

THE CHAMBER OF MINERALS AND ENERGY
OF WESTERN AUSTRALIA INC



Ref: ga00731

21 August 2002

Ms B Forbes
Committee Secretary
Standing Committee on Industry and Resources
House of Representatives
Parliament House
CANBERRA ACT 2600

Dear Ms Forbes

CHAMBER SUBMISSION TO THE PROSSER INQUIRY

Attached, for your consideration, is the Chamber of Minerals and Energy's submission to the House of Representatives Inquiry into Resources Exploration Impediments.

The Chamber appreciates the opportunity to outline its views on an issue that presents a significant challenge to the future of the minerals sector.

In reviewing the terms of reference, the Chamber has identified four major areas where Government intervention may assist in the stimulation of the sector:

- removal of impediments to capital investment;
- removal of regulatory impediments to land access;
- streamlining and simplifying of approvals processes; and
- the provision of more, high quality geoscience information.

To assist the Government to address these challenges, the Chamber has made a range of recommendations that will protect the Government's revenue base while allowing the minerals sector to remain vibrant in the future.

In providing recommendations to the Committee of Inquiry, the Chamber would like to highlight the central role the minerals industry plays in regional development. In fact, in many regions, the closure of mining operations would have a significant deleterious impact. For this reason, the Government needs to recognise the importance of maintaining significant operations in remote regions. Increased exploration is essential for this to occur.

The Chamber believes that the Inquiry presents the Government with an ideal opportunity to tackle a key economic issue. For this reason, we would be happy to meet with the Committee to expand on any matters raised in the submission.

House of Representatives Standing Committee
on Industry and Resources

Submission No: 78

Date Received: 26 AUGUST 2002

Secretary: *Suey-Lyn Loh*

*Industry + Resources
Committee. Rec. 26/8/02*

If the Committee would like to discuss any aspect of the submission or the possibility of a face to face meeting, please contact Dr Ross Theedom, my Executive Officer of Aboriginal Affairs, on (08) 9325 2955.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Tim Shanahan', with a long horizontal flourish extending to the right.

Tim Shanahan
Chief Executive

att

SUBMISSION TO

HOUSE OF REPRESENTATIVES INQUIRY
INTO RESOURCES EXPLORATION
IMPEDIMENTS

August 2002



**THE CHAMBER OF
MINERALS AND ENERGY
OF WESTERN AUSTRALIA INC**

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EXECUTIVE SUMMARY

On 24 May 2002, the Minister for Industry, Tourism and Resources, the Hon Ian Macfarlane MP, established the *Ministerial Inquiry into Resources Exploration Impediments* to inquire into and report on any impediments to increasing investment in mineral and petroleum exploration in Australia.

In addressing the terms of reference, the Chamber of Minerals and Energy (the Chamber) identified five broad categories where intervention or assistance by Government would impact favourably on exploration investment;

- impediments to capital;
- access to land;
- approvals processes;
- geoscience information; and
- regional development.

Exploration is an expensive and high risk activity. Securing investment in such activity is a significant issue. Given the challenge that exists for small players trying to access capital, the Chamber considers that the Government should adopt two measures that would provide a stimulus to exploration investment activity:

- a flow through share scheme similar in operation and nature to the Canadian Scheme; and
- a 125% taxation credit system for expenditure on exploration.

Both these measures would encourage investment in exploration and would ensure that equity markets would look more favourably on exploration funding.

Access to land is a key area where Government action is likely to result in the stimulation of exploration. The mining industry is faced with a number of impediments to gaining access to land. These include:

- native title and heritage legislation;
- the veto rights of freehold land owners; and
- limitations on access to land in National Parks and Nature Reserves.

If the Commonwealth Government is serious about stimulating exploration, it needs to work with the WA State Government to reduce the uncertainty associated with land access. Together, they should develop strategies that will ensure that the rights of various stakeholder and interest groups are protected whilst increasing the availability and ease of access to prospective land.

The approvals process for the minerals industry is complex and time consuming. It requires the commitment of significant levels of resources and time to work through the multitude of project development requirements. The Commonwealth and WA State Governments need to review these requirements and develop alternative measures that eliminate duplication and any unnecessary processes.

The State Government has commenced this through the Keating Review of the Project Development Approvals System. However, more needs to be done. Without this, the process of discovery and development of new projects will be hindered and the minerals industry, the backbone of the Western Australian economy, will face an uncertain future.

For the minerals industry to remain vibrant, it also requires access to large quantities of high quality geoscience information. While Geoscience Australia and the Geological Survey of Western Australia produce information of the desired standard, more needs to be produced to stimulate exploration. The Chamber recommends that more resources be provided to these organisations to increase the quantity of data available to industry.

Finally, the most striking feature of the development of the regions in Western Australia is the significance of the mining sector. This submission shows that for many regions, the mining sector has been the:

- principal driver of growth;
- a substantial contributor to the development of regional infrastructure;
- the principal driver of employment;
- the principal driver of Indigenous employment; and
- the principal trainer of Indigenous people.

Without the stimulus of a vibrant mining sector, Governments at all levels will be required to intervene on a more consistent basis. Funding will need to be diverted to regional services to maintain existing levels and will put pressure on the tax base and see demand for funds increase. In fact, without the input of the mining industry, governments will largely be the only providers of services and will therefore need to increase their contributions to the regions to maintain their viability and health.

In this submission, a range of recommendations have been made. These recommendations are outlined in the section that follows.

Summary of Recommendations

1. The Commonwealth Government introduce a flow through share scheme to encourage greater exploration by maximising the benefit of the taxation deduction.
2. The Commonwealth Government introduce 125% deductibility for "greenfields exploration".
3. The Commonwealth Government encourage the WA State Government to reject the Wand Review recommendations (as per the attached Chamber submission) and establish a regime that will assist all stakeholders in this vital area.
4. The Commonwealth Government encourage the WA State Government to implement the recommendations of the Technical Taskforce as an urgency.
5. The Commonwealth Government encourage the WA State Government to employ, on a temporary basis, additional resources to eliminate the backlog of mining tenement applications.
6. That the Commonwealth Government encourage the WA State Government to amend the Western Australian Mining Act to remove the veto rights of freehold land owners.
7. The effects of development on the environment be assessed on a case-by-case basis, and regulation and legislation not embody a presumption that environmental protection and minerals extraction are incompatible. In addition, the principles of multiple land use be adopted where possible.
8. The Commonwealth Government encourage the WA State Government to adopt the principle of allowing National Parks to be extended by addition of other lands with high conservation value to compensate for the temporary disturbance of another area by mining. (This principle of land swapping is an important mechanism that can provide a benefit to the Conservation Estate as well as to resource development and should be maintained).
9. Restrictions on mining activity in National parks not be applied unilaterally but be linked to the conservation value of the area and the type of reservation that is applied.
10. The Federal Government work with the WA Government to ensure that any Commonwealth Heritage legislation does not create duplication and further delays in the approvals process.
11. The Federal Government encourage the WA State Government to reject those Keating Review recommendations that will impact negatively on exploration.
12. That the Federal Government encourages the WA State Government to legislate to confine the role of the Warden's Court to the administration of the Mining Act 1978.
13. The Federal and State Governments generate and make more high quality geoscientific data available to industry to enhance exploration activity.
14. The Commonwealth encourage the WA State Government to implement the recommendations in the Fardon Report.
15. The Federal and State Governments maintain a policy of providing geoscientific data at no cost or at most, the cost of transfer.

16. The WA State Government increase funding to centres of geoscientific excellence and mining related educational facilities and courses.
17. The Federal and State Governments fulfil their social welfare and infrastructure responsibilities with Indigenous communities.
18. The Federal and State Governments take a more proactive approach to project development and facilitate partnership development between industry and Indigenous groups.
19. The Federal and State Governments consider the development of a tripartite partnership approach to project development.
20. The Federal Government reintroduces zone and living allowances that adequately compensate workers and families living in remote locations.

I. INTRODUCTION

I.1 BACKGROUND

"Western Australia enjoys a huge and varied mineral and petroleum endowment that has driven exploration and development. Since the 1960s, annual production has increased each decade by about \$5 billion. Very large areas of WA are still highly prospective for minerals and petroleum.

Mineral Production in WA will be maintained for some years by enormous deposits, and by cost-cutting making lower grade deposits viable. But the situation is not sustainable with ores being mined at \$13 billion per year. In the last decade, lower mineral discovery rates under covered ground cannot sustain present production, let alone expand it. An industry the size of that in WA requires exploration to deliver whole new classes of discoveries, so attracting more of world exploration to WA is urgent." (Fardon, R et al, Taskforce to Review the Programs and Funding of Geological Survey of Western Australia, page 1, 2000)

Exploration is fundamental to the minerals industry and the nation, identifying resources for new project developments and sustaining operations as existing resources are depleted. Unfortunately, mineral exploration is currently experiencing a substantial downturn in Australia and overseas. Since 1996-97, Australia's mineral exploration expenditure (excluding petroleum and in 2000-01 A\$) has declined by 44 per cent to \$683 million in 2000-01, the lowest level since 1978-79. The downturn is largely due to reduced spending on exploration for gold and base metals, although exploration expenditure has also declined in recent years for coal and uranium, diamonds and iron ore. Mineral exploration expenditure, seasonally adjusted, declined by a further 2 per cent in the September quarter 2001 (ABS, Mineral and Petroleum Exploration Australia December Quarter 2001, cat no. 8412.0, 2001a).

If the downturn in exploration expenditure continues, the rate of discovery of new mineral ore deposits will be reduced and mineral production and exports will decline over the longer term. This will have flow-on economic impacts as mining and mineral processing activities currently make a substantial contribution to the national, state and territory, and many regional economies in Australia.

For example, mining and mineral processing accounted for 8.6 per cent of national output in 1999-00, and 4.6 per cent of total employment and 20.9 per cent of new capital expenditure in 2000-01 (ABARE, Australian Commodity Statistics 2001, 2001). Total tax payments from the sector, excluding petroleum, were A\$4.3 billion in 2000-01 (PricewaterhouseCoopers 2001). On a balance of payments basis, Australia's exports of minerals and metals were valued at \$42 billion in 2000-01, accounting for 28 per cent of total exports of goods and services (ABARE, Australian Commodities, vol. 9, no. 2, 2002).

At a State level, over the past two years, the Chamber of Minerals and Energy of Western Australia (the Chamber) has:

- lobbied Government to develop a strategic approach to address declining exploration activity; and
- presented numerous submissions to reviews undertaken on the issue.

Throughout this period our message has been consistent - If Australia is to continue to prosper through a viable and vibrant minerals industry then action must be taken to stimulate exploration over the longer term.

1.2 TERMS OF REFERENCE

On 24 May 2002, the Minister for Industry, Tourism and Resources, the Hon Ian Macfarlane MP, referred the following inquiry to a Commonwealth Parliamentary Standing Committee.

“That the committee inquire into and report on any impediments to increasing investment in mineral and petroleum exploration in Australia, including:

1. An assessment of Australia's resource endowment and the rates at which it is being drawn down;
2. The structure of the industry and role of small companies in resource exploration in Australia;
3. Impediments to accessing capital, particularly by small companies;
4. Access to land including Native Title and Cultural Heritage issues;
5. Environmental and other approval processes, including across jurisdictions;
6. Public provision of geoscientific data;
7. Relationships with indigenous communities; and
8. Contributions to regional development.”

1.3 STRUCTURE OF THIS SUBMISSION

In responding to the objectives of the House of Representatives Inquiry, the Chamber has utilised the eight terms of reference as a framework for outlining its views on actions necessary to stimulate exploration and support an expanding minerals industry.

Given that the Chamber is a state-based organisation, this submission deals primarily with lifting exploration activity within the State of Western Australia. In making recommendations, the focus will be on ensuring that the minerals industry within this State remains vibrant and where possible, grows. Whilst our recommendations relate to the Western Australian minerals industry, many will be applicable across the whole of Australia.

