

ATTACHMENT III

ISSUES PAPER

JUNE 1999

Value-Adding (Minerals) - Queensland

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Introduction

This Paper has been prepared to assist with consultation on issues impacting on value adding to minerals in Queensland. Recent research has identified numerous issues, barriers and opportunities facing development of processing and manufacturing industries downstream from mineral exploration and mining activities in this State. This document aims to highlight those which have emerged as important issues, and their listing below is by no means in order of merit or importance. It is also acknowledged that this list does not necessarily include all issues seen as crucial to either progressing or impeding value-adding initiatives in Queensland or Australia.

During consultation, views on the following issues will be sought, as well as other factors considered important to value adding to minerals in Queensland.

Definition of Value Adding

For the purposes of this study, value adding to minerals includes processing of minerals and manufacturing from the products of processing. Both processing and manufacturing can be separated into several stages. Firstly, processing involves: purification of the mineral through beneficiation, usually undertaken at the mine site to separate the mineral from extraneous material to produce an ore concentrate, further separation into individual mineral components, transformation of that mineral chemically and/or physically to new or altered compounds, and, where applicable, reduction to the element. Reduction to metals involves smelting, electrowinning or hydrometallurgy. Manufacturing includes stages of prefabrication, fabrication, and elaborate transformation, using the products of minerals processing.

There are very few instances of all three stages being undertaken in Queensland. Examples include the transition of:

- bauxite to alumina to aluminium metal to extruded window frames;
- mineral sands to zircon to ceramics; and
- copper concentrates to metal to cast copper products.

The availability of mineral resources and natural gas for energy and as a chemical feed stock provides opportunity for expansion of the minerals processing and related value-adding industries in Queensland, particularly around the key development nodes of Gladstone, Townsville and Mount Isa.

Placement in the world

The mineral processing industry in Queensland is well placed to progress into the future. It is internationally competitive, highly export oriented and outward looking and significantly is close to south east Asian markets, which will become of increasing importance with their recovery from the recent downturn.

Queensland can accrue significant long-term benefits with Asia's economies predicted to return to increasing growth. This will increase their consequent demand for metals over the next two decades. Allied with changing patterns of metal usage and materials consumption,

this factor will accelerate the introduction of advanced technologies. More emphasis on light metals, composites and ceramics will require the development of new processing facilities and represents new manufacturing opportunities.

Such potential developments will require further attention to the provision of energy and other infrastructure facilities.

Resources

The industry in Queensland has access to world class and world scale mineral resources, in particular the Carpentaria-Mount Isa Minerals Province is one of the most prospective mineralised regions in the world, particularly for base metals and silver.

Infrastructure

The State has a well-balanced infrastructure mix, particularly in development nodes such as Gladstone and Townsville, with availability of gas, electricity, integrated transport and well developed water resource bases. Potentially, northwest Queensland could be poised to become the hub of a vast mining, minerals treatment and chemicals processing area centred on Mount Isa and Cloncurry.

However, remote areas, including northwest Queensland, do not have available high quality or inexpensive infrastructure at this stage, so that development activities and the requirements necessary for technologically intensive development still remain a challenge.

There has been some concern that ports, coastal shipping and rail, despite improvements in some sectors, are still below international standards. The high cost of transporting raw materials and products within Australia often adds excessive burdens to promising resource based opportunities.

Education, Research and Training

Technically advanced companies are based in Queensland. There is a skilled and educated workforce, with expertise in metallurgical, construction, chemical and process engineering. Technology infrastructure and research and development resources are world class with the Queensland Government adopting a strategy to ensure that existing R&D activities are retained and enhanced. For example, a proposed Australian Light Metals Research Centre within the Brisbane Technology Park will complement existing CRC's and private sector research laboratories.

Greenhouse

International business rules have changed as a result of the UN sponsored Kyoto and Buenos Aires agreements on climate change. Emission reduction targets, possible carbon taxes, the National Greenhouse Challenge and the rise of green provenance as a consumer demand are forcing changes on business.

International agreements on greenhouse gas production have introduced a level of instability into the corporate world. This is particularly evident in the energy, resources and manufacturing sectors. Energy intensive industries such as smelting and refining may be at risk if Governments introduce carbon taxes or other measures to restrict greenhouse gas emissions.

Queensland can capitalise on the instability created by Greenhouse by exploring and marketing solutions to the new problem.

