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Murray Darling Association Inc.

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Mr Bede Mecham
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10th December 2007.

Standing Committee on Natural Resource Management (climate change)
Parliament House
Macquarie Street
Sydney 2000

Attention: Cheryl Samuels

Dear Sir

Re: Natural Resource Management (Climate Change)

The Murrumbidgee Region of the Murray Darling Association submits the attached comments on the above subject.

Yours Faithfully

A handwritten signature in black ink, appearing to read "Bede Mecham", is written over a horizontal line.

Bede Mecham
Secretary Murrumbidgee Region

NATURAL RESOURCE MANAGEMENT (CLIMATE CHANGE)

Introduction – Climate change is a global problem and what NSW does will have little effect on any long term outcome. This is not to say that we should not play our part in reducing greenhouse gases. If the world was to stop emitting greenhouse gases to-morrow, climate change would continue for decades as there are enough greenhouse gases in the atmosphere for this to happen.

Energy – The most significant greenhouse gas is carbon dioxide and this gas is produced as the direct result of the combustion of fossil fuels. Factors that suggest that greenhouse gases may increase in the future:

- About two billion people do not have access to substantial levels of energy. If they aspire to better lifestyles then their energy needs will increase.
- In the first half of the 21st century the world's population is expected to increase by a further two billion.
- Parts of the developed world are still struggling to decouple growth in energy usage from economic growth.
- The developed world has invested huge amounts in producing energy from low cost fossil fuels and any change could lead to an economic burden for the people.

These factors suggest that greenhouse gas emissions will likely continue to rise and possibly accelerate.

Complicating this increase in greenhouse gas emissions is the 'life' of greenhouse gases in the atmosphere. The effective lifetime of carbon dioxide is around 80 years. Thus, in order to stabilise concentrations of this gas in the atmosphere, quite massive reductions in emissions are required.

Therefore it is concluded that because 80% of our energy requirements will be derived from fossil fuels for the next so many decades, it is likely that carbon dioxide concentrations will not be stabilised in the atmosphere for several decades into this century and therefore climate patterns will continue to change.

What Climate Change is possible for Australia.

There are a number of possible outcomes:

- By 2030 an increase in the annual temperature of between 0.4 and 2.0 degree Celsius.
- More heatwaves and fewer frosts.
- Possibly more frequent El Nino Southern Oscillation events which result in more frequent and prolonged droughts.
- Possible reduction in rainfall and runoff, up to a 20% reduction in the Murray-Darling Basin
- More severe wind speeds in cyclones, associated with storm surges being progressively amplified by rising sea levels.
- Increase in severe weather events – including storms and high bushfire propensity days.

Land and Water Australia are seeking input into a national climate change research strategy for primary industries. The increased temperatures, lower rainfall and reduced water supplies now affecting most of southern Australia are giving farmers a taste of what life might be like under climate change.

Land and Water Director Michael Robinson says " We need to be better prepared for this sort of impact and the changes that it will bring" He says it is more that a matter of being prepared for a change in the weather. "What does that mean in terms of our policy environment?. What does that mean in terms of our ability to feed the nation? What does that mean in terms of our ability to cope with structural adjustment or significant land use change? What does that mean for our regional communities?"

To cope with climate changes we need to adopt an Adaptation Strategy. An adaptation strategy to be effective must result in climate risk being considered as a normal part of the decision-making. Prioritising adaptation action requires the identification of vulnerable systems – human and natural.

Murray-Darling Basin

This is the largest river basin in Australia. It is significantly regulated by dams and weirs, including four major storages, sixteen weirs, five barrages and numerous other smaller structures. Roughly 40% of mean annual flow is allocated to human purposes, with the majority used for irrigation.

Without the regulation of the river, the population of Adelaide and many other cities and towns in the Murray Valley would be considerably smaller than they are today.

The region is home to a biodiverse community of plants and animals, as well as manufacturing and agricultural industries:

- the basin has at least thirty five endangered birds and sixteen endangered mammals with twenty mammals being extinct.
- it is estimated that there are more than 30,000 wetlands in the Basin
- the total area of crops and pastures irrigated in the Basin is 1,472,241 hectares. This is 71.1% of the total area of irrigated crops and pastures in Australia.
- Around 70% of all water used for agriculture in Australia is used by irrigation in the Basin.
- The Basin is Australia's most important agricultural region, accounting for 41% of the nation's gross value of agricultural production.
- Manufacturing industries in the basin have a turnover of more than \$10B.

Natural Systems – CSIRO modelling indicates that climate change is likely to reduce rainfall within the Murray-Darling Basin. Stream flows within the region are expected to vary by 0 to -20% by 2030. This could lead to water shortages and a corresponding increase in competition between water users, especially where large diversions to river systems are made for industry and irrigation.

Human systems – In terms of agricultural losses, some estimates suggest that the Murray Darling Basin, where irrigated agriculture accounts for around 70% of all water used, climate change could impose costs to agriculture in the order of \$0.8-1.2B in net present value terms. These losses may be incurred due to increasing soil salinity levels, topsoil loss and water erosion in periods of flooding and increased competition which could reduce the supply of water for irrigation.

Energy Requirements

Professor Owen delivered a report to the NSW Government in August 2007. Amongst his findings was that private investors weren't keen to invest in Government owned power stations and NSW needed more base power by 2013-14. Also a major obstacle to private sector investment in power generation is the uncertainty about an emissions trading policy. All future investment in power generation anywhere in Australia will be in a carbon-constrained environment. The new Federal Government has committed to reducing greenhouse emissions by 60% of 2000 levels by 2050.

Bali Conference

As Australia has agreed to sign the Kyoto Protocol and is attending the UN Conference in Bali. The UN needs a new global climate change deal after 2012. For any meaningful targets to be set the US and China must agree to a reduction of the emissions.

Ross Garnaut who is preparing a report for the Rudd Government on what emissions level Australia should agree with and his report is due in August. Garnaut has called it a diabolically difficult policy challenge and concluded that it was unlikely a sound agreement on global emissions targets would emerge from a single, large intergovernmental meeting (such as Bali), an opinion shared by other seasoned observers of such meetings.

Conclusions

If Australia is to be a leader in the world forum we must put our own house in order:

- Per Capita we are one of the worst polluter in the world, so Australia must set an emission reduction target without disadvantaging ourselves.
- Must set an emission trading policy
- Water use is to be more efficient, urban areas need to stick with their allocations in line with available supplies.
- Irrigation water use must be more efficient.
- Storage and delivery of water must be more efficient,
- Increase our renewable energy supply, with use of wind and solar.
- As we will be reliant on fossil fuels for our base energy supply for some time to come, we must increase our research to find a clean coal technology.
- Agriculturists will need to adopt adaptation strategies to deal with the temperature changes and less water.

Reference: Climate Change Risk and Vulnerability – Australian Greenhouse Office