In preparing this submission, the Chamber would like to acknowledge the work of Mr Don Flint of the Geological Survey of Western Australia and Mr Murray Meaton of Economic Consulting Services. Information provided in Sections Two and Nine of this submission relate directly to work undertaken by them.

2. RESOURCE ENDOWMENT

2.1 AUSTRALIA'S RESOURCE ENDOWMENT

In Australia, mining has been an important economic activity since gold was first discovered in Victoria in the 1850s. Mining and mineral processing have contributed to the pace and location of regional economic development, and provided substantial taxation revenues to finance public economic and social infrastructure and other government expenditures.

Mineral exploration expenditure is an investment in knowledge about the location, size and quality of mineral deposits. Exploration is an ongoing activity that is required for the continued discovery and extraction of mineral resources.

By international standards, Australia is relatively abundant in mineral resources (AGSO-Geoscience Australia 2001, Australia's Identified Mineral Resources 2001).

Australia is a leading nation in the production and export of several mineral commodities, as well as in exploration, mining and processing technologies (ABARE 2001a; Prime Minister's Science, Engineering and Innovation Council, Australia's Mineral Exploration, 2001).

As a consequence of historical exploration activity, Australia ranks in the top four countries in terms of economic demonstrated resources (EDR) for base metals (copper, lead and zinc), nickel, mineral sands, gold and iron ore (table 1.1). Australia is also a major world producer of these mineral resources.

Table 1.1 Economic demonstrated resources (EDR) and production for selected resources, Australia, 2000

	Australia in world EDR		Australia in world production		Australia's EDR to production ratio ^a	
	Rank no.	Share %	Rank no.	Share %	1979 to 2000 ^b no.	2000 no.
Gold	3	10	3	12	14	17
Base metals and nickel						
Copper	3	7	4	6	39	29
Lead	1	23	1	22	30	20
Zinc	1	18	2	16	32	23
Nickel	1	34	3	14	40	119
Coal and uranium ^c						
Black coal	6	6	4	7	280	166
Uranium ^d	1	29	2	28	114	68
Diamonds ^e	3	15	1	24	19	7
Mineral sands						
Ilmenite	1	29	1	23	53	91
Rutile	1	44	1	50	58	106
Zircon	1	40	1	37	42	77
Iron ore	4	10	3	16	145	80

^a EDR (end of calendar year data) as a share of production in the same calendar year.

^b Average annual data over the period.

^c Based on financial year production (for example, 2000-01 instead of 2000).

^d World EDR ranking is based on resources recoverable at less than US\$80/kg U.

^e World EDR rankings are based on industrial diamonds only, although Australia has one of the largest EDRs for gem/near gem diamonds. World production is based on natural gem and cheap gem diamonds.

na Not available.

Sources: ABARE (2001a); AGSO-Geoscience Australia (2001a).

Exploration is particularly important for resources such as gold and base metals where the level of economic demonstrated resources (EDR) relative to production is substantially below that of other major resources such as iron ore and coal (table 1.1). As a result, in 2000-01, over three quarters of Australia's mineral exploration expenditure (excluding petroleum) was focused on gold (54 per cent) and base metals and nickel (24 per cent).

In aggregate, the 12 resources included in table 1.1 accounted for around 98 per cent of mineral exploration expenditure (excluding petroleum) in 2000-01. For seven of

these resources, the level of economic demonstrated resources relative to production was lower in 2000 compared with the average over the period 1979 to 2000.

2.2 WESTERN AUSTRALIA'S RESOURCE ENDOWMENT

2.2.1 Caveats on Information Presented

The Western Australian Department of Mineral and Petroleum Resources (DMPR) has maintained a spatial database of mines and mineral deposits in Western Australia (Minedex) since 1996. The following notes are based on a submission for this inquiry prepared by DMPR. The Chamber wishes to acknowledge the support of DMPR in preparing this work.

A summary of resource estimates for the major minerals mined in Western Australia demonstrates the pattern of change in total discovered resources (Table I). Measured and indicated resources of iron ore have declined while inferred resources have risen, gold resources have generally risen while bauxite resources have declined. More detailed notes on the major minerals follow.

Table I: Estimates of major mineral resources in Western Australia

Commodity	Units	1996	1997	1998	1999	2000	2001
Measured and indicated resources							
Iron ore (high grade)	Mt	21 960	22 539	22 407	22 282	22 316	14 892
Gold	t	3 009	3 376	3 496	3 752	3 999	4 551
Bauxite ore	Mt	3 359	3 386	3 387	3 387	3 194	3 194
Mineral sands	Mt	128.9	163.4	208.7	208.7	215	216
Nickel	Mt	10.73	13.41	16.77	20.23	17.44	17.90
Diamonds (industrial + gem)	Mct	140	177	534	534	646	614
Inferred resources							
Iron ore (high grade)	Mt	10 466	10 382	10 525	10 587	12 796	16 288
Gold	t	1 295	1 549	1 750	1 807	1 930	1 834
Bauxite ore	Mt	1 326	1 314	1 314	1 314	1 314	1 314
Mineral sands	Mt	52	53	73	73	68	70
Nickel	Mt	6.96	10.58	10.15	11.68	15.94	14.96
Diamond (industrial + gem)	Mct	86	59	59	59	34	33

NOTE: Data sourced from the MINEDEX database. Information nominally as at 31 December for year shown, but data extracted from the MINEDEX database on 30 June in following year
 For iron ore and bauxite, it is the quantity of resources that is shown. Only high-grade iron ore resources are included. High-grade iron ore is based on iron content only, but cut-off grade (55% or 60% Fe) depends on mineralization type
 For heavy minerals, the total of all heavy minerals is shown
 For all other commodities, it is the contained element/mineral in the resources that is shown:

t	Tonnes
Mt	Million tonnes
Mct	Million carats

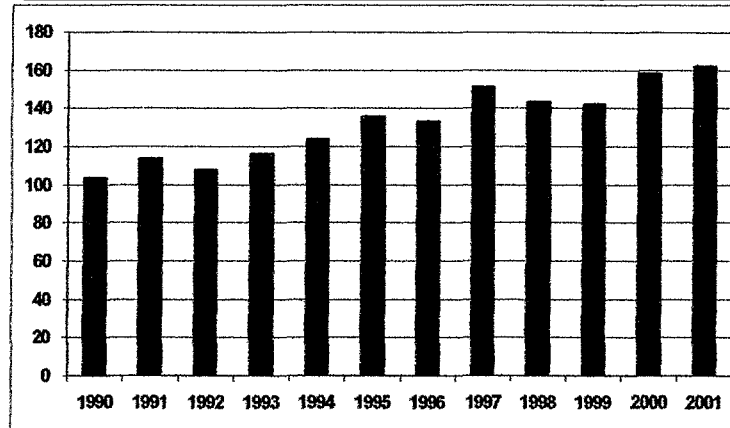
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¹ This database is the best available source of information on reserves in the State. However, the information has a number of limitations that need to be carefully noted. In particular, the estimation of individual mine life or depletion rates depends on the accuracy of the mine resource figures. The depletion rates assume that measured and indicated resources will all be converted into reserves, that all resources are based on commercial cut-off grades and that old resource estimates remain valid. These assumptions are unlikely to be completely accurate and hence forecasts based on the database need to be interpreted cautiously.

2.2.2 Iron ore

Iron ore production has grown steadily in Western Australia as the major producers have expanded to meet increasing world competition (Figure 1). The downward trend in real prices has driven productivity improvements and higher production levels. New lower-grade mines are being opened up as the resource base of rich mines developed in the 1960's declines.

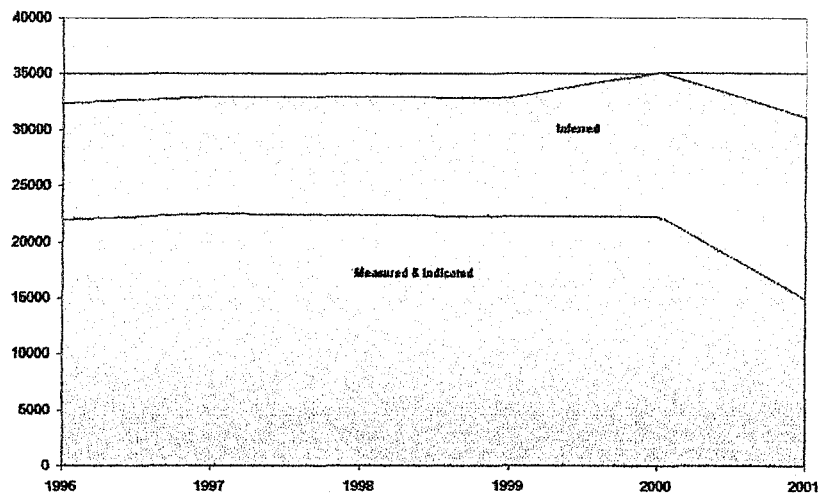
Figure 1: Iron Ore Production in Western Australia (Million tonnes ore)



Resource estimates for 'high grade' iron ore in Western Australia were downgraded dramatically in 2000 – 01, falling by over 33% (Figure 2). Inferred resources increased but the overall level fell. The factors that combined to produce this result include:

- more widespread use of the current industry standard Joint Ore Reserves Committee (JORC) code for reporting;
- removal of resources that do not conform to the JORC code definitions; and
- a careful revision of the Minedex database and elimination of some double counting.

**Figure 2: Iron Ore Resource Estimate for Western Australia
(Million tonnes of ore)**

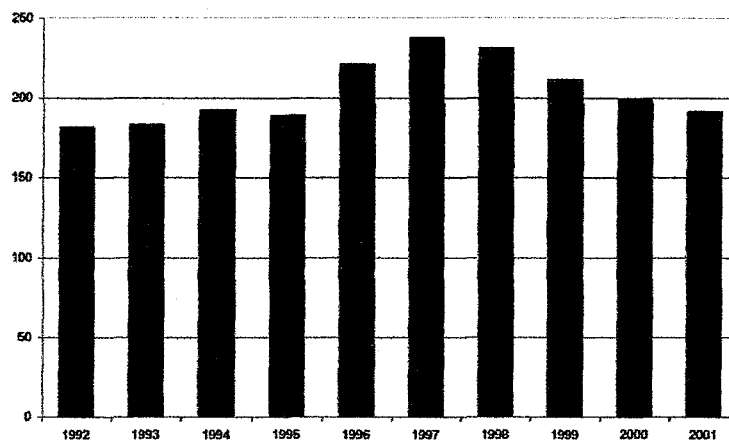


The final result is a more realistic assessment of the current high-grade iron ore resources in Western Australia, but it does not distinguish between ore types and hence quality. Without much more detailed work, the 'high grade' resources are only an approximation failing to reflect resources that may be uneconomic in the medium to long term. The implied industry 'life' at over 185 years does not recognise in particular that much of the resource is in fact of a quality (re phosphorus levels in particular) not saleable under current grade specifications.

2.2.3 Gold

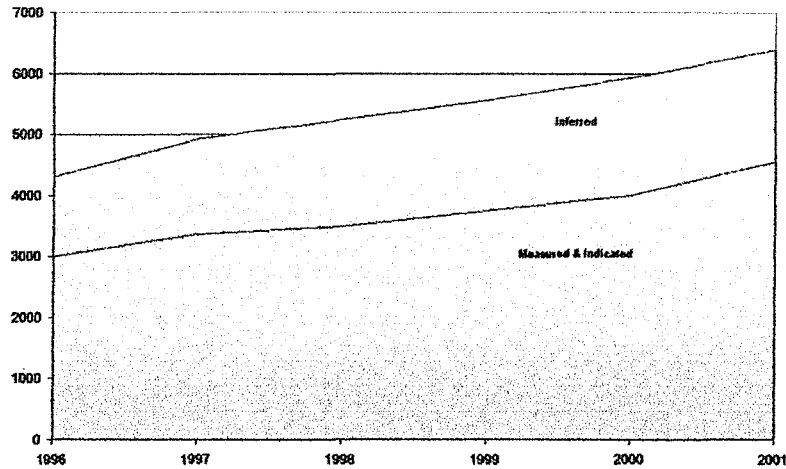
During the last decade, Western Australia has produced between 182 tonnes and 238 tonnes of gold, with production peaking in 1997 (Figure 3). Since then, gold production has started a slow decline falling to 192 tonnes in 2001. This is a reduction of almost 20% since the peak of 1997.