Market Access

Tariff issues are still of concern for Australian export industries. Many countries employ a policy of escalating tariffs levied on the basis of the degree of transformation of basic materials. This effectively restricts the export of elaborately transformed products from Australia, and may inhibit export-based manufacturing opportunities in Queensland.

Non-tariff barriers are also well documented as an impediment to export success. Maximising local value-adding opportunities will most likely depend on continued negotiations on access to markets in spite of tariff and non-tariff barriers.

Leadership/Vision

Strong leadership, discipline and vision are required to address a number of very important value adding issues. Issues include the will to revisit taxation questions to better align Australia's position with it's competitors.

Important mineral value adding nodes are developing in Queensland. However, to strengthen this manufacturing culture and vision, concepts of vertical integration and the development of suitable indigenous multinational companies are required to progress value adding projects. Furthermore, evidence of a growing anti-development culture suggests the need to bring the public onside with future value-adding developments.

Investment Drivers

Various studies by government agencies have been commissioned in an attempt to identify investment drivers. Factors appearing to be important in the viability and location of mineral processing facilities, particularly for Australian based companies, include: cost of power; cost and availability of infrastructure; cost effective access to resources; environmental regime/regulations; community acceptance; and industrial relations.

For a viable project it is necessary to be cost competitive and have access to markets, technology and a resource. Cost is the key factor for undifferentiated products (eg aluminium, base metals) because the technology is commonly known, fully developed and widely practised. In contrast, with differentiated products (eg high value base metals such as magnesium), intellectual property most often is tightly held and thus forms a protective high cost barrier.

Whilst it is most important to address factors which will attract processing industries, research and experience has shown it is critical that Government exercises flexibility in responding to the differing needs of individual project proponents. Each project must be considered on its own merits.

Research has indicated that Government incentives alone have not been a key driver in influencing location decisions for major investment projects. Perceived speed of decision making (including predictable approval time frames and minimal risk outcomes), agency project handling and facilitation efforts and availability of suitable land for large projects are cited as key criteria for shortlisting locations for projects.

Government Support

At the Commonwealth Government level there are no programs specifically aimed at adding value to metallic minerals apart from the unfunded light metals strategy. However, generic

assistance measures such as Customs Policy By-Laws, R&D assistance and investment assistance are available to this industry sector.

A recent examination of Queensland State Government activities impacting on value adding to minerals indicates significant support is provided to this sector in areas of infrastructure, research and development, project facilitation and investment attraction. The State's Light Metals Strategy demonstrates a successful co-operative approach between State, Commonwealth Government and industry to develop a globally competitive light metals industry.

To attract further investment in value adding activities, other strategies need to be considered to differentiate Queensland and provide a long term competitive edge.

Further Processing of Queensland's Minerals

Potential exists across all mineral industries in Queensland to increase the extent of processing prior to export and to move further down the value adding chain. This potential however varies significantly across the sector. The Attachment *Queensland Commodity Value Adding Table*, demonstrates stages of value adding undertaken and the potential for further processing.

Of particular relevance to Queensland are the **base metals** – copper, lead and zinc. World class resources exist, particularly in State's north west, however the remote location, limited infrastructure, energy availability and costs, affect value adding opportunities in this region. Nickel on the other hand lends itself to further processing opportunities given recent advances in process and extraction technology with significant operating cost reductions.

Light metals – with one of the world's largest magnesite deposits, an established aluminium industry, technical infrastructure, R&D centres and significant cost advantages, Queensland is the ideal location for a world class light metals industry. The Queensland Government Light Metals Initiative is designed to pursue this objective.

Precious metals – silver and gold. While Queensland is Australia's second largest gold producer there has been no significant value adding to both silver and gold. The main possibilities appear to be in further refining, coinage or jewellery manufacture.

Industrial minerals in Queensland require ongoing investment in exploration for further deposits and in downstream processing to cater for the domestic and export markets. Ceramics is an area with particularly strong potential for import substitution and export marketing.

Queensland is well endowed with resources in the **energy sector** – coal, gas, oil shale. As Australia's largest producer of coal, further value adding is a priority for Queensland to develop new market opportunities in areas such as coal blending and ultra clean coal. While the Queensland Government's gas strategy is increasing access to this energy source, cost remains a significant factor for attracting process industries. Oil shale developments in this State offer a new source of hydrocarbon raw materials adding significantly to Queensland resource development potential.

Summary

This Paper introduces a range of issues to promote discussion and consultation on value adding to minerals in Queensland. An overview of value adding activity is also provided with a view to examining further project opportunities in the various mineral sectors.