by Cabinet in September 2001, is a positive start to creating a joint industry-government approach to the future of the magnesium industry.
- 2.77 The *Action Agenda* 'will explore where the sector should be positioned globally in 5 to 10 years and applies foresight to determine directional trends in products, markets, technologies, innovation, best practice, knowledge, linkages and industry structures. In relation to capturing growth, the *Action Agenda* will analyse, 'the changes that will be required to capture future opportunities and growth for the industries'.
- 2.78 A further priority of the *Action Agenda* 'sets out measurable outcomes and prioritises specific actions by both industry and government to achieve those outcomes'. The following recommendation will help to ensure that Australian industry and government can respond positively and ensure that the Australian magnesium industry is not disadvantaged during the crucial period ahead.

Recommendation 1

- 2.79 **The Committee recommends that the Commonwealth Government take a pro-active role in facilitating investment in new value-adding industries, where excessive risk aversion and the desire of investors for short-term profits may be acting as impediments.**

Recommendation 2

- 2.80 **The Committee recommends that the Department of Industry, Science and Resources include in the final *Light Metals Industries Action Agenda* a requirement to examine, and where possible respond to, support measures by foreign countries which may distort commercial investment decisions.**

Technology and research and development

- 2.81 DISR commented that 'technology is critical to the success of a magnesium project'.⁷⁹ Of the projects listed in Table 2.6, AMC have

79 DISR, submission no. 28.4, p. 25.

proved their technology in a pilot plant, and 'SMAG, Crest and HCC propose to use existing proven technology'.⁸⁰

- 2.82 The evidence to the inquiry focused on how R&D in the magnesium industry could be encouraged. The Metals CRC suggested that special R&D assistance should be provided 'to encourage metal producers to work with both Australian manufacturers and overseas manufacturers in the area of added value'.⁸¹

Conclusions

- 2.83 The Committee agrees with DISR's comment that 'technology is critical to the success of a magnesium project'. The magnesium industry is in its infancy and from evidence presented to the inquiry has the potential to rise from being a minor metal into the ranks of the major metals. The CSIRO concluded that 'there is a legitimate role for Government in fostering certain industries and the magnesium industry is strong example'. Government cannot ignore its role in assisting the magnesium industry to achieve significant value-adding outcomes. The Government should develop a targeted approach to assisting the magnesium industry to competitive technological and R&D outcomes.

Recommendation 3

- 2.84 **The Committee recommends that the Department of Industry, Science and Resources implement a targeted research and development assistance package for the magnesium industry, aimed at ensuring that Australia benefits from expected future world growth of magnesium production.**

Tariff barriers

- 2.85 A major consideration in developing magnesium is the issue of tariffs and their effects on international competition. DISR reported:

The US has an 8% tariff on magnesium and 6.5% on magnesium alloy; the EU [European Union] has tariffs of 5.3% for pure magnesium and 4.3% for magnesium alloys. Two of the major magnesium producing countries, Canada and Israel, have preferential access to the US market. These tariffs will give

80 *ibid.*, p. 25.

81 Professor Gordon Dunlop, Metals CRC, transcript of evidence, p. 251.

Australian producers a significant disadvantage against competitors.⁸²

- 2.86 The APEC tariff database shows that the Republic of Korea has a tariff of 5 per cent on unwrought magnesium and 8 per cent on magnesium bars and rods.⁸³
- 2.87 The Committee discussed the matter of these tariffs with DISR and sought advice on possible solutions. DISR indicated that it and the Queensland Government had both raised concerns about the tariffs with the Department of Foreign Affairs and Trade (DFAT). DFAT subsequently discussed the issue in bilateral talks with the USA.
- 2.88 DISR indicated, however, that ‘an assessment of our relative negotiating strength suggests that it may be unrealistic to expect the USA to withdraw tariff protection for its domestic magnesium industry on the basis of our request’.⁸⁴ On a positive note, DISR suggested that if discussions with the USA about a possible free trade agreement come to fruition then ‘it may provide a solution to the magnesium tariff issue in the longer term’.⁸⁵

Conclusions

- 2.89 The Committee considers tariffs to be a significant potential impediment to the development of the Australian magnesium industry and every effort should be made to encourage the USA, the EU and other countries to abolish these tariffs. The Committee notes that DFAT has raised these concerns in bilateral talks with the USA. Notwithstanding this, the Committee advises that DFAT should continue with its efforts to encourage the USA, the EU and other countries to abolish their tariffs on pure magnesium and magnesium alloys. The Committee urges the Commonwealth Government to pursue these matters forcefully and directly at a government-to-government level and also to embark on a strategy to pursue tariff elimination in the magnesium industry through the WTO.

82 DISR, submission no. 28.4, p. 25.

83 APEC tariff database, <http://www.apectariff.org/tdb.cgi/ff31303038/apeccgi.cgi>, 17 Aug 2001.

84 DISR, submission no. 28.4, p. 7.

85 *ibid.*, p. 7.