Figure 3: Gold Production in Western Australia (tonnes)



The State's inventory of measured, indicated and inferred gold resources generally increased during the 1990s (Figure 4).

Figure 4: Gold Resources in Western Australia (tonnes)

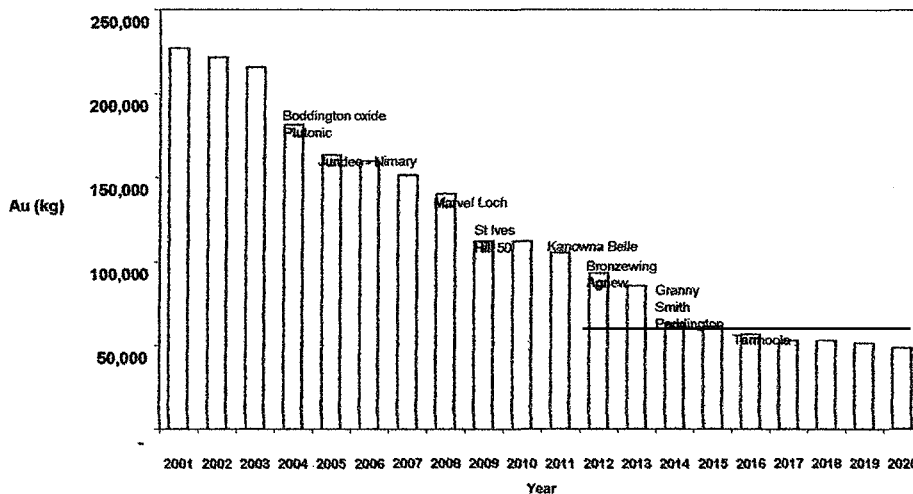


Demonstrating the sensitivity of the estimates, the 14% jump in measured and indicated resources in 2001 was primarily due to one resource upgrade – that by Newcrest for the Telfer project. Measured and indicated resources at this mine are now estimated to contain a total of about 680 tonnes of gold, with a further 126 tonnes of contained gold within inferred resources. Without this discovery, resource levels would have shown a small decrease in 2001 despite the inclusion of revisions to the reserves associated with some new gold mining company floats.

A small drop in inferred resources in 2001 would have been far greater without the large boost from a revised resource estimate for Telfer.

Prediction of future gold production based on mine life estimates demonstrates that unless major new mines are commissioned, gold production will decline quite rapidly (Figure 5). There are discoveries that could change this trend such as Telfer Deeps and the Boddington–Wandoo Expansion, but they remain to be committed.

Figure 5: Forecast Gold Mine Production based on Current Mines
Forecast gold production, Western Australia
(compiled in 2001)

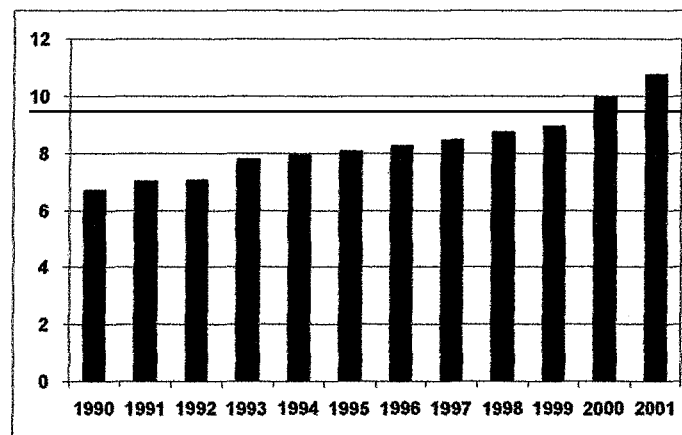


However, in the event that there is a sustained fall in the price of Gold and an increase in the value of the Australian Dollar, the decline in production is likely to be more rapid.

2.2.4 Bauxite

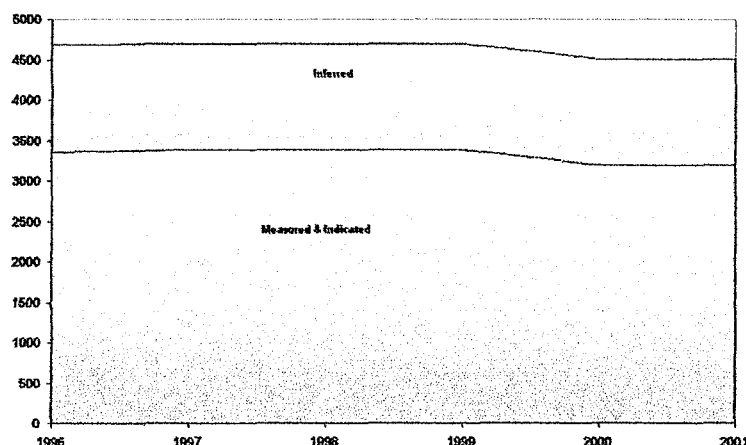
Production of alumina from bauxite has risen steadily with expansion in the capacity of major refineries (Figure 6). The value of production has fluctuated more widely with movements in exchange rates and world prices. The alumina/bauxite sector is export based and the two Western Australian producers have maintained continuous improvements in productivity to remain competitive on world markets. Production increases have been part of this process.

Figure 6: Alumina Production in Western Australia (million tonnes)



Western Australia's resources of bauxite have remained relatively static since at least 1993 (Figure 7). The industry is relatively mature and over the last few years exploration expenditure for bauxite has been minimal.

Figure 7: Bauxite resources in Western Australia (million tonnes)



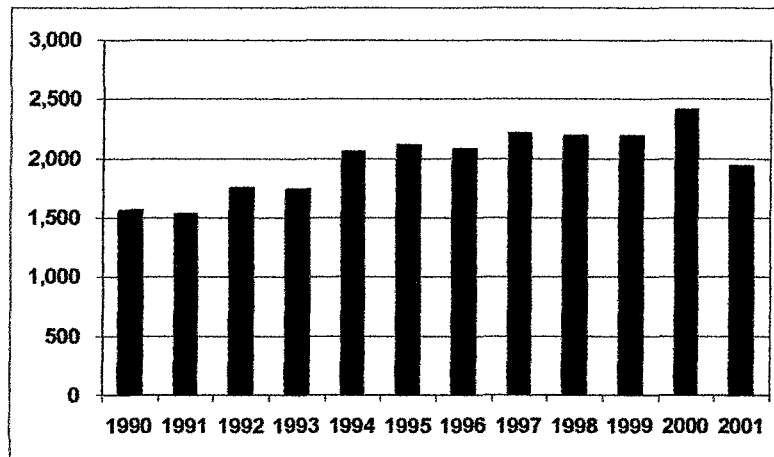
The proven and probable reserves of bauxite are adequate for about 15 years of industry life. Inferred resources of bauxite are substantial but none of these are currently in the measured category. The alumina producers have plans for production well in excess of this duration and must be confident of the resource base. In addition

to the resources in the south west of the State, there are large resources in the remote Kimberly, Mitchell Plateau area.

2.2.5 Heavy Mineral Sands

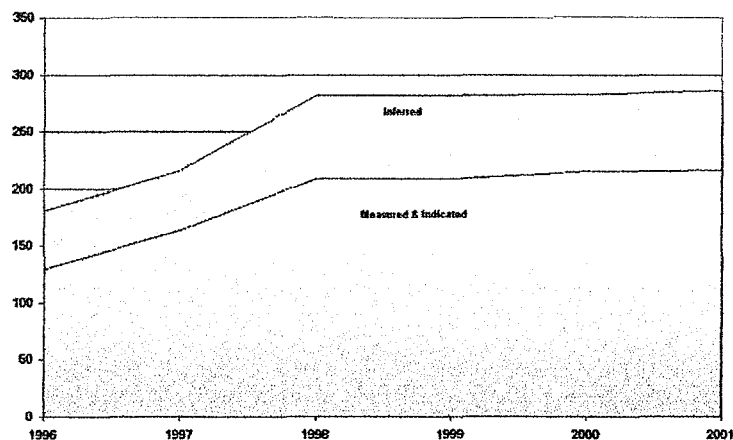
The production of heavy mineral sands has fluctuated with price changes but generally increased over the last ten years (Figure 8). The most substantial fall occurred in 2001.

Figure 8: Production of Heavy Mineral Sands in Western Australia



The information in the Minedex database suggests that known State resources of heavy mineral sands have remained relatively static since 1998 following a jump at that time (Figure 9). The mineral sands sector has been operating since the early 1960's and is relatively mature. Hence the increase in 1998 is more likely to relate to data entry and definitions rather than any real change in the resource base. Over the last few years exploration has declined as the focus has shifted away from Western Australia to the Murray Basin (South Australia, Victoria and New South Wales).

Figure 9: Heavy Mineral Sands Resources in Western Australia



The proven and probable reserves of ilmenite and zircon in Western Australia are adequate for 15-20 years of industry life. Resources of both minerals are sufficient to

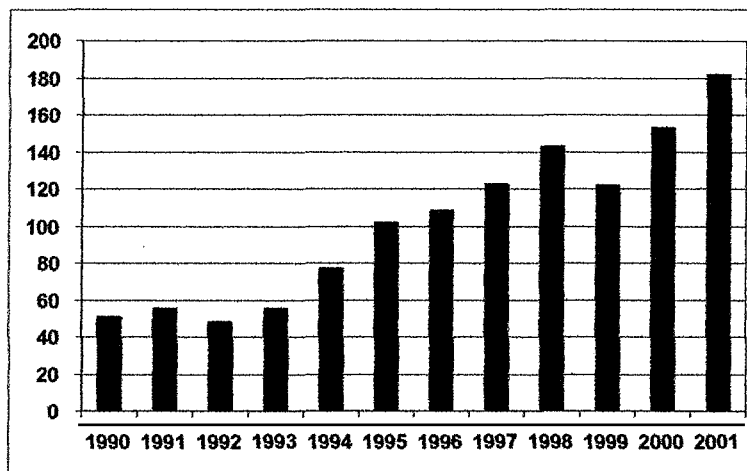
support the industry in the longer term. Access to the resources is the biggest challenge facing the industry with much of the resource located in agricultural areas close to rural settlements.

2.2.6 Nickel

Nickel metal production has increased dramatically since 1990 (Figure 10).

During 2001, Western Australia produced 182,000 tonnes of nickel metal in refined metal and concentrate nickel matt form. Around 80% (145,000 tonnes) was recovered from the traditional nickel sulphide deposits with the remaining 20% from the more recently developed nickel laterite deposits.

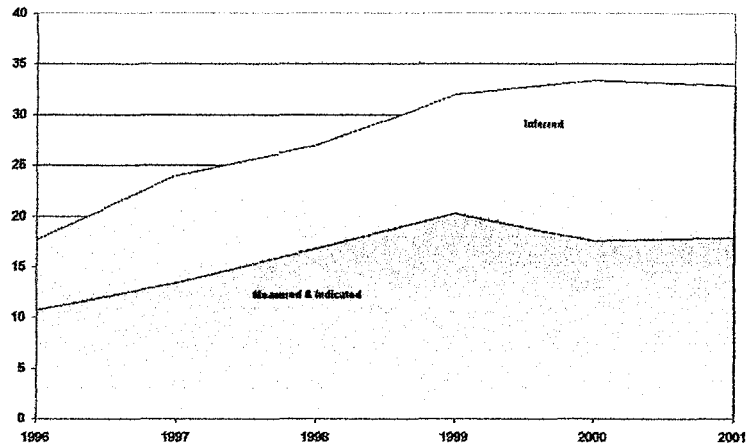
Figure 10: Nickel production in Western Australia (thousands of tonnes)



During the 1990s, strong metal demand and high prices drove a boom in nickel exploration that was extremely successful in converting earlier discovered laterite deposits into recoverable resources. (However, there remains a doubt about the quantity of these reserves that can be economically recovered.)

