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The Committee Manager
Standing Committee on Natural Resource Management (Climate Change)
Parliament House
Macquarie St
Sydney NSW 2000

Email: Climate.Change@parliament.nsw.gov.au

Dear Sir/Madam

Inquiry into Water Management and the Impacts of Climate Change

The NSW Minerals Council (NSWMC) welcomes the opportunity to make a submission to the Standing Committee on Natural Resource Management's (Climate Change) inquiry into issues of water management with particular reference to climate change impacts.

Whilst NSWMC is not in a position to comment specifically on the likely impacts of climate change on the availability of water resources under different climatic scenarios, NSWMC can demonstrate the industry's commitment to best practice water management.

The minerals industry in NSW is acutely aware of the value of water from both commercial and social perspectives. The industry is committed to maximising the value of the water that it uses, and working closely with all stakeholders to continually improve the management, use and conservation of water, particularly as climatic changes impact water availability in NSW.

NSW mining – economic and social contribution

NSWMC represents the minerals industry of NSW, one of the key drivers of the NSW economy. With an estimated value of $23 billion for 2009-10, NSW mineral production is substantial. Coal accounted for over 70% of total production value, and metallic minerals representing over 20%, with the remainder comprised of industrial minerals and construction materials[1].

The NSW minerals industry directly accounts for 2% of Gross State Product (GSP). 75% of this is earned through exports. The sector is the largest merchandise exporter in the State, accounting for 35% of export income. Mining and minerals processing directly employ 47,000 people, mainly in regional towns and cities, and indirectly support over 200,000 jobs throughout the State[2].

The NSW minerals industry contributes a significant amount to NSW Government revenue through royalties, taxes, and charges. The 2009-10 Budget saw the royalty forecast revised from 2008-09 from $920 million up to $1.4 billion[3].

For the NSW community, the economic contribution of the NSW minerals industry translates to:

- High levels of employment within the industry
- High paid jobs for minerals industry employees
- Support for businesses and employment in rural and regional communities

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[1] Based on figures provided by Industry & Investment

[2] ACIL Tasman (2006), *The contribution of the minerals industry to the NSW economy*, Report prepared for the NSW Minerals Ministerial Advisory Council, December, p. vi.

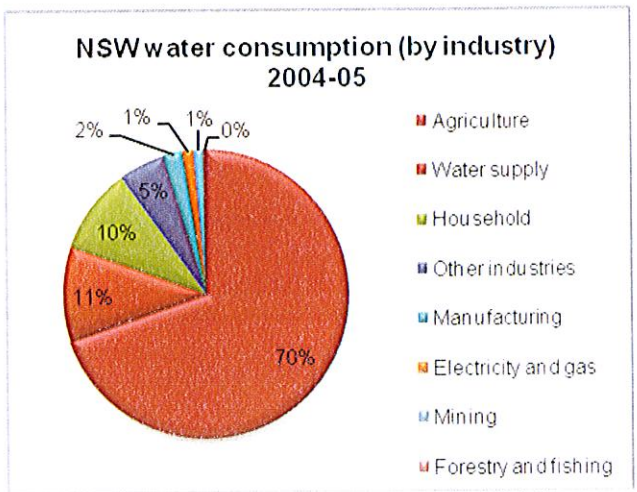
[3] NSW Government, 2008-09 Mini-Budget Papers

- Electricity, road, rail and port infrastructure
- Contributions to community life through sporting clubs, emergency services, charities and other groups
- Hospitals, schools, police and other community services throughout the State funded in part by the significant royalties and taxes paid by the industry.

Maximising the value of water

The economic value produced from water used by the minerals industry is higher than any other industry. The minerals industry has an average value of $80 per cubic metre of water used, compared to $40/m³ for the industrial sector and $5/m³ for the agricultural industry[4].

Significantly, mining is also a comparatively small user of water in NSW. According to the ABS Water Account (2006), mining consumed just over 1% of the entire state's water consumption, that is, only 63 GL of the 5,922 GL consumed in NSW during 2004-05. This is compared to agriculture (70%), the water supply industry – including distribution losses (11%) and households (10%).



Source: ABS Water Account, Australia 2004-05

The minerals industry recognises that even though mining only uses 1% of water in NSW, mining operations can often be the single largest user in a town or region. As a result, the minerals industry is continually looking at innovative ways to minimise its water consumption. In NSW, mining is reported to be the 4th largest user of "Reuse Water", utilising 5695 ML. The ABS acknowledges that this figure does not include the significant amount of recycled water that is used within mine site operations.