Recommendation 4

- 2.90 The Committee recommends that the Department of Foreign Affairs and Trade, through bilateral trade negotiations and, where possible, multilateral negotiations, seek to eliminate the use of tariffs and other trade barriers in the emerging international magnesium industry.**

International competition

- 2.91 Table 2.5 shows the key magnesium producing countries. Until 1998 the USA was the world's major producer, but production has fallen due to the closure of Dow's 60 000 tonne plant in December 1998. Exports of magnesium from China and Russia have increased from nil in 1990 to about 100 000 tonnes in 2000.⁸⁶ DISR notes that this growth is 'despite the imposition of import restrictions in both the USA and the EU'.⁸⁷
- 2.92 China is estimated to have some 200 magnesium production plants. However, the production capacity of these plants at an average of about 600 tonnes in 1998 compares to average plant production of about 33 000 in western countries. DISR noted that given 'their small scale and the high cost thermal technology they use, it is difficult to see how such production could survive in a market economy'.⁸⁸
- 2.93 The considerable expansion of exports from China, despite the inefficiency of its plants, implies heavy subsidies. It would seem that foreign subsidies, as well as tariff barriers, will be a problem for Australia.

Cultural barriers

- 2.94 During public hearings a concern was raised that Australia's opportunity to be a serious competitor in the world magnesium industry could be undermined by cultural barriers. That is, Australia's history of mining and exporting raw materials and less focus on manufacturing, may undermine developments in the magnesium industry. This view was raised by Teksid which indicated that it would be highly desirable if Australia's future magnesium industry has significant downstream production of components. The Metals CRC, in drawing attention to the effects of adverse cultural conditioning, used an example from the aluminium industry:

86 *ibid.*, p. 25.

87 *ibid.*, p. 25.

88 *ibid.*, p. 25.

...we have seen attempts by one of Australia's major aluminium companies to actually go into downstream manufacture in the automotive industry only to see them eventually pull out. My reading of the situation is that they did not have the culture within the company in order to deal with the issues of manufacturing.⁸⁹

Conclusions

- 2.95 The Committee is concerned that an attitude of avoiding further processing—a form of historical conditioning—may still be present in Australian industry. The *Light Metals Action Agenda* does emphasise the need for innovation and best practice when considering opportunities for future opportunities and growth. At the same time, the Committee suggests that DISR note the concerns raised about cultural barriers and ensure that the final *Action Agenda* addresses this matter.

Energy

- 2.96 The aluminium and magnesium industries have significant energy needs and consider the issue of greenhouse gas abatement as one of the most important policy issues they face. DISR commented that in view of the high energy usage of the aluminium industry, for example, 'any moves to limit greenhouse emissions in Australia could have a significant impact on the industry if not handled carefully'.⁹⁰ The AAC commented 'that the decisions of the Australian Government on greenhouse policy are of the most critical importance to the aluminium industry'.⁹¹
- 2.97 The following section reviews the energy and infrastructure needs of the aluminium and magnesium industries. This is followed by an examination of how the industries view the implications of the Kyoto Protocol on greenhouse gas abatement.
- 2.98 One of the key inputs for the aluminium industry is competitive power costs. It is estimated that power accounts for about 25 per cent of total aluminium production costs.⁹² The aluminium industry alone consumes 16 per cent of all Australian electricity consumption. Bell Bay smelter

89 Professor Gordon Dunlop, Metals CRC, transcript of evidence, p. 250.

90 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 9.

91 AAC, submission no. 31.2, p. 4.

92 Stevenson, T., 'Aluminium, Australia's role in the world market', *OUTLOOK 2000, Volume 3, Proceedings of the National Outlook Conference*, Canberra, 29 February to 2 March 2000, p. 263.

consumes about the same amount of energy as the City of Hobart. The aluminium industry is also the largest consumer of natural gas, fuel oil, coals and distillate in alumina refining.⁹³ GTR indicated that it, or any other Australian company producing 80 000 tonnes of magnesium, would 'need to pay about \$14 million to \$16 million a year for electricity and about \$10 million for natural gas'.⁹⁴

- 2.99 In relation to energy efficiency, a November 2000 study commissioned by DISR found that 'the Australian alumina industry was very low in energy intensity by world standards and was within two per cent of world's best practice'.⁹⁵
- 2.100 The AAC commented that competitively priced energy 'is absolutely imperative for the aluminium industry and has been one of the foundation stones of the successful growth of the industry'.⁹⁶
- 2.101 DISR noted that the availability of competitively priced power is a major factor influencing where industries decide to locate alumina refineries. For example, a major factor in Comalco's proposed new alumina refinery was the availability of gas at Gladstone.⁹⁷ The IC noted that the reason why aluminium smelters are located in the eastern states 'is a reflection of the relatively high electricity charges in Western Australia'.⁹⁸
- 2.102 The provision of sufficient electricity under reforms arising from the national competition policy was raised. Microeconomic reform of the electricity industry, during the past decade, has involved a combination of commercialisation, corporatisation, privatisation and pricing reforms aimed at 'increasing competition, including initiatives aimed at creating the national electricity market'.⁹⁹ In 1998 the IC stated:

Most firms in the aluminium industry reported that, to date, they have not benefited from electricity reforms because most are locked into long-term contracts and have not been able to take advantage of lower tariffs resulting from reforms.¹⁰⁰

93 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 8.