Measured and indicated resources climbed rapidly to a peak of over 20 million tonnes of contained metal in 1999 before a slump in world prices forced a re-evaluation of resources and a subsequent 15% drop in resources for 2000 (Figure 11). This impact flowed through to an increase, however, in nickel contained within inferred resources. The increase of inferred resources during 2000 was also boosted by a new estimate of two million tonnes of contained nickel in the Wingellina lateritic nickel prospect, Musgrave Complex. Total resources are now over 33 million tonnes of contained nickel.

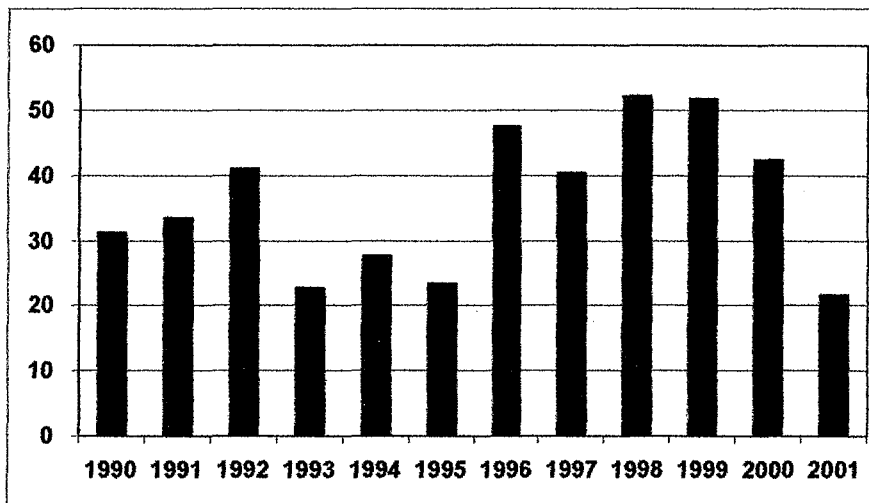
The increase in resource levels is almost entirely due to the nickel laterite deposits with the nickel sulphide resources remaining relatively static. A substantial proportion of the total resource lies in projects not currently economic to work and/or within nickel laterite deposits, thus the industry's 'mine life' is difficult to evaluate.

Figure 11: Nickel Resources in Western Australia

Current reserves at lateritic nickel projects are sufficient for an industry 'mine life' of about 12 years at current production rates although there are concerns that the resources include low - grade ore that will need improved technology or higher prices to be commercial. A similar situation exists for the nickel sulphide resources. The resource estimates are impressive but are dominated by low-grade ore at the Mt Keith project. Mine life based on these resources may be optimistic.

2.2.7 Diamond

During the last ten years, annual production from the Argyle project has ranged from 21 million carats to over 53 million carats, averaging about 37 million carats a year (Figure 12).

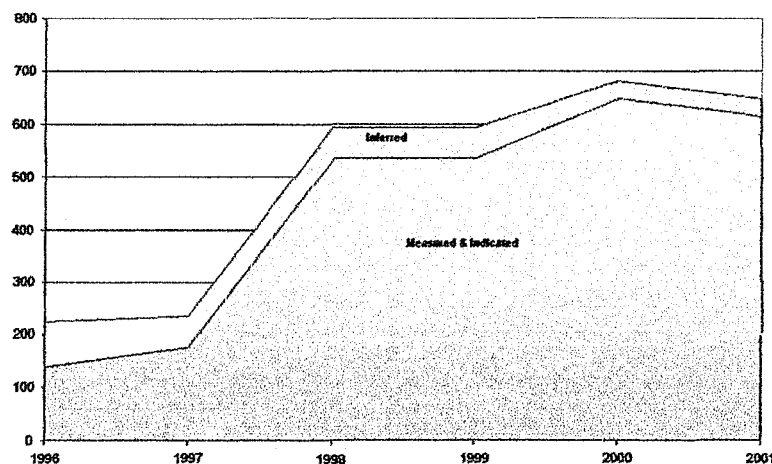
Figure 12: Diamond Production in Western Australia (million carats)

Western Australia's known diamond resources increased substantially during the late 1990s after about eight years of slight growth (Figure 13). The resources are dominated by the Argyle deposits, with more than 97% of all resource estimates.

Mining commenced at Ellendale during 2002, but the resources and reserves are very small by comparison.

The future of diamond mining in Western Australia depends largely on the Argyle deposits. Exploration effort has proven up substantial resources at Argyle but the grade is generally low and the ore expensive to access. The company has completed a number of feasibility studies looking at the deepening and extension of the existing pit and of underground mining below the pit floor. No decision has yet been made on this extension.

Figure 13: Diamond Resources in Western Australia (million carats)



Current proven and probable reserves at Argyle, which total about 160 Mcts of contained diamond, are sufficient for only four to five years at the current average production rate. Assuming all currently known measured and indicated resources at Argyle become available for mining and are converted to reserves, the present rate of production may support an additional 13 years of mine life.

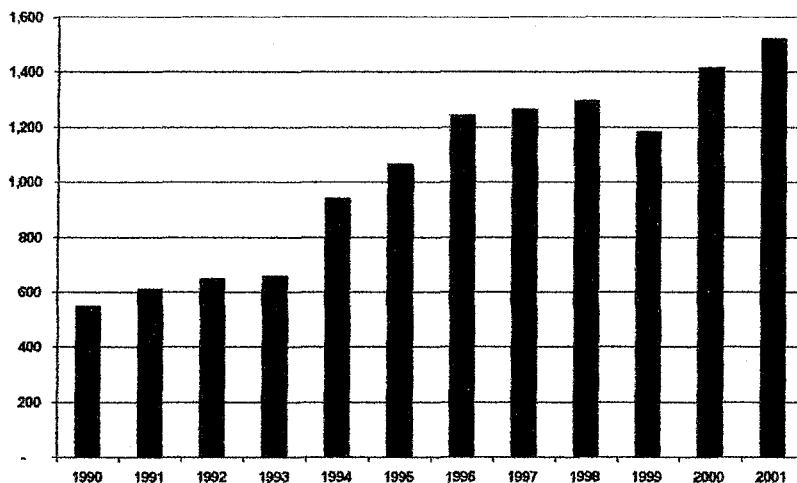
The Western Australian diamond industry, worth \$400–700 million annually, currently hinges on one mine unless other economic deposits can be found quickly.

2.2.8 Petroleum

Western Australia's petroleum industry underwent rapid growth during the 1990s. The value of petroleum production quadrupled, from \$2.2 billion in 1990 to over \$10 billion in 2001. In energy equivalent terms, production expanded in the ten years to 2001 from approximately 450 petajoules to 1,500 petajoules (Figure 14). Energy production is dominated by liquified natural gas (LNG) with virtually all production exported to Japan.

Exploration continues at high levels fuelled by the success rate in offshore waters and high oil prices. Success rates have improved with greater understanding of the geology of the area and improved exploration techniques. If the current discovery rate can be maintained or even improved, the Department of Mineral and Petroleum Resources estimates that there could be 50 new commercial discoveries made by 2007.

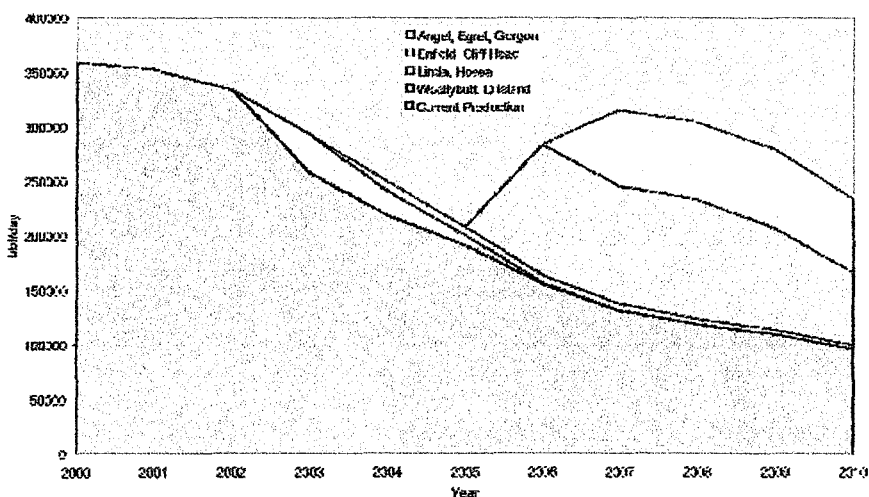
Figure 14: Hydrocarbon energy production in Western Australia (Petajoules)



While exploration offshore has continued to increase, there has been a long-term decline in onshore exploration. However, there are signs of a turnaround in onshore exploration assisted by significant discoveries in the second half of 2000.

Despite the exploration successes, known project commitments will not sustain production levels, with these forecast to decline over the next seven years (Figure 15).

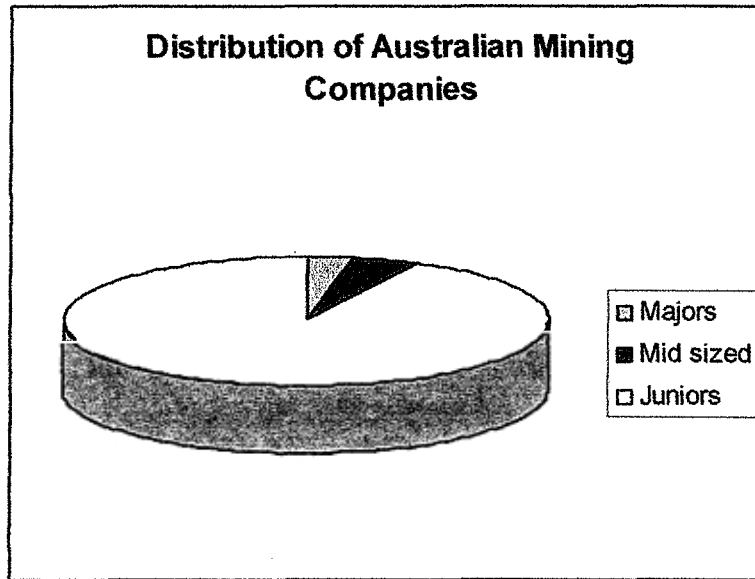
Figure 15: Forecast Petroleum Production (Btu per day)



3. STRUCTURE OF THE INDUSTRY

The industry in Australia is conventionally divided into three sectors: majors (each with capitalisation of \$1 billion+), mid sized (\$200-\$1,000 million each) and juniors (less than \$200 million each).

According to ABARE, in 2000 these were distributed by total value in the following way:



While the junior sector dominates numerically, it should be noted that, in terms of capitalisation, resources are much more concentrated towards the major and mid sized companies. The situation is further complicated in that a substantial number of juniors (over a hundred companies) are actually effectively owned by major or mid sized companies.

This is significant because companies' exploration strategies and the way they finance them differ significantly across the spectrum.

Juniors typically focus primarily on exploration, using external financing via equity markets, and particularly the speculative end of such markets. In the event of exploration success, the juniors may sell the discovery, enter into a joint venture for development or develop it themselves.

This is in contrast to mid-sized and major companies which fund exploration to the extent they undertake it, typically through internal financing.

More recently, there has been a trend for larger companies to forgo their own exploration and instead rely on acquiring discoveries by or companies in the junior sector for access to new discoveries. A related trend is the farming out of large companies' tenements to juniors and then buying back in when successes arise.

The reasons behind this change include the need for certainty as to future supply and the significant levels of risk involved in exploration, and possibly greater exploration efficiencies by smaller companies. It has been suggested that they may be better suited to the decisions required and subject to greater urgency and discipline because of equity financing.