Mining is a temporary use of the land. It currently has a very small footprint within NSW (compared to agriculture, urban development and many other land uses) accounting for less than 0.1% of total land use in NSW[5].

The 2006 NSW State of the Environment Report shows land use in NSW as *"Agriculture…the dominant land-use system in NSW, account for 76% of the State's total land area. Grazing (69.8%) is by far the largest land use, followed by cropping (7.9%), forestry (approx. 3.6%) and mining (approx. 0.1%), with irrigation and other intensive uses accounting for less than 1%. Conservation lands occupy 7.8% of the total area, which urban development is less than 0.2%."* [6]

NSW Regulatory Regime, Environmental Assessment and Water

The regulatory framework in place in relation to the minerals industry is substantial, and affects all aspects of a mine site, from exploration to closure. Water is given particular attention, with an

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[4] CSIRO (2007), *Process Magazine*

[5] Bureau of Rural Sciences – Australian Collaborative Land Use and Management Practices

[6] NSW 2006 *State of the Environment Report* (http://www.environment,nsw.gov.au/soe/index.htm)

extensive number of requirements that must be met for a project to be approved. For example, as part of its Environmental Assessment Requirements under Part 3A of the *Environmental Planning and Assessment Act 1979,* a study must be conducted that provides the following in relation to water:

- A detailed site water balance
- An assessment of the potential loss of surface and groundwater flows to the environment and other land users
- An assessment of potential water quality impacts on the environment and other land users, including salinity impacts
- A description of final void water management.

A number of key guidelines must also be taken into account in any water assessment including:

- National Water Quality Management Strategy: Water quality management – an outline of policies (Australia and New Zealand Environment and Conservation Council/Agriculture and Resource Management Council of Australia and New Zealand [ANZECC/ARMCANZ])
- National Water Quality Management Strategy: Policies and Principles – a reference document (ANZECC/ARMCANZ)
- National Water Quality Management Strategy: Implementation Guidelines (ANZECC/ARMCANZ)
- National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)
- State Water Management Outcomes Plan
- NSW Government Water Quality and River Flow Environmental Objectives (NSW Department of Environment, Climate Change and Water [DECCW])
- Managing Urban Stormwater: Soils and Construction (Landcom)
- Managing Urban Stormwater: Treatment Techniques (DECCW)
- Managing Urban Stormwater: Source Control (DECCW).

Water Sharing Plans under the NSW *Water Management Act 2000* and sustainable yield projects also specifically address the sustainable management of water resources, including environmental flows as well as the sustainable management of the State's surface and groundwater resources, which are critical to primary industry in NSW. NSWMC supports the rapid development of Water Sharing Plans in order to enable the industry to streamline its water management systems.

The minerals industry aims to meet, and in many cases exceed these requirements and establish leading water management practices.

NSW mining industry's approach to management of water resources

The NSW minerals industry is a world leader in water management. The industry is acutely aware that water is a critical resource, and is also one of the industry's most important business inputs, in the same way as it is for other primary industries such as agriculture. The NSW minerals industry takes a strategic approach to water management so that water is efficiently managed and valued as a vital business, community and environmental asset. This involves strategic water planning, constantly improving operational performance and building relationships with stakeholders to generate mutually beneficial outcomes.

Mines obtain water from a variety of sources including direct harvesting from the environment (surface and ground water); water reused from other sources; on-site recycling and town water supplies. Mines often use water that cannot be used to other purposes, such as deep saline groundwater or effluent from town sewage.

Example: Cadia Valley Operations

Cadia Valley Operations sources 30% of its water from Orange and Blayney City Council's effluent. This lower quality water can be used directly for functions such as dust suppression, or it can be treated to reach a higher quality.

At Cadia's newest mine, Cadia Valley East, only 10 per cent of the water used will be "new" water - 80 per cent of the mine's water supply will be recycled water and the remaining 10 per cent will be treated effluent from Blayney and Orange.

Mine dewatering – the removal of excess runoff and groundwater seepage into mines – is another process used by a large number of mines to obtain water. This water can be returned to the environment, used during production, or shared with other local mines, towns or industry.

In order to further reduce the reliance on fresh water supply, the industry has also developed extensive water sharing systems between sites and other industries. For example, in the Central West the industry provides excess water to power stations and returns it to streams to supplement environmental flows. Extensive monitoring of impacts is undertaken by industry, particularly of streams and groundwater. Ground movements, stream flows, water quality, ecosystem health and visual aspects are all monitored regularly, and this data is particularly useful in the prevention of future impacts on water supply.