94 Mr Keven Beck, GTR, transcript of evidence, p. 229.

95 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 8.

96 AAC, submission no. 31.2, p. 6.

97 DISR, submission no. 28.4, p. 17.

98 IC, *Micro Reform — Impacts on Firms: Aluminium Case Study*, Research Paper, AusInfo, Canberra, March 1998, p. 68.

99 *ibid.*, p. 71.

100 *ibid.*, p. 71.

- 2.103 The IC reported that ‘Comalco Smelting stressed the importance of pushing ahead with electricity reforms in Australia because other countries also are reforming their electricity supply industries’.¹⁰¹ The IC concluded ‘that reforms must continue to take place if the Australian aluminium industry is to maintain its favourable cost position in the international market’.¹⁰²
- 2.104 DISR reported that the outcomes from electricity reform have been positive across the economy. DISR commented that between 1995-2000 the estimated aggregate economy-wide benefits from electricity reform were around \$15.8 billion. Further, this ‘represents annual benefits of around \$1.5 billion per annum in 2000, increasing to around \$2.4 billion per annum by 2010 which will have significantly strengthened international competitiveness and investment in Australia’.¹⁰³
- 2.105 Evidence to the Committee, however, was mixed on the benefits arising from energy reforms under competition policy. GTR commented that it is ‘now nigh on impossible to obtain an agreed price for electricity in any state, due to the nature of the trading and the pool operation and the desire of generators and distributors to recoup their losses’.¹⁰⁴
- 2.106 GTR indicated that the ‘asking price for a megawatt hour of electricity, of a load such as our need, of 200MWh, can be anywhere between \$30/MWh and \$75/MWh depending on the location and source of supply’.¹⁰⁵ In view of this situation, GTR proposed that ‘some mechanism could be inserted into this model to permit projects of national significance to have set price contracts initially that would enable projects, such as magnesium production, to be launched and given a time period to become competitive’.¹⁰⁶
- 2.107 In addition, GTR criticised how governments operate and own assets. GTR criticised the NSW Government ‘for having no return requirement on their assets and, therefore, generators in New South Wales were not driven by the same imperatives as the Victorian generators’.¹⁰⁷ In addition, GTR stated:

101 *ibid.*, p. 74.

102 IC, *Micro Reform — Impacts on Firms: Aluminium Case Study*, Research Paper, AusInfo, Canberra, March 1998, p. 71.

103 DISR submission no. 28.5, p. 3.

104 GTR, submission no. 49, p. 1.

105 *ibid.*, p. 1.

106 *ibid.*, p. 2.

107 Mr Keven Beck, GTR, transcript of evidence, p. 230.

I think we rushed ahead in the national competition policy and, to some extent, we could probably blame Victoria for heading that rush. We now find generators that cannot get an economic return on their assets, and it will destabilise us for the next five years as they try to sell them or try to recover their investment. They are among the largest pool generators in Australia.¹⁰⁸

2.108 During hearings, the Committee investigated claims that there is a lack of generating capacity in the national electricity market (NEM) which is becoming an impediment to new value-adding investment in minerals processing plants in Australia. DISR responded that supply capacity in the NEM 'is currently sufficient to meet demand in all but extreme summer peak periods in Victoria and South Australia'. DISR suggested that the NEM relies on market signals to stimulate new generating investment and 'evidence suggests that these signals are working'.¹⁰⁹ DISR identified the following developments as evidence of this:

- Queensland generation capacity was boosted by 840MW in early 2001 with the Callide C generator becoming operational. Queensland has a further 1700MW of committed generation projects to become operational over the next two years;
- the 478 MW gas-fired Pelican Point power station commenced operation in South Australia late last year and is now operating at full capacity;
- on 28 February 2001, AGL announced its intention to construct a 150MW gas peaking plant at Somerton, Victoria. It is planned for completion in time for 2001-2002 summer; and
- Edison Mission is considering the construction of a 300MW gas peaking plant in the LaTrobe Valley.¹¹⁰

2.109 In relation to interconnection, DISR suggested that interconnection will become more effective as a 'significant amount of investment in network interconnection is either committed or planned in the NEM'. Interconnection allows more efficient utilisation of existing generating capacity to meet growing demand throughout the NEM.¹¹¹

2.110 There were also concerns raised about inconsistent action between state governments. For example, GTR suggested that the State Governments

108 *ibid.*, p. 230.

109 DISR submission no. 28.5, p. 3.

110 *ibid.*, p. 3.