Evidence of the importance of juniors in the exploration process is attested to by the fact that they have been responsible for 2/3 of exploration success in gold since the 1960s and 1/2 of that in nickel and base metals. This is despite spending a relatively small amount of total exploration expenditure. In 1999-00, the junior sector spent a total of \$113 million on exploration compared with \$676 million for all companies.

4. IMPEDIMENTS TO ACCESSING CAPITAL

Exploration is an expensive and high risk activity. How it is funded is a significant issue.

As noted in the previous section, large and mid sized companies typically fund their exploration from internal resources. There is little evidence of any great difficulty in obtaining capital in this sector, though expenditure does fluctuate from year to year.

However, the picture is different for the junior sector. These companies typically rely on external funding from equity markets and usually the higher risk end of these markets. There are several issues which have made such funding more difficult to access.

- Equity market preferences - Exploration funding is often competing for funds at the higher risk end of the markets and against such sectors as biotechnology and dotcoms. There is some evidence that market realities (higher returns from the alternatives) and sentiment (an inaccurate perception that the sector is 'old economy') have combined to make these markets less well disposed towards exploration.
- Full exploration deductibility - Currently, exploration is fully and immediately deductible in the year of expenditure. Thus for a company with sufficient offsetting income, all costs can immediately be deducted. The same is not true for companies without sufficient income, which is very often the case for junior companies exposed only to exploration activities. While the deductions can be carried forward, this is only in nominal terms and the value of the deduction declines with inflation. One suggested means of resolving this issue is the introduction of a flow through shares scheme similar to that currently operating in Canada (see Section 4.1 for an overview of the Canadian Scheme). Under this proposal, the deduction would be transferred through to the shareholders, allowing them to deduct it from their income. This would cause them to value exploration appropriately and therefore deliver the correct exploration incentives to the companies.
- Accounting for externalities. Exploration is not only of value to the company undertaking it. By generating enhanced geological information it also makes further exploration by other companies easier. It is argued that this benefit is not recognised by the exploring company (as they do not capture the benefit) and therefore some additional tax credit should be provided to ensure exploration occurs at optimal levels. Similar reasoning underlies the 125% R&D tax credit.

Recommendation:

1. The Commonwealth Government introduce a flow through share scheme to encourage greater exploration by maximising the benefit of the taxation deduction.
2. The Commonwealth Government introduce 125% deductibility for 'greenfields exploration'.

4.1 ASSESSMENT OF THE CANADIAN FLOW THROUGH SHARE SCHEME

A Canadian flow through share scheme has been operational for many years and has been refined to maximise its effectiveness. It provides an excellent model for a similar regime in Australia. Canada has a similar legal system to Australia and a mining and petroleum industry that forms an important part of the regional economy.

The Canadian scheme provides a system of registration to ensure that only eligible companies can offer flow-through shares. Eligible exploration expenditure is carefully defined to ensure that the investments are spent on exploration activity and not simply used to sponsor increased company administration or other ventures. The legislation requires agreements to be entered into between investors and the company that protect the rights of both parties. The Canadian scheme does not provide any limitation on corporate size under the scheme but it is clearly more attractive to small companies without any offsetting taxation liabilities and hence most funding has flowed to junior exploration corporations.

Between 1983 and 1991, around \$C3 billion appears to have been invested in flow through shares. The amount rose from \$C45 million in 1983 to a peak of \$C1,100 million in 1987. The investment level declined quickly after 1987 to \$C65 million in 1991, the last year of the published government evaluation. The average of \$C330 million per annum is skewed by the exceptional levels for 1985 to 1987 period which represented an all time high in share market enthusiasm before the September 1987 crash. Excluding these years, the average would be less than \$C100 million. The level of investment will clearly depend on the outlook for commodity prices with investment decisions primarily a function of perceived exploration success and project profitability.

For mining companies, flow through benefits averaged 60% of investment while for petroleum companies it was only 6%. This reflects the greater role played by small exploration companies in the mining sector as well as the price cycles of the commodities over the evaluation period and the high level of government incentives already available to the petroleum industry.

The Government evaluation of the scheme estimated that mining exploration expenditure for a range of companies sampled had increased by around 50% between 1988 and 1991. Junior explorers, as expected, dominated the use of the scheme.

The Canadian scheme saw over 90% of the share investments passed back to investors as legitimate, deductible exploration expenditure. Very little was thus used to fund general company expenditure or administration effort. The scheme has therefore been judged effective in its aim of increased exploration effort on the ground.

5. ACCESS TO LAND

The primary area where Government action is likely to result in the stimulation of exploration relates to land access. For exploring companies, the ability to gain access to land in a timely fashion is hampered by a number of factors, including:

- native title and Aboriginal heritage;
- restrictions in relation to freehold land and national parks and nature reserves; and
- delays in obtaining the necessary Government approvals, including delays due to the backlog associated with native title processes.

These issues have been the subject of a range of acts of parliament and legislative reforms but these have not reduced the complexity, cost or timeliness of getting onto the ground. On the contrary, exploring companies are faced with a myriad of requirements that significantly impede their ability to commence work and in some cases may stop activity indefinitely.

While some of the access issues are a State Government responsibility, the Commonwealth can assist the process by assisting State Government's in their interpretation and implementation of the Native Title Act requirements and by eliminating areas of duplication and working with the State Government to align any new legislation that is enacted.

5.1 NATIVE TITLE AND ABORIGINAL HERITAGE ISSUES

The issue of native title and the associate, yet separate Aboriginal heritage requirement, consume considerable resources as companies seek to gain access to particular areas. Exploration companies may be faced with a range of native title/Aboriginal heritage requirements including gaining agreement to access land to mark out (Warden's Court Decision [2001] WAMW 29), gaining initial access, undertaking heritage survey(s) to map areas unavailable for exploration purposes (sites of significance), and/or developing an agreement to undertake exploration within a particular native title claimant group area. These are all costly exercises requiring significant time and resources.

The implications for exploration are enormous. The processes involved in native title and heritage add substantial delays to a project or program and in some cases can stop the assessment of an area or a project altogether.

The current State Government has a different approach to Aboriginal Affairs than its predecessor. The current emphasis is more on agreement making rather than litigation. As a consequence, the State Government has implemented two processes aimed at reforming the State's approach to native title; the "Review of the Native Title Claim Process in Western Australia" (Wand Review) and the "Technical Taskforce on Mineral Tenement and Land Title Applications" (Technical Taskforce).

In commenting on the recommendations of the Wand Review, the Chamber supported the State Government's approach of agreement making but expressed deep concerns at the specific recommendations being made. (A copy of the terms of reference and executive summary of the Wand Review together with the Chamber's submission are attached [Attachment I]). This will provide greater understanding of the focus, recommendations of the review and the Chamber's concerns at the direction being taken and the potential consequences of that direction. In particular, the Wand Review report in the Chamber's view:

- attempts to lower the bar in relation to testing connection with land;
- recommends withholding information from other stakeholder groups thereby removing their ability to assess connection of claimant groups to the area being determined;
- gives consideration to mediating unregistered claims;
- has significant cost implications; and
- recommends the implementation of State Land Rights through the use of grants of inalienable freehold title and ownership and management of conservation land and seas.

Given the substantial deficiencies in the report, the Chamber recommended that the area be reconsidered and a more inclusive process be adopted. The Chamber wants

to see an inclusive system that promotes agreement rather than litigation. If the Wand Review recommendations are implemented, this will not be possible and will result in significant costs to the State.

Recommendation:

3. The Commonwealth Government encourage the WA State Government to reject the Wand Review recommendations (as per the attached Chamber submission) and establish a regime that will assist all stakeholders in this vital area.

5.1.1 Technical Taskforce

Through its Technical Taskforce on Mineral Tenements and Land Title Applications, the State Government has attempted to overcome the logjam in the processing of mining lease applications. Currently there is a backlog of 11,600 in the system. The Technical Taskforce considered a range of options aimed at freeing up the process.

While the Chamber supported the broad thrust of the Technical Taskforce's terms of reference, it had concerns in a number of key areas of the recommendations. In particular, the Chamber strongly opposed:

- the recommendation that a heritage protection agreement become a precondition for the conversion of mining lease applications to exploration or prospecting applications and for processing applications through the expedited native title procedure. The Chamber opposes this recommendation due to the provision of a right of veto to claimants, a failure to recognise work previously undertaken on heritage and the significant additional costs imposed on the industry to comply with this precondition; and
- the potential retention of application fees that the State Government holds whilst applications are being processed.

Attached, for consideration of the inquiry is a copy of the Chamber's submission identifying the issues of concern it has with the findings and recommendations of the Technical Taskforce, together with the terms of reference of the Technical Taskforce and the executive summary from the final report. [Attachment 2]

The Technical Taskforce Report has been with the State Government for approximately nine months. Despite having the report for this length of time, the recommendations in the report have largely not been acted upon. For example, despite Cabinet approval of a sub-committee to deal with heritage issues associated with the tenement approvals process, work has only recently commenced on this aspect of the recommendations. This has delayed any implementation of the Technical Taskforce recommendations and has resulted in a continuation of the backlog. This does not assist the exploration industry and hampers any increased exploration activity.

Recommendations:

4. The Commonwealth Government encourage the WA State Government to urgently implement the recommendations of the Technical Taskforce.
5. The Commonwealth Government encourage the WA State Government to employ, on a temporary basis, additional resources to eliminate the backlog of mining tenement applications.

5.2 FREEHOLD TITLE AND NATURE RESERVES

5.2.1 Freehold Title

The South West region and a number of other areas throughout WA have significant amounts of freehold land (6.8% of total land mass of Western Australia). Access for exploring these areas is limited due to the veto right that is given to land owners under Section 29 of the Mining Act 1978. Should a land owner refuse permission to explore on their land, there is no opportunity for an exploration company to challenge this decision. In very prospective areas (such as the South West where for example, prospective mineral sands deposits are affected) this is ensuring that significant areas are left unexplored.

The Chamber believes that the State Government should reconsider this issue, and at a minimum, bring current legislation into line with laws in other Australian states.

Recommendations:

6. That the Commonwealth Government encourages the WA State Government to amend the Western Australian Mining Act to remove the veto rights of freehold land owners.

5.2.2 Exploration and Mining in National Parks and Nature Reserves

The mining in National Parks issue arose from an election policy of the current Government to ban mining and exploration within National Parks and Nature Reserves. A move to fulfil this commitment would be of serious concern for the mining industry and would have wide ramifications for the Western Australian and Australian economies. Mining in the South West is currently worth \$4.7 billion per annum, directly employs 8,000 people and pays royalties to Government in the order of \$95 million each year. Exclusion of all minerals activity from proposed new National Parks and nature reserves would have a significant impact on regional employment and returns to the State from this area in particular.

The State has acknowledged that there is a hierarchy of areas of conservation value. This is reflected in the different classifications of nature reserves and the different levels of authority required to authorise mineral exploration and production according to the class of Nature Reserve. The minerals and energy industry recognises the importance of protecting areas of high conservation value. In many cases, however, not all areas contained within the boundaries of National Parks and Nature Reserves have such high value. At the same time, there are areas of high conservation significance that do not form part of the Conservation Estate.

The unilateral exclusion of mining from Reserves and National Parks is also inconsistent with the principles of Sustainability that the Government has stated will underpin decision making processes. The principles of sustainability dictate that the economic, social and environmental aspects will be considered equally and in balance when making major policy decisions. In the case of the national parks, no thought has been given to the economic and social implications of sterilising large areas of highly prospective land in the South-West.

Recommendations:

7. The effects of development on the environment be assessed on a case-by-case basis, and regulation and legislation not embody a presumption that environmental protection and minerals extraction are incompatible. In addition, the principles of multiple land use should be adopted where possible.

8. The Commonwealth Government encourage the WA State Government to adopt the principle of allowing National Parks to be extended by addition of other lands with high conservation value to compensate for the temporary disturbance of another area by mining. (This principle of land swapping is an important mechanism that can provide a benefit to the Conservation Estate as well as to resource development and should be maintained).