The minerals industry in NSW also highly values the positive contribution that research and innovation make to the improvement of water management systems and processes, particularly in light of climate change impacts. Such research has led to mines developing water efficient technology that can be deployed across a number of different industries. Substantial investment is made in research organisations such as the Sustainable Minerals Institute based at the University of Queensland and the Australian Coal Association Research Program (ACARP).

Industry best practice in water conservation and management

The NSW minerals industry is committed to developing leading practice in the area of water management, by meeting, and in some instances, exceeding regulatory requirements placed on the industry.

Water Accounting Framework

A recent demonstration of industry initiative in relation to water management is the development of a National Water Accounting Framework, as part of a wider Water Metrics Program. In 2007, the minerals industry, led by the Minerals Council of Australia (MCA), began a research and development project on a water accounting framework in conjunction with the Sustainable Minerals Institute (SMI) at the University of Queensland.

The water accounting framework has been piloted in a partnership between the MCA, SMI and NSWMC at a number of operations in Central West NSW. The results have been collated and a finalised framework will be developed for use by the minerals industry in Australia. The primary objectives of the Framework are to provide:

- A consistent approach for quantifying flows into, and out of, reporting entities, based on their sources and destinations
- A consistent approach for reporting of 'water use' by minerals operations that enables comparison with other users, and relates to water sharing planning processes
- A consistent approach in quantifying and reporting water 'reuse' and 'recycling' efficiencies such that the reliance on sourced water is reduced
- A model for the more detailed operational water balance as guidance for those businesses which currently do not have an effective operational water model or see an opportunity to develop this new approach.

The Water Metrics Program, mentioned earlier, is a NSWMC and MCA partnership initiative, with the aim of developing a new, more comprehensive framework that will improve the level of water management and knowledge on sites, providing greater consistency in reporting and enable water accounts to be generated at each site. This will allow for benchmarking across the industry and continual improvement in water management. This level of commitment puts the NSW mining industry at the forefront of implementing the principles of the National Water Initiative.

National Water Initiative

The National Water Initiative (NWI) is Australia's enduring blueprint for water reform.

Through it, governments across Australia have agreed on actions to achieve a more cohesive national approach to the way Australia manages, measures, plans for, prices, and trades water.

One of the key objectives of the NWI is to develop a national system water accounting which is able to meet the information needs of different water systems in respect to planning, monitoring, trading, environmental management and on-farm management.

Other significant water management initiatives include:

- **Strategic Water Management in the Minerals Industry – a Framework:** A publication produced jointly by the Ministerial Council on Mineral and Petroleum Resources (MCMPR) and the MCA. This aims to promote a strategic approach to water management at mining and processing sites so that water is more efficiently managed and valued. The framework sets out the strategic issues that mineral operations need to consider for responsible water management at a site and corporate level in order to manage risks and identify opportunities for continuous improvement. It provides a high level guidance on issues that should be addressed in developing a water strategy for a business.

- **Leading Practice Sustainable Development Handbook for Water Management:** This leading practice booklet for water management in the minerals industry was published in 2008 following a collaborative effort involving academic, government and industry representatives. It provides an up-to-date source of information that seeks to build on the strategic framework, as well as the mine site water management handbook developed by the industry in the late 1990s.

Conclusion

The NSW minerals industry is a key driver of the NSW economy, with a value of approximately $23 billion, and increasing. The industry returns $1.4 billion in royalties and taxes annually to the state government's consolidated revenue. This immense economic contribution ultimately translates into a variety of social benefits for the wider community, in addition to direct contributions made by the minerals industry.

Mining uses a comparatively small amount of water in NSW, and the industry works closely with government and the community to ensure that all regulatory requirements are met, and community concerns heard. The minerals industry and its activities are heavily regulated. This is increasingly so as the impact of climate change is felt in the environment, particularly in regard to water.

The NSW minerals industry is committed to developing leading practice in the area of water management by meeting, and where possible, exceeding, regulatory requirements placed on the industry. The industry will continue to undertake initiatives to be world leaders in the water management space.

The NSW minerals industry will also continue to foster the constant improvement water management process, particularly in light of climate change, but investing heavily in research to further develop and refine current and new water management innovations.

The minerals industry in NSW is acutely aware of the value of water to all groups in society, and is steadfast in its practice of maximising the value of the water that is uses, and will maintain a cooperative relationship with all stakeholders to continually improve the management, use and conservation of water in NSW.

Yours sincerely

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CHIEF EXECUTIVE OFFICER