111 *ibid.*, p. 3.

of Tasmania and South Australia take a more active role in energy negotiations. In contrast, New South Wales and Victoria do not become involved in energy negotiations on the grounds that the negotiations are commercial decisions.¹¹² In view of these inconsistencies, GTR stated:

So you have this disparity, this inconsistency, in application of competition policy and what I would call underlying effects of subsidy. It is clear that, should Tasmania and South Australia adopt that line, the US particularly will impose sanctions against us on the basis that they would view that as anti-WTO policy and engaging in some sort of hidden subsidy, given that electricity and natural gas is such a high input. So we are very worried.¹¹³

2.111 The AAC supported moves to establish competitive interstate markets for energy but suggested that there 'is still some way to go in this regard and the goal should be pursued urgently'.¹¹⁴ The AAC stated:

There is a lack of direction in the national scene on energy policy. Given the importance of this commodity to the Australian economy such a national policy is needed without delay. This will help give long term confidence to investors in energy using industries like aluminium and help provide some context for other related policies such as greenhouse.¹¹⁵

2.112 GTR called on the federal Government 'to impose some sanity on the national competition policy for electricity because we cannot afford to have those huge, escalating price fluctuations'.¹¹⁶

2.113 On 26 March 2001 the State Governments of NSW and Victoria created a policy forum to improve the operation of the NEM. The forum will 'comprise Ministers responsible for energy markets in each of the NEM jurisdictions and will oversee the development of policy in the NEM'. The media release stated that the 'NEM has been operating reasonably effectively since it commenced in 1998, but there are a number of policy issues that need to be resolved to ensure that the market continues to deliver reliable and affordable electricity to the community'.¹¹⁷

112 Mr Keven Beck, GTR, transcript of evidence, p. 229.

113 *ibid.*, p. 229.

114 AAC, submission no, 31.2, p. 6.

115 *ibid.*, p. 6.

116 Mr Keven Beck, GTR, transcript of evidence, p. 229.

117 The Minister for Energy and Resources, State Government of Victoria, *Media Release*, 26 March 2001.

- 2.114 The NEM, which commenced operation in December 1998, is a product of the National Competition Policy. The participating jurisdictions include NSW, Vic, Qld, SA and the ACT. In 1995 the Commonwealth and State Governments signed the Competition Principles Agreement. The purpose was to remove restrictions on competition on an ongoing basis unless those restrictions could be shown to be in the public interest and would benefit the overall community. Since 1995 government reforms have been assessed every two years. The third formal assessment of the NEM was forwarded to the Treasurer at the end of July 2001 but is not yet publicly available (as at August 2001).
- 2.115 The National Competition Council (NCC) assessments form the basis of the Commonwealth Treasurer's decision on National Competition Policy Payments in 2001–02. The NCC commented that during 'the five years from 2001–02 an estimated total of \$3.8 billion is available to State and Territory Governments – the pre-requisite for full payment is satisfactory reform progress'.¹¹⁸
- 2.116 As part of the third tranche assessment framework, the NEM will be assessed. The NCC noted that reforms agreed to by the Council of Australian Governments (COAG) 'had as their centrepiece the creation of a fully competitive NEM'.¹¹⁹ The NCC's discussion paper on the NEM commented that 'there are some aspects of the current market arrangements which may be acting to limit competition in the NEM'.¹²⁰ The NCC stated:
- Areas in which the Council is concerned that impediments to competition may exist, or emerge, include the transitional and institutional arrangements, the structure of the generation market, the framework underpinning interconnect developments, and the implementation of full retail competition.¹²¹
- 2.117 In particular, the NCC noted in its discussion paper that evidence of 'sustained high pool prices raises a question for the Council as to whether the structure of the generation market is ensuring sufficient competition'.¹²²
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118 National Competition Council, *National Competition Policy Assessment*, Press Release, 5 February 2001, [www.ncc.gov.au].

119 National Competition Council, *NCP – Third Tranche Assessment Framework, Framework for the Third Tranche Assessment of Government's Progress with Implementing National Competition Policy and Related Reforms*, 5 February 2001, p. 6.1, [www.ncc.gov.au].

120 *ibid.*, p. 6.3.

121 *ibid.*, p. 6.5.

122 *ibid.*, p. 6.7.

Conclusions

- 2.118 The Committee takes seriously the concerns about the NEM. It is unacceptable that there may be problems of supply and extreme price fluctuations. The Committee supports the initiative by the State Governments of NSW and Victoria to create a policy forum to examine the operation and performance of the NEM.
- 2.119 In addition, the Committee notes that the National Competition Council has forwarded the third tranche assessment of the NEM to the Treasurer. The Committee will provide a copy of this report to the NCC for consideration in the next annual assessment following the third tranche assessment of the NEM. It is also essential that those light metals industries that have criticisms of the NEM send their concerns to the NCC for consideration in future reviews.
- 2.120 The Committee also notes that it received expressions of concern about the inconsistent activities of State Governments and the influence this may be having on the NEM. The Committee notes that the Strategic Leaders Group (SLG) which advises on the development of the *Action Agenda* for the Light Metals Industries does not include State Government representatives.
- 2.121 The SLG comprises industry representatives and Commonwealth Government representatives from DISR and the CSIRO. In view of the fact that energy provision is a key input to the light metals industries and the State Governments have important responsibilities in this area, it is not clear why representatives of State Governments are not on the SLG. This would have provided an opportunity for industry representatives to raise their energy concerns, and develop an *Action Agenda* that provides a more complete response to future energy needs. DISR indicated that the *Action Agenda* is expected to be considered by Cabinet in September 2001. The following recommendation is meant to assist the work of future SLG's in developing and enhancing future *Action Agendas*.