9. Restrictions on mining activity in National parks not be applied unilaterally but be linked to the conservation value of the area and the type of reservation that is applied.

6. APPROVALS PROCESSES

6.1 GOVERNMENT APPROVALS

The approvals process is a series of overlapping State and Federal Government regulatory requirements that impose significant delays on companies seeking to explore and/or develop mineral deposits. Whilst many of these processes are seen as essential by the Chamber and its members, there are a number that can simply be seen as a duplication of existing requirements. For example, the Commonwealth EPBC Act and State environment legislation.

6.1.1 Keating Review

The State Government has recognised the complexity of the approvals process and its impact on exploration and mining activity and implemented a Review of the Project Development Approvals System (Keating Review). A copy of the terms of reference and the executive summary from the report are attached. [Attachment 3]

This has been a worthwhile exercise and if implemented should produce some positive results. However, there remain a number of concerns with the Keating Review final report including:

- the recommendations on native title and Aboriginal heritage. The Chamber remains opposed to the Keating recommendations in this area;
- the removal of significant recommendations from the interim report, including:
 - “Where a project has been through a formal assessment under Part IV of the Environmental Protection (EP) Act there should not be a requirement for the subsequent Works Approval and Licence under Part V of the EP Act to be subject to further comment by agencies or the public”; and
 - recommendations 22-24 dealing with the need for the maintenance of comprehensive records, audits and development of a major project information system.
- advocating the use of retention licences for minerals exploration and mining. If the move to a retention licence does not attract native title considerations (and the Chamber has doubts about this) then this may be a solution. The Chamber remains committed to the view that exploration licences should be able to be changed to mining leases without undue hindrance; and
- recommendation 52 dealing with hypothecation of funds for objecting groups. The Chamber remains opposed to this recommendation as it will add an additional cost to the process of gaining approval for exploration.

A copy of the Chamber’s response to the Keating Review report is attached. [Attachment 4]

Recommendations:

10. The Federal Government work with the WA Government to ensure that any Commonwealth Heritage legislation does not create duplication and further delays in the approvals process.

11. The Federal Government encourage the WA State Government to reject those Keating Review recommendations (noted in Attachment 4) that will impact negatively on exploration.

6.1.2 Warden's Court

The Warden's Court is a judicial body that has been established under the Western Australian Mines Act 1978, to hear and determine all such actions, suits and other proceedings recognisable by any court of civil jurisdiction as arise in respect of mining tenements. The Warden's Court will also hear and determine all rights claimed in, under or in relation to any mining tenement or purported mining tenement, or relating to any matter in respect of which jurisdiction is under any provision of the Mining Act 1978 conferred upon either the Warden's Court or the Warden.

Of recent times, the Warden has commenced hearing matters that previously fell outside the operations of the Warden's Court. In particular, the hearing of public interest objections on environmental grounds is becoming increasingly common. As such, this Court has not got the technical resources to assess related matters/impacts. This has added to the complexity of the tenement approvals process and increased the costs associated with the granting of tenure.

As part of the Keating review, the role of the Warden's Court was considered. The review found that the Warden's Court's role had been significantly increased as it sought to deal with environmental and other issues that have been brought before it. The Keating review recommended that the Warden's Court function be returned back to its original intent - the administration of the provisions of the Mining Act. The Chamber supports this recommendation.

Recommendation:

12. That the Federal Government encourages the WA State Government to legislate to confine the role of the Warden's Court to the administration of the Mining Act 1978.

7. GEOSCIENCE INFORMATION**7.1 PROVISION OF GEOSCIENTIFIC INFORMATION**

The capacity to deliver high quality geoscientific data, highly skilled/trained workers and internationally recognised research facilities and institutions remains a key driver in attracting minerals companies to explore and operate in WA. The Commonwealth and State Government need to be aware of this fact, and as a consequence, must devote adequate resources to the maintenance and expansion of these areas. In particular:

- the State Government needs to enhance the geoscientific data available through adequate funding of the Geological Survey of WA;
- the Federal Government needs to fund the expansion of onshore work undertaken by Geoscience Australia;
- there needs to be an expansion of research facilities devoted to exploration geoscience; and

- the maintenance of funding of the training institutions producing graduate and skilled technicians for industry.

Brazil is an example of a country where the benefits that can flow from a release of a significant quantity of new state of the art geoscientific data can be demonstrated. The level of exploration funds flowing into Brazil increased three fold from 2000 to 2001. In addition, the Geological Survey of Brazil anticipates a further 40% increase over the 2001 level this year. (Mining Journal, London, 31 May 2002)

In May 2000, the Court Government established a taskforce to review and advise on the programs and funding for the Geological Survey of Western Australia. That review, known as the Fardon Review, outlined a range of initiatives that, if implemented, would provide a significant boost to the exploration industry whilst promoting Western Australia as the premier jurisdiction in which to undertake exploration. (Attachment 5 details the terms of reference for the Fardon Review together with the executive summary from the final report.) The Chamber endorses many of the recommendations made by the Fardon Review and recommends that they be implemented as a priority. (The Chamber's submission to the review is at Attachment 6.)

Given the significant reduction in the level of exploration, the Commonwealth and State Governments need to implement those recommendations that would provide stimulation to the exploration industry.

With respect to Geoscience Australia, we note that the Commonwealth has redirected its funding to offshore areas to the detriment of onshore exploration activity. "AGSO [Geoscience Australia] will not be involved in onshore geological mapping, but will expand its geochronology and targeted mapping...It is considered unjustified for the Commonwealth, a major beneficiary of the resources industries, to be contributing less than previously." (Fardon Review, 2000)

Recommendations:

13. The Federal and State Governments generate and make more high quality geoscientific data available to industry to encourage exploration activity.

14. The Commonwealth encourage the WA State Government to implement the recommendations in the Fardon Report.

15. The Federal and State Governments maintain a policy of providing geoscientific data at no cost or at most, the cost of transfer.

7.2 RESEARCH AND EDUCATION

Research on significant issues relating to minerals processing, mining and exploration remain a priority for industry, as does the development of a highly educated and skilled workforce. Without the provision of new knowledge and expertise on various mining related matters, and the availability of highly skilled staff to implement new technology, the minerals industry will find it difficult to maintain its competitive advantage and position as a world's 'best practice' industry.

Given that research and education are key Government responsibilities, the State Government must ensure that funds are committed to these areas to ensure that the State remains at the forefront of the clever country.

Recommendation:

16. The WA State Government increase funding to centres of geoscientific excellence and mining related educational facilities and courses.

8. RELATIONSHIPS WITH ABORIGINAL COMMUNITIES

The development of a relationship with an Indigenous community largely rests with the company or companies involved in a project. Without a good working relationship they may face problems with gaining or retaining a 'licence to operate'. For this reason, companies invest considerable resources into the development of good working relationships with surrounding Aboriginal groups and communities.

While relationship building is the province of the companies involved, there is a role for the Commonwealth and State Governments. That role is to support all groups as they seek to develop agreements and partnerships. At present, the Commonwealth and State Governments play a largely passive role in this area. They undertake little work in the development of agreements underpinning development unless that project is of considerable importance to the nation or State (eg Burrup Peninsula). At other times, they take no active part in the process, despite the fact that the facilitation of the agreement will reduce potential delays and provide quicker returns to the State and the various stakeholder groups.

What is required is for Governments to fulfil their responsibilities by acting in the best interests of all groups involved. They must take a more active role in the facilitation of projects and must meet their responsibilities with respect to Aboriginal communities. Many of the issues that are raised during negotiation of agreements with companies rest with the Governments of Australia. Education, health and infrastructure development are the preserve of Governments, yet, they often figure prominently in negotiation of project agreements. Governments must accept responsibility for these areas, thus reducing the impost on companies.

The Commonwealth and State Governments can help the minerals industry in the development of good relationships by assisting in the identification of leaders within particular Indigenous communities. Additionally, the negotiation of agreements with people other than the traditional owners and leaders of the communities has resulted in the diversion of considerable amounts of money away from communities into the hands of individuals and groups. The assistance of the government in the identification of the leaders of communities would assist the process of relationship building and would eliminate or minimise the opportunities for individuals and groups to divert funds away from the communities.

Finally, there is a trend overseas for tripartite partnerships (Government, Indigenous Community and Mining Company) to be used in project development. (Examples of these partnerships can be found on the Business Partners for Development website (www.bpd-naturalresources.org)). In these partnerships, the Government takes an active role and works with the other stakeholders to develop the project. As this is a growing trend, and Indigenous communities are monitoring what is happening in the rest of the world, the Commonwealth and State Governments must take a proactive role in the development of such practices.

Recommendations:

17. The Federal and State Governments fulfil their social welfare and infrastructure responsibilities with Indigenous communities.

18. The Federal and State Governments take a more proactive approach to project development and facilitate partnership development between industry and Indigenous groups.

19. The Federal and State Governments consider the development of a tripartite partnership approach to project development

9. CONTRIBUTIONS TO REGIONAL DEVELOPMENT

9.1 OVERVIEW

Western Australia comprises approximately one third of Australia's land surface. Given its size, it is no surprise that Western Australia contains a diversity of geological forms, a range of soil and climatic conditions, extensive natural forests and lengthy coastlines. This creates the potential for substantial natural resources. However, the extremely dry climate and persistent high temperatures over most of the State limits the potential for agricultural development and hence substantial population centres. A very small proportion of the land is suited to agriculture with most only able to support low-density animal grazing.

Western Australia is remote from world markets and has a small population. This limits the extent to which a manufacturing industry can develop and it also places some constraint on a service sector. Given the natural and cultural constraints, it is not surprising that most of the State depends on minerals and petroleum or the ocean for natural resources. Water and cheap energy is a limiting resource for mineral processing in most of this area, leaving mining and petroleum extraction as the only industries capable of providing a significant economic base outside the capital city and arable south west corner of the State.

Fortunately, the size of the State and its geological diversity means that it is well endowed with a range of minerals. It is no surprise therefore that development of these natural resources over the past 100 or more years has been the main driving force behind the growth in the State economy.

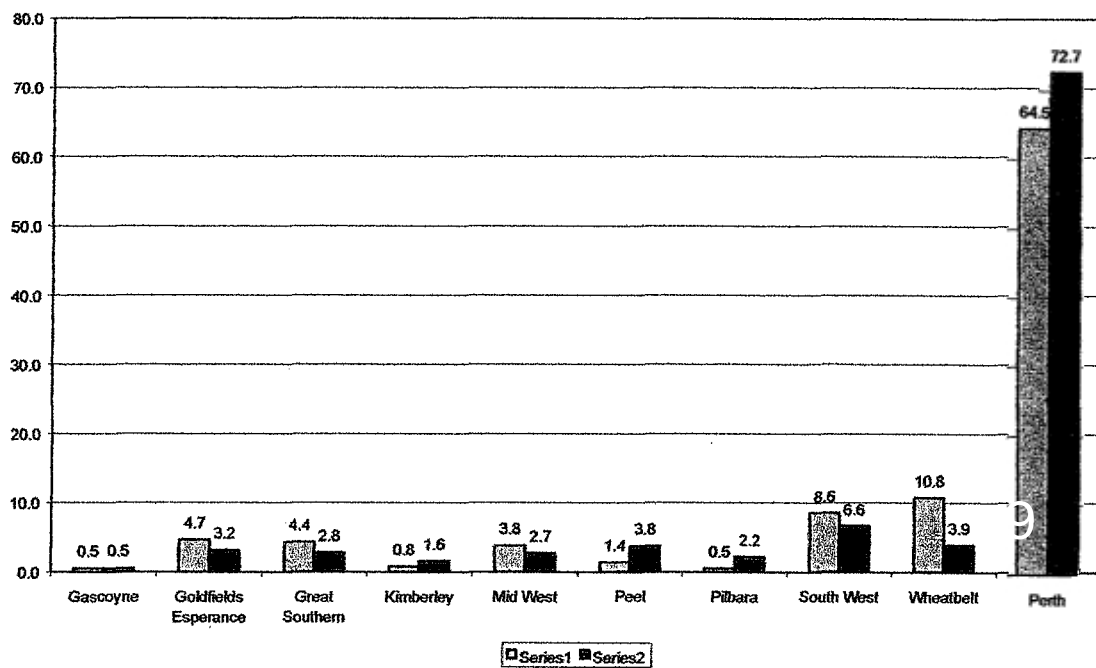
9.2 HISTORICAL DEVELOPMENT

Western Australia's economy has developed in a series of 'booms' followed by extended periods of more gradual development. The first boom, establishing the State as a viable colony, began with the gold rushes of the 1890's. A lengthy period of sustained but slow growth followed for nearly 50 years after the decline in the gold industry early in the twentieth century. A surge in growth followed with peace after World War II driven by agricultural land development. A more sustained and vibrant growth period commenced in the early 1960's with a second mining boom and the substantial investment in the discovery and production of iron ore, nickel, heavy mineral sands and bauxite. Gold mining, which languished under an international price fixing regime for three decades, began a major revival in the 1980's after price controls were lifted. Subsequently, the discovery of vast natural gas and some oil resources in the late 1970's saw a start on massive petroleum developments.