Recommendation 5

- 2.122 **The Committee recommends that the Department of Industry, Science and Resources include representatives of State Governments in its Strategic Leadership Group, which is responsible for developing an *Action Agenda* for the light metals industries.**

The Kyoto Protocol

- 2.123 The Kyoto Protocol on greenhouse gas emissions was one of the most contentious issues raised in the inquiry. As shown in the previous section, the light metals industries are large users of energy, with a high dependence on coal as the energy source. Therefore, agreements to restrict greenhouse gas emissions will have an impact on these industries. In contrast, the use of lightweight metals such as aluminium and magnesium, in the automotive market for example, has significant environmental benefits.
- 2.124 In relation to the aluminium industry, there are various sources of greenhouse gases (GHG). The key GHGs include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. Aluminium smelters emit carbon dioxide and perfluorinated carbon compounds. In addition, a baking process of up to 28 days results in the production of GHG due to the burning of natural gas. The IC concluded that any GHG 'emission abatement activities are also likely to have quite a substantial impact on the operations of the refining industry'.¹²³
- 2.125 The largest source of GHG comes from power generation. Much of the aluminium industry is a large consumer of coal-based electricity. However, Comalco's Bell Bay operation uses hydroelectricity. The IC stated:
- Depending on the type of policy adopted, government efforts to reduce Australia's GHG emissions could result in substantially higher costs of electricity generation, which could flow through into higher inputs prices for the aluminium smelting industry.¹²⁴
- 2.126 Therefore, directly and indirectly, the aluminium industry is a producer of GHG. Estimates suggest that if Australia did not have an aluminium industry then 'carbon emissions would be reduced by 6.5 million tonnes and average per capita emission from all energy sources would be lower by 8 per cent'. Hence, the IC concluded that 'efforts to reduce GHG emissions have the potential to affect the industry significantly'.¹²⁵
- 2.127 The magnesium industry also has intense energy needs. At the same time, because magnesium is reactive with the atmosphere it must be protected by an inert gas. The most satisfactory is sulphur hexafluoride,

123 IC, *Micro Reform — Impacts on Firms: Aluminium Case Study*, Research Paper, AusInfo, Canberra, March 1998, p. 153.

124 *ibid.*, p. 154.

125 *ibid.*, p. 154.

which has about 23 000 times the effect of carbon dioxide as a greenhouse gas.¹²⁶ The Metals CRC indicated that it has been working with AMC and has invented a replacement gas, which has 20 times less effect on the atmosphere.¹²⁷

- 2.128 In response to global warming, the Kyoto Protocol to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) was adopted in December 1997. The key outcomes of the Kyoto climate change conference were:
- differential rather than uniform, or flat rate, country targets were accepted as a core principle;
 - an overall target reduction in total GHG emissions by developed countries, listed in Annex I to the UNFCCC, of at least 5 per cent of 1990 levels by 2012 was agreed, with different targets for Annex I countries consistent with the overall target;
 - Australia's total emissions of GHGs are allowed to rise by 8 per cent by 2012 from the baseline. Two other countries – Iceland and Norway – negotiated targets which permitted increases in GHG emissions over this period, while three countries – New Zealand, Russia and the Ukraine – agreed to stabilise their emissions at the baseline level;
 - countries can act jointly to fulfil their commitments. For example, although European Community members have committed jointly to an 8 per cent reduction in their aggregate emissions, they will be required to agree to individual targets and to notify these targets at the time of ratification;
 - the change in GHG emissions resulting from human-induced land-use change and forestry activities were included in all Annex I countries' targets. [Land use change and forestry activities account for almost one-fifth of Australia's emissions]; and
 - non-Annex I countries (developing and newly industrialising countries) were not set emission reduction targets under the Protocol.¹²⁸
- 2.129 The OUTLOOK 2001 conference considered the value-added chain of aluminium production and the impact of the emission abatement policies in Annex I countries. This analysis suggested that the abatement

126 Mr Christopher Laughton, GTR, transcript of evidence, p. 231.

127 Professor Gordon Dunlop, Metals CRC, transcript of evidence, pp. 253-54.

128 IC, Micro Reform — *Impacts on Firms: Aluminium Case Study*, Research Paper, AusInfo, Canberra, March 1998, p. 158.

policies in Annex I countries would lead to an international quota price that would be equivalent to a penalty on each tonne of greenhouse gas emitted during the production process.¹²⁹ This in turn is expected to result in an increase in price for fossil based fuel in Annex I countries and a lowering of price for non-Annex I countries 'as reduced Annex I demand lowers world prices, particularly for coal'.¹³⁰ The OUTLOOK 2001 conference heard that this chain of events would result in the following outcomes:

The increase in fossil fuel based energy increases the production costs of aluminium smelting and alumina refining in Annex B regions, reducing competitiveness with non-Annex B regions. The change in competitiveness results in a contraction of aluminium and alumina production in Annex I regions and an expansion in non-Annex I regions.