At the commencement of the second 'boom' period in the early 1960's, Western Australia's population was just over 700,000. Settlement was concentrated in the south west corner reflecting the agricultural emphasis of the economy, job opportunities and the attractive living environment. Over the past 40 years, the population has grown substantially, reaching an estimated 1.9 million in 2000. This represents an average growth rate of 2.6 % per annum or a total increase of 165% over the 38-year period.

While all areas have experienced a population increase since the 1960's, the density of settlement changed significantly. The metropolitan area lifted its already high proportion even further to 72% of the total (Figure 1). Overflow and expansion of the metropolitan area saw the Peel region just south of the City grow while the remote Kimberley and Pilbara regions also increased their shares of the State population. The Gascoyne region retained a very small static share but the Goldfields/Esperance, Mid West, South West, and Wheatbelt all declined in relative importance. The most dramatic falls were in the Wheatbelt (down 63%) with the Great Southern and Goldfields/Esperance also losing more than 30% of the population share they held.

9.2.1.11. Figure 1: Population Distribution Change, 1961, 1999



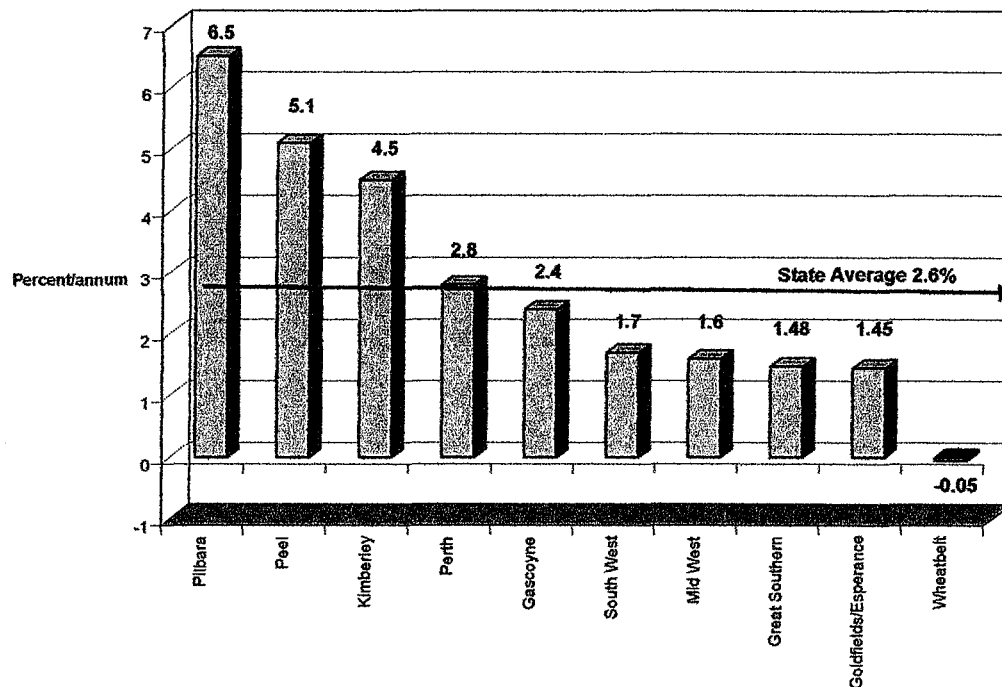
Series 1 – 1961 Series 2 – 1999

Source: ABS

The population growth in the Pilbara was associated with mineral and petroleum development in the form of iron ore, oil and gas and salt. These industries have expanded dramatically since the early 1960's. Prior to the 1960's, the Pilbara had a very small population and economy based on the pastoral industry with some fishing.

Growth in the Kimberley has been focused on Broome and Kununurra. Expansion in tourism, irrigated agriculture, mining and aquaculture/pearling appear to have fuelled the Kimberley growth with possibly more comprehensive enumeration of the indigenous Aboriginal population increasing census numbers.

Figure 2: Population Change, 1960-1998



Source: ABS

The Ministry of Planning has produced growth forecasts for the regions that support a continuation of these trends. Growth is forecast to continue at higher rates than the average in the metropolitan area, Peel, South West and Kimberley regions. This will see a further concentration of the State population in the coastal and more climatically benign south west corner of the State to the detriment of some of the more remote regions. Agricultural areas appear likely to continue to lose population with the exception of areas close to large urban centres where lifestyle properties will be built.

9.3 RECENT DEVELOPMENT TRENDS

For more than a decade to 2000, the economy in Western Australia has grown faster than in any other Australian State, fuelled predominantly by strong growth in the export of mineral and petroleum resources and farm produce. The State's economic growth over the decade to 2000 averaged 4.4% a year compared with the national average of 2.1%, while the population grew at an average annual rate of 3.3% against a national average of 1.9%.

Despite the strong economic growth the population of some of the State's richest resource producing areas actually fell and many smaller communities in the mining, pastoral and agricultural areas have been battling to survive as economically and socially viable entities.

Western Australia's economic prosperity relies heavily on export based industries as reflected in its trade balance which at over \$20 billion compares with a national surplus of less than \$5 billion. The domestic economy is small in comparison with the eastern seaboard cities and the isolation from these markets making world markets the only viable option.

To remain profitable in the highly competitive world markets, the primary producing sectors have had to continually chase productivity improvements. Labour inputs have been reduced and service companies have increased in size and scope and frequently

relocated to the Perth metropolitan area. Even the members of the workforce in the mining industry are now, increasingly, drawn from Perth and work in the regions as long distance commuters under the fly-in/fly-out system.

There is limited scope to reverse the shift in population to the coastal and urban areas. This shift is common across Australia. A major study recently completed for the Reserve Bank of Australia found that:

“Regions experiencing employment growth tended to be located along Australia’s eastern seaboard, tended to be close to capital cities, or were in remote mining locations. On the other hand, regions experiencing falling employment were mainly rural regions in Australia’s interior.”²

9.4 THE STATE OF THE REGIONS

A review of Western Australian regions reveals big differences in population, economic structure and future outlook. The metropolitan area with virtually two thirds of the measured economic output dominates the economy (Table 1). The Goldfields/Esperance and South West contribute 7% each to the total with all other regions providing less than 5% of output. The economy of the State is heavily biased towards the south west corner with the metropolitan area providing over 65% of output, the South West 6.5% and Peel 3% for a combined total of 75%.

While the more remote regions only provide a small proportion of economic output, they generate most of the export earnings and hence have an average output value in excess of the State average. This reflects the emphasis on mineral and petroleum resource development with high output levels per employee (Table 1). In comparison, the agricultural areas have lower output levels while coastal areas closer to Perth have levels below the State average. Notes on each region and the outlook follow this table.

Table 2: Gross Economic Output, 1999-2000

Region	GDP (\$million)	Proportion (%)	GDP/capita (\$/person)
Gascoyne	454	0.60	46,580
Goldfields – Esperance	4,740	6.85	80,433
Great Southern	1,453	2.10	27,876
Kimberley	1,155	1.68	37,828
Mid West	2,596	3.75	51,413
Peel	2,084	3.01	28,765
Pilbara	3,873	5.60	95,796
South West	4,138	5.98	32,609
Wheatbelt	2,686	3.88	37,000
Regional Australia	23,180	33.52	45,078
Perth	45,973	66.48	33,566
Western Australia	69,153	100.00	36,708

² Jeremy Lawson and Jacqueline Dwyer, Labor Markets in Adjustment in Regional Australia, Research Discussion Paper 2002-04 June 2002 Economic Group, Reserve Bank of Australia.

9.4.1 Gascoyne

The Gascoyne region covers approximately 5% of the State land mass but has the smallest population with less than 10,000 people. It is the smallest regional economy with an agricultural and pastoral focus. There is limited mining activity with salt and some construction materials.

Offshore oil and gas developments are planned but there has been local resistance to servicing these from the closest port at Exmouth and they may be serviced from outside the region. There is some growth potential in horticulture, tourism and aquaculture but the potential is limited and the area appears likely to remain the smallest region in the economy.

9.4.2 Goldfields/Esperance

The Goldfields/Esperance Region covers 30% of the State land area and contributes nearly 7% of the economic output. The economy is dominated by the mining sector with gold and nickel production being major industries. Agriculture in the south of the region around Esperance is important and tourism is growing.

Kalgoorlie and Esperance are the main population centres. Kalgoorlie was established in the gold rushes over 110 years ago and its economic health will continue to be heavily dependent on mining and mining services. Esperance has a growing role as a regional port with exports of iron ore, nickel and cereal grains. It has a more diverse economy in common with most coastal locations.

The Goldfields Gas Transmission pipeline has provided some potential for the processing of minerals but the delivered energy cost is high and not very favourable to world competitive processes. Its continuation to Esperance may provide some scope for further processing of agricultural products, but again, isolation from markets will challenge viability.

Future prosperity in this region will continue to be strongly affected by the mining sector with inland areas particularly dependent.

9.4.3 Great Southern

With less than 2% of the State land area, the Great Southern region provides about the same proportion of economic output. The population is primarily engaged in agricultural pursuits with plantation forestry the fastest growing activity in recent years.

Small rural towns have generally declined in size with a population drift to the coastal communities of Albany and Denmark. The decline in size of the wool industry has seen the traditional farming areas around Kojonup and Katanning decline in importance with cereal production expanding throughout the region. The more marginal agricultural areas on the eastern side of the region have seen significant rural adjustment with farm amalgamation and population decline.

There is negligible mining activity in the region, partly because most land is held as freehold title farms with power of veto over mining activity by the landowners. As a result, exploration investment has been low.

Albany and Denmark will continue to grow as service centres with increasing importance as tourism, retirement, and lifestyle destinations. Plantation forestry will become a more dominant industry in the region while agriculture will struggle to hold its share of economic output. Plantation timber based industry should expand along with tourism, aquaculture, viticulture and some food processing.

9.4.4 Kimberley

The large Kimberley region (17% of the State) has a sparse population and makes a small contribution to the State economy. Its traditional strength in pastoral industry enterprises has been handicapped by closure of all meatworks but the export of live cattle has grown and provided a more positive outlook for the pastoral industry. Mining has become the largest sector based essentially around two projects – the Argyle diamond mine and Western Metals zinc and lead project. Horticulture at the Ord River has become a success story, along with tourism to Broome and the rugged parts of the Kimberley.

Government and community services are a significant employment sector given the remote location of this area in the nation. Broome expansion is partly attributable to this service sector and to the growth in tourism. Derby is struggling as a regional centre with facilities tending to locate in Broome while Kununurra growth awaits expansion in the Ord River Irrigation area. Broome is the only deepwater port in the region although Derby and Wyndham do export some minerals.

While the region has a number of economic sectors, the size of the overall economy is heavily dependent on two mines. The largest mine, Argyle, has a limited existence although it continues to find new diamond reserves.