As a result of the decline in alumina refining in Annex I regions, bauxite production in Annex I regions also declines. Conversely, non-Annex I production would tend to increase.¹³¹

[Note: Annex B refers to Annex B of the Kyoto Protocol. That Annex sets the emission reduction targets for the listed countries]

- 2.130 In 2000 the Senate Environment, Communications, Information Technology and the Arts Reference Committee suggested that 'Australia has a legitimate interest in ensuring that key features of the Protocol are well designed, and that developing countries agree to take on binding targets at an appropriate time'.¹³² The Senate Committee stated that the Protocol 'is widely recognised as a first step towards stabilising the climate system and these issues do not, in themselves, justify a delay in ratification'.¹³³
- 2.131 The Joint Standing Committee on Treaties is also reviewing the Kyoto Protocol and released a discussion paper in April 2001. At that time, it concluded that 'it would be imprudent to provide definitive advice to Parliament on whether Australia should ratify the Protocol' until the

129 Allen, C., Haine, I., & Curtotti, R. 'Appendix: Impacts of climate change policy response on the Australian aluminium industry, *OUTLOOK 2001, Volume 3, Proceedings of the National Outlook Conference*, Canberra, 27 February to 1 March 2001, p. 267.

130 *ibid.*, p. 267.

131 *ibid.*, p. 267.

132 Senate Environment, Communications, Information Technology and the Arts Reference Committee, *The Heat Is On: Australia's Greenhouse Future*, Senate Printing Unit, Canberra, 2000, p. xxv.

133 *ibid.*, p. xxv.

design, scope and implementation of the Protocol have been resolved.¹³⁴ The report of the Treaties Committee commented that the Government should continue to put the national interest first in these negotiations by ensuring that:

- Australia's economic growth, employment and industry competitiveness are not jeopardised;
- any abatement measures agreed to are cost-effective from a domestic perspective; and
- any agreed abatement measures are environmentally effective.¹³⁵

2.132 Australia signed the Kyoto Protocol in 1998 but has not undertaken ratification. The Protocol remains to be ratified and will only come into force when 55 parties to the convention, incorporating parties which were responsible for 55 percent of GHG emissions from Annex I countries in 1990, ratify the protocol.¹³⁶ A significant event influencing the future of the Protocol was the declaration by the US Government that it will not ratify the Protocol. In a press briefing in March 2001, a White House spokesman stated:

The President has been unequivocal. He does not support the Kyoto treaty. It exempts the developing nations around the world, and it is not in the United States' economic best interest. The President has directed his Cabinet Secretaries to begin a review so we can, as a nation, address a serious problem, which is global warming. That Cabinet-level review is underway, and the President looks forward to receiving the results.¹³⁷

2.133 The Federal Minister for the Environment and Heritage, Senator the Hon Robert Hill, stated that, without ratification of the Protocol by the United States, it will not come into legal effect. Senator Hill stated:

If the United States does withdraw and the protocol collapses, Australia would wish it to be overtaken by some other process that will continue the global community towards a better outcome in terms of greenhouse gas abatement, and we would operate and contribute constructively to that goal. That is the position we are in. We are pleased at what we have been able to

134 Joint Standing Committee on Treaties, *Report 38, The Kyoto Protocol – Discussion Paper*, Canberra, 2001, p. 2.

135 *ibid.*, p. v.

136 IC, *Micro Reform — Impacts on Firms: Aluminium Case Study*, Research Paper, AusInfo, Canberra, March 1998, p. 161.

137 Mr Ari Fleischer, Office of the Press Secretary, The White House, 28 March 2001.

achieve in this country since late 1997. We are doing it not only because of the Kyoto protocol but because we believe it is the right thing to do, and we intend to continue along that path.¹³⁸

2.134 Evidence to the inquiry generally supports the view that the Kyoto Protocol could result in a shift of some aluminium production away from Annex I countries to developing countries, which are not subject to the protocol. At the same time, it was suggested that this outcome would make little impact on global emissions because developing countries do not have the efficiency standards of the developed countries.

2.135 DISR indicated that the Australian aluminium industry has participated in the Greenhouse Challenge.¹³⁹ Between 1990 and 1998, the alumina sector achieved a reduction of 8.9 per cent in greenhouse gas emissions per tonne of product. For aluminium smelting, the 'comparable figure is 22 per cent including emissions from externally generated electricity'.¹⁴⁰

2.136 In relation to the Kyoto Protocol, DISR stated:

...moves to limit greenhouse emissions in Australia could have a significant impact on the industry if not handled carefully. Whilst developing countries remain outside the Kyoto Protocol, severe greenhouse restrictions could see capacity move offshore and this paradoxically could lead to a worse greenhouse outcome on a global basis, since Australia is among the most energy efficient producers.¹⁴¹

2.137 The AAC suggested that if the Kyoto Protocol does result in increased energy prices then Australia's value-added sectors could be compromised. The AAC stated:

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

138 Senator the Hon Robert Hill, *Senate Hansard*, 2 April 2001, p. 23284.

139 The Greenhouse Challenge - launched in 1995 - is a joint voluntary initiative between the national Government and industry to abate greenhouse gas emissions. Participating organisations sign agreements with the Government that provide a framework for undertaking and reporting on actions to abate emissions.

140 DISR, *Light Metals Industries Action Agenda*, November 2000, p. 9.

141 *ibid.* p. 9.

greenhouse benefit as the investment in the aluminium industry will go mainly to countries not covered by the Kyoto targets.¹⁴²

2.138 The AAC did conclude that if the protocol is ratified then 'Australia must find ways to work with it while allowing a fair and equitable contribution from industries such as aluminium'.¹⁴³

2.139 In addition, the AAC brought attention to the point that the Protocol does not recognise the contribution that countries make in producing lightweight material, for example, in automobiles. The AAC stated:

The Kyoto Protocol is seriously flawed because it doesn't include developing countries and because it doesn't recognise the greenhouse benefits of commodities such as aluminium that move in world trade. In that regard, the costs of producing the material fall entirely on the producing country (embodied energy) and the benefits in end use (light weighting of transport vehicles for example) and recycling (only 5% of primary energy) go entirely to the importing country.¹⁴⁴

2.140 During inspections, Queensland Alumina Ltd suggested that new legislation requiring 2 per cent electricity to be derived from renewable sources also presents a problem for the industry.

Conclusions

2.141 The Kyoto Protocol on greenhouse gas emissions was a useful first step in addressing global warming. However, evidence to the Committee suggests that the Protocol has serious flaws that require attention before Australia should ratify the protocol. The most serious criticisms relate to the exclusion of developing countries from the protocol. The light metals industries suggest that this omission could lead to industry moving to developed countries. DISR suggested that this could lead to a worse greenhouse outcome because Australia is among the most energy efficient producers in the world. The exclusion of developing countries is the major reason for the United States Government rejecting the Protocol.

2.142 The Committee also notes that the Protocol does not give enough recognition to countries that produce lightweight materials which, for example, help to improve efficiency in automobiles.

142 AAC, submission no. 31, p. 3.

143 *ibid.*, p. 5.

144 *ibid.*, p. 5.

- 2.143 The Committee suggests that reform of the Kyoto Protocol, or the development of a new agreement, is necessary and must include developing countries. In order to persuade developing countries to agree to meet emission targets, those targets will need to be generous. Developed countries must also be prepared to assist developing countries, including through the provision of emission reduction and abatement technology. Australia should already be examining the mechanisms by which it could transfer such technology. In the meantime, it is essential that the light metals industries continue to find further efficiencies in their production methods.
- 2.144 The withdrawal of the USA from the Protocol has placed a serious impediment in the way of the Protocol being ratified, and no early conclusion to this problem is expected. The Australian Government should take this delay as an opportunity to review its needs and the applicability of the Protocol, taking into account the concerns raised in this report.

Recommendation 6

- 2.145 **The Committee recommends that the Australian Greenhouse Office review Australia's needs and the applicability of the Kyoto Protocol. This review must include strategies for including emission targets for developing countries in the existing or future protocols and also the mechanisms by which Australia will transfer emission reduction and abatement technology to developing countries.**

Infrastructure

- 2.146 In addition to energy needs, evidence to the inquiry indicated that the provision of suitable infrastructure is also a major factor when considering investing in the light metals industries. The Commonwealth Government is in the process of developing the Heavy Engineering and Infrastructure Industry Sector *Action Agenda* (HEIAA). The purpose of the HEIAA 'is to identify obstacles to the growth and international competitiveness of the heavy engineering and infrastructure sectors and, in concordance with government and industry, make recommendations for possible resolution of issues'.¹⁴⁵

145 DISR, Heavy Engineering & Infrastructure, Action Agendas, [www.isr.gov.au/agendas]

2.147 In addition, the Commonwealth Government made statements about possible incentives for major projects as part of its 1997 *Investing for Growth* statement. The Government stated:

The Government is not disposed towards providing across the board investment incentives for major projects or establishing a dedicated fund for that purpose. But the Government does acknowledge that in particular limited and special circumstances which meet established criteria there may be a need for some specific assistance.