The short to medium growth appears likely to come from tourism and government services with some potential for more pearling and other aquaculture enterprises. Continued population growth will thus depend mainly on the lifestyle attractions of Broome. Substantial expansion in the economy of the region in the short to medium term appears unlikely except in the case of tourism.

Any large-scale, longer-term growth prospects will depend on the discovery and development of mineral or offshore petroleum resources.

9.4.5 Mid West

The Mid West region occupies about 19% of the State land mass and contributes around 4% of economic output. Most of this output is from the agriculture sector close to the coast and from mining in inland areas.

Agriculture has faced a cost price squeeze for at least three decades and the rationalisation to lift productivity has seen rural populations' decline. Diversification has seen the development of horticulture and floriculture enterprises. Fishing is part of the region's development heritage and while still a key industry, is not a major part of the economy.

Gold, mineral sands, base metals, oil and natural gas are major contributors to the economy. Gold and petroleum production have been on the wane while mineral sands mining has an uncertain longer term future. Base metal mining appears to be the only mineral commodity currently mined with an assured longer-term future.

Geraldton is the key population centre and acts as a service centre and port for grain and minerals. Other smaller agricultural towns face pressure to survive while coastal settlements are expanding as fishing and tourism centres.

The Mid West region has potential iron ore projects with downstream processing to iron and steel providing a possibility for major investment and employment opportunities.

The necessity to raise productivity in mining and agriculture has seen some population shift to the coast with Geraldton a dominant centre. This city has a strong service sector presence with robust fishing and tourism sectors.

Most future population growth is expected to be in coastal areas. The only substantial growth potential in inland areas lies with possible large scale mining developments.

9.4.6 Peel

The Peel Region just south of Perth has been one of the fastest growing population centres in the State. Its economy has grown on the back of alumina/bauxite mining and expansion in the metropolitan area. Peel provides an attractive lifestyle for retired people and low cost housing entrants. It is also a very popular holiday destination thus having a strong tourism sector.

Mining is very important to the economy with alumina/bauxite and mineral sands mining and the potential for further gold production. However, these sectors face strong environmental pressures that limit the capacity for significant expansion.

Growth in the region is likely to be strong and correspond to expansion in the Perth urban population. Completion of the Kwinana Freeway and urban railway to Mandurah will facilitate Mandurah's development as a bedroom suburb for Perth and the Kwinana industrial strip. The mining sectors are relatively mature and the pressures on further development will limit expansion of this sector. As a consequence, population growth will continue in coastal areas with less growth in inland districts.

9.4.7 Pilbara

The Pilbara is a vast region with a very small population and a narrow but expanding economic base. It occupies 20% of the State land area and provides 5% of the economic output. The economy is almost entirely dependent on resource production with oil and gas recovery and processing, iron ore mining and processing, and salt production the dominant enterprises.

The area owes its development to the pastoral, mining and to a lesser extent, the fishing sectors. The largest towns have a mining foundation including Port Hedland, Karratha, Wickham, Tom Price, Paraburdoo, Newman and Onslow.

The necessity to increase mining productivity in the face of the long term declining terms of trade has meant a reduction in mine site employment and a shift in population emphasis from inland areas to coastal and port locations and, with the adoption of fly in/fly out to Perth. A measure of the population decline is the fact that there have been up to 600 company houses vacant in the inland towns Newman, Mt Tom Price, Paraburdoo and Pannawonica.

Resource processing at Port Hedland, the Burrup Peninsula and Onslow provides a promising outlook for the region. Major investment will be involved with large construction workforces and substantial operating workforces. The expansion of the North West Shelf joint venture project on the Burrup Peninsula is providing a major lift in the economy of the region. Petroleum and mineral processing based on the abundant offshore natural gas resources offers real growth potential for the region. To offset the location disadvantages in terms of isolation and distance to markets, the projects will need to be world scale. They will represent significant additions to the region, State and national economies.

While there is scope for growth in tourism and provision of local services, the growth in these sectors are linked to the health of the mining sector, which they rely on for infrastructure and employment attraction. Without secondary processing of petroleum and iron ore resources, the growth outlook for the region would be very limited.

9.4.8 South West

The South West Region covers an area from Harvey south of Perth to Walpole on the south coast. It includes less than 1% of the State area but has 6% of the population and over 6% of the value of economic output. It has the most diverse economy of any rural or remote region in the State.

Substantial industries include mining, agriculture, horticulture, forestry, tourism, and services. The region includes the rapidly growing Busselton to Augusta strip with viticulture, tourism and lifestyle residency substantial driving forces. There are more than 20 towns and one city in the region.

Mineral sands and coal mining are relatively static sectors but alumina/bauxite is continuing to expand. Mining in the region faces considerable other land use pressures as well as opposition from those with an environmental commitment. While important in the region, the diversity of the economy means that mining development is less central to development.

There is potential for increased mineral processing in the region and capacity for expansion in plantation based timber enterprises. The long-term connection of a freeway road access from Perth to Bunbury will enhance the prospects for the South West.

9.4.9 Wheatbelt

Occupying only 6% of the State land area, this region's agricultural sector enables it to contribute 4% of economic output. Agriculture accounts for over half of the value of output and has faced a cost price squeeze for a few decades. The productivity push has seen agriculture diversify with a decline in sheep enterprises, growth in cereal and lupin production and an increase in horticulture enterprises.

The population of the region has fallen with agricultural rationalisation and many small inland centres have effectively closed. Population growth in the region will occur but this will be focused in the areas adjoining the metropolitan area and coastal areas north of Perth. The region has many rural towns but no major population centre. One town, Southern Cross, is significantly dependent on the mining sector.

Gold mining in the east of the region may decline but iron ore mining at Koolyanobbing is expanding. Mineral sands mining around Cataby will continue but is unlikely to expand significantly. Tourism offers some scope for growth while manufacturing based on services to agriculture may also grow.

Continued decline in rural populations will place some limitations on growth. Population growth will primarily come from metropolitan area spill – over and coastal settlements for fishing and lifestyle reasons.

9.4.10 Perth

Perth provides the major population and economic centre of Western Australia with over 70% of the population and 66% of the economic output. In a very broad sense, Perth is the economic heart of the State. While it depends on primary industry in rural and remote areas for much of its investment and employment generation, the Perth economy is increasingly moving to a tertiary service structure. The growing emphasis on services such as finance, communications, insurance, business services, hospitality and entertainment makes it less dependant on primary production than it was in the past. International and interstate migration will continue to play a key role in population growth.

The growth of Perth as a service centre for the State and possibly even a business location for services to South East Asia means the population is forecast to continue

to grow at significant rates. This implies an increasing share of the State population if the 'spill over' into the Peel and Wheatbelt Regions is included in the metropolitan population.

9.5 REGIONAL SUMMARY

The competitive pressures on mineral, petroleum and agricultural producers and hence on the companies that service them have changed the cultural and economic landscape in Western Australia. Populations have drifted to the metropolitan and coastal areas with a significant reduction in the role played by rural, pastoral and remote settlements. The pressures on mining and petroleum development have shifted workforces to fly in – fly out arrangements with a reduction in the population of mining towns.

Perhaps the most striking feature of the development of the regions is the importance of the mining sector. From the information supplied, it can be shown that for many regions, the mining sector has been the:

- principle driver of growth;
- a substantial contributor to the development of regional infrastructure;
- the principle driver of employment;
- the principle driver of Indigenous employment; and
- the principle trainer of Indigenous people.

Without the stimulus of a vibrant mining sector, Governments at all levels will be required to intervene on a more consistent basis. Funding will need to be diverted to regional services to maintain existing levels and will put pressure on the tax base and demand for funds increases. In fact, without the input of the mining industry, Governments will largely be the only providers of services and will therefore need to increase its contributions to the regions to maintain their viability and health.

For most of the landmass in Western Australia, mining and petroleum developments are the only industries with the capacity to make a significant change in the fortunes of regional and remote locations. The economies of these regions will not collapse. However, any step change in the future of the economies of the Kimberley, Pilbara, Gascoyne, and Goldfields – Esperance regions can only come from the resource sectors.

The resources sector can also play a supporting role in the Mid West, Wheatbelt and South West regions.

9.6 THE ROLE OF GOVERNMENT

Australian governments are actively involved in shaping the economy through both fiscal measures and monetary management goals. This management includes programs to support regional development.

Support for regional development has always been a political imperative in Australia. It has been justified on the basis that there is almost certainly economic value in the vast land areas as well as a moral perspective that we have an obligation to utilise the land we occupy. There are also considerations of national security.

While agriculture and tourism offer the potential for incremental growth in rural and regional Western Australia, only mineral and petroleum developments offer any scope for delivery of step changes in economic output and regional prosperity. In many ways, tourism and local service sectors rely on large resource projects to develop the regional infrastructure on which they rely.

If the Federal and State Governments are serious about facilitating the development of areas outside the south west corner of the State, the most promising sectors are the mineral and petroleum industries. Support for resource discovery and growth provides the most cost-effective method for delivering substantial regional growth in Western Australia.

In particular, the Commonwealth and State Governments should recognise the importance of encouraging mineral and petroleum exploration as the first step in the development chain. Governments can assist with the provision of adequate funding for the acquisition of basic geological data and to ensure that all impediments to land access for exploration are minimised.

For those regions that are losing population as a consequence of competitive pressures to reduce labour costs, reversing the trend can only be achieved by taxation or other financial incentives to encourage people to stay.

Unless there are incentives to maintain and expand the resource sectors, the drift of people out of the inland areas will force the withdrawal or reduction of both government and private sector services reinforcing the population shift.

Government is limited in what it can do to reverse this population movement.

It can set some guidelines for the delivery of services to remote areas which set lower market expectations than those which apply for similar services in areas such as the South West.

In addition, it can look again at a package of taxation benefits for people in economically deprived areas (the Wheatbelt, the Pilbara, the northern goldfields and the Kimberley, specifically for Aboriginal education and training).

The introduction of a carefully researched package of zone or living allowances for people who choose to live in remote areas might be the medicine required to stabilise populations in these areas now.

With environmental and other factors stacked against economic and population growth in some regions, it is clear that a level playing field in economic policy won't provide the regions with the same economic advantages as the city. Tilting the playing field, by supporting the resources sector and those that work in it may be the only way to reverse this situation.

Recommendations:

20. The Federal Government reintroduce zone and living allowances that adequately compensate workers and families living in remote locations.

Included with this submission were the following attachments which have been taken as Exhibits 17 to 24.

Attachment 1a. Wand, P and Athanasiou, C. September 2001. **Review of the Native Title Claim Process in Western Australia, Report to the Government of Western Australia.** 24p. (Exhibit 17)

Attachment 1b. The Chamber of Minerals and Energy of Western Australia Inc. **[Comments on] Wand Review Final Report.** Unpublished, multiple pages. (Exhibit 18)

Attachment 2a. Government of Western Australia. Technical Taskforce on Mineral Tenements and Land Title Applications. November 2001. **Final Report.** 36p. (Exhibit 19)

Attachment 2b. The Chamber of Minerals and Energy of Western Australia Inc. February 2002. **[Comments on] Technical Taskforce Final Report.** Unpublished. Unpages. (Exhibit 20)

Attachment 3. Government of Western Australia. Independent Review Committee. April 2002. **Review of the Project Development Approvals System.** pp1-8 and Appendix 2. (Exhibit 21)

Attachment 4. The Chamber of Minerals and Energy of Western Australia Inc. **Review of the Project Development Approvals System.** Unpublished. 4p. (Exhibit 22)

Attachment 5. Confidential Exhibit 23

Attachment 6. The Chamber of Minerals and Energy of Western Australia Inc. September 2000. **Securing the Future of the mineral industry in Western Australia: A submission to the Taskforce to Review the Programs and Funding of the Geological Survey of Western Australia on A Recommendation for an Exploration Initiative, 'Discovery WA' for the Geological Survey of Western Australia.** Multiple pages. (Exhibit 24)