Such incentives, which could include grants, tax relief or the provision of infrastructure services, will be considered on a case by case basis...¹⁴⁶

2.148 GTR commented, in its inquiry evidence, that the 'key factors affecting our ability to carry out a definitive feasibility lie in the apparent inability of state development bodies to deal quickly with decisions on transport, energy and water'.¹⁴⁷

2.149 GTR, however, did suggest that the NSW Government 'was very good to deal with in that they have admitted that perhaps their department should have looked at infrastructure development some time ago in areas where there were known to be resources such as coal methane gas in northern New South Wales, the serpentinite, and other areas of resource development, but they have tended to concentrate on the cities or the Hunter Valley'.¹⁴⁸

2.150 The WA Government acknowledged that infrastructure needs are a critical factor and, as such, supported some government assistance. The WA Government stated:

The private sector is being encouraged to play a greater role in the provision of infrastructure to users. It is nevertheless recognised that the time horizon for private sector returns from infrastructure provision may be shorter than that of the government. In this circumstance some government contribution to the provision of infrastructure may be justified.¹⁴⁹

2.151 In its first submission, the WA Government noted that the Commonwealth Government's *Investing for Growth* statement mentions

146 Commonwealth Government, *Investing for Growth*, 1997, p. 43.

147 GTR, submission no. 49, p. 1.

148 Mr Kevin Beck, GTR, transcript of evidence, p. 234.

149 Western Australian Government, submission no. 37, p. 13.

that ‘incentives for industry could include grants, tax relief or the provision of infrastructure services’.¹⁵⁰ The WA Government, however, reported that to date, ‘the provision of infrastructure services has not been a favoured form of assistance’. The WA Government indicated that its preference ‘is for any project assistance to be provided in the form of multi-user infrastructure, rather than direct financial assistance or tax relief’.¹⁵¹ The WA Government outlined its reasons for this preferred form of investment:

One reason for this preference is that it reduces the level of risk borne by taxpayers, while still providing significant direct assistance to individual projects. For example, a government contribution to improving infrastructure in a region will have the effect of improving the overall attractiveness of that region for investment as well as lowering costs for existing businesses. Considerable economic benefits are likely to be generated even if the original project which was the catalyst for the investment fails. This is not the case with direct, project specific financial assistance which is effectively an all or nothing bet on a single project.¹⁵²

- 2.152 As part of the inquiry, the Committee held discussions with local government and business representatives in Gladstone. The representatives noted that there are difficulties in financing infrastructure projects in regional areas. In particular, there was concern at the increasing emphasis on the short-term commercial returns from infrastructure provision. In contrast, community representatives suggested that infrastructure provision should be more associated with nation building particularly in regional areas.
- 2.153 In a February 2000 report, the House of Representatives Standing Committee on Primary Industries and Regional Services addressed the issue of regional infrastructure. The Primary Industries Committee heard that infrastructure provision should be less associated with short-term budgetary expenditure and more associated with investment for future generations.¹⁵³

150 *ibid.*, p. 8.

151 *ibid.*, p. 9.

152 *ibid.*, p. 9.

153 House of Representatives Standing Committee on Primary Industries and Regional Services, *Time running out: Shaping Regional Australia's Future*, CanPrint, Canberra, February 2000, p. 45.

- 2.154 The Primary Industries Committee made a series of recommendations addressing the provision of infrastructure in regional areas. In particular, it recommended the establishment of ‘a National Infrastructure Advisory Council (NIAC), with expertise from the public and private sectors, to facilitate the efficient and equitable provision of national infrastructure by both public and private sector stakeholders’.¹⁵⁴ In conjunction with this recommendation, the Primary Industries Committee recommended that the NIAC should report through COAG to ministers responsible for regional development.
- 2.155 In the Government’s response to the report, dated 23 May 2000, the recommendation was rejected. The Government argued that the NIAC would duplicate effort by the COAG, the Australian Transport Council and the National Transport Council in advancing infrastructure planning. In addition, the ‘Regional Minerals Program, managed by DISR, encourages a coordinated regional approach to development of new mines, processing and related infrastructure in an effort to improve opportunities and the international competitiveness of Australia’s mineral industry’.¹⁵⁵
- 2.156 In response to the proposal that the NIAC report to the COAG, the Government responded that ‘infrastructure issues are being examined as part of the ongoing dialogue between regional development ministers’.

Conclusions

- 2.157 The Committee agrees with evidence made to the inquiry that the provision of infrastructure, through public or private means, should be seen as an investment rather than short term financial expenditure. Commonwealth and State Governments should seek to develop flexible and creative responses to industry assistance relating to the provision of infrastructure.
- 2.158 The Committee notes that, through COAG, infrastructure issues are being examined as part of the ongoing dialogue between regional development ministers. A key objective for this Ministerial Council should be to undertake an audit of government and industry provision of infrastructure, and assess outcomes arising from policy commitments, relating to infrastructure, made in the *Investing for Growth* statement.

154 *ibid.*, p. xxii.

155 Government Response to the report by the House of Representatives Standing Committee on Primary Industries and Regional Services, *Time running out: Shaping Regional Australia’s Future*, 23 May 2000, p. 12

Recommendation 7

- 2.159 **The Committee recommends that the Commonwealth Minister for Transport and Regional Services ensure that, at the next meeting of the Ministerial Council on Regional Development, priority be given to the development of a long-term strategy for the provision of infrastructure to serve the needs of regional and rural communities and value-adding industries.**