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Parliamentary Secretary House of Reps
and
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Coordinator Infrastructure Australia

Below is our submission to the enquiry, on the impact of Murray Darling Basin Water plan in regional Australia. Our comments broadly fall into two categories

- 1) Additional water savings that can be made within regions now and
- 2) Provision of details of an alternate water delivery system that can meet environment demands while maintaining irrigation volumes at a similar cost to MDB plan.

Our Background

The writer, Terry Bowring of T Bowring and Associates Pty Ltd has over 40 years process engineering, technical and environment experience in the international and Australian agri/food industry. He has in this time been responsible for developing new products and plans to rationalize operations in major sectors of the Australian agri/food industry. He also has small farm intensive irrigation experience (Hydroponics) and large scale agricultural experience in a managerial role with Green Giant a major USA processor involved with growing and processing irrigated vegetable crops in 55 growing between Canada and California.

1) Water savings potential on MDB farms

Intensive dairy farming involves a change over from flood irrigation of pasture to growth of crops to feed cows housed in sheds. By following optimum intensive dairy procedures growers in N/Vic GV region could reduce water usage by up to 500 GL pa. At the same time they could reduce CO2 emissions through soil carbon build up and the recovery of methane from cows housed in sheds. Carbon farming techniques at Turnbull orchards Ardmona indicate 66% reductions in water/ tonne of fruit. Their techniques can be progressively applied to a range of crops, and decisions should be made now, for related agricultural R&D expenditure to confirm benefits.

2) Multi State Water Transfer Project (N/Qld to Murray in Vic)

T Bowring and engineering consultants have investigated the potential to move water from the north to the south to meet projected southern climate change induced reductions in rainfall. New water from the north will be required to meet global demand for food and bio-fuels resulting from global population expansion, it can also expand availability of water within coastal and inland urban regions and be used to supplement environmental flow and GHG reduction demands. Global food demand will double by 2050 and early indicators of demand are expected to be felt within a decade. The future of regional Australia is tied up with water for agriculture and it is fair to say it is agriculture that hold regional towns together. Farmers are the best people to manage environment land and water issues and they will do so when they are actively involved in achieving related technical and economic outcomes.

While we understand southern water buybacks appear to be cost effective in returning water to the environment in average rainfall conditions, when projected dry periods return, very little of this water will return to the environmental demands it was purchased for. This is not so with monsoonal water from the north, which is reliable in volume output most years, and along with other tropical regions around the world, is showing distinct trends for higher annual rainfall from cyclone activity.

We have determined where water can be stored in the north and have optimized low lift canal routes to move water north to the south via fast moving lined aqueducts.. The above attachments outline preliminary estimates of cost to deliver water and adequate returns available to a Federal government Public Private Partnership (PPP). Our abc water overview presents a even handed approach to benefit multi state needs. The question has been asked what federal/state political issues could

hinder development of canal infrastructure over Queensland and NSW. If this was a problem it would be possible to end canal construction before the NSW border and modify Warrego river embankments to allow water from the north to flow into the Darling with minimal loss or environmental impact. This would be a minor version of what has been normal for thousands of years before Qld irrigation diversions along the Ballone etc reduced the volume of water annually flowing to southern regions.

To make it all happen we have made contact with major engineering groups in USA and Australia and for a start are seeking preliminary funding to have our cost pre-estimates independently verified. We also need funding to demonstrate benefits of locally available new excavation and lining technologies that could substantially reduce cost of introducing infrastructure. While the introduction of new water is a major future demand for regional areas in the Murray Darling Basin, projected world wide shortages of phosphate fertilizers may also require future attention as to how and where we farm. Some expect greater need for farming closer to cities to reduce transportation carbon charges in food delivery. We have addressed these issues in both broad acre and urban farming scenarios, via the introduction of proven syngas fermentation technology that can produce ethanol and power from carbonaceous feed-stocks while recycling crop nutrients in a dry form suitable for re-use

These and a range of other issues are all covered briefly in above attachments and we look forward to elaborating on next steps within the enquiry

Yours Truly

Terry Bowring
Director
T Bowring and Associates Pty Ltd

MULTI STATE WATER TRANSFER PROJECT (KEY POINTS Nov 2010)

WATER DEMAND

Suggested demand now

- WSAA projections of city demand from desalination & recycling ~1000 GL by 2026
- MDBA water plan 3000 to 4000 GL for environment flows etc, rising up to 7600 GL

Suggested Future demand

- Water to expand urban cropping and fertilizer recycling - possibly up to 1000 GL pa.
- Irrigation water to reliably double grain production by 2020, estimate 7500 GL pa.

CANAL INFRASTRUCTURE

Stage1) water,4000 GL pa sourced from Burdekin Falls dam and other upstream dams.

Water moved south to Murray in Vic via low power canal route designed to reduce water losses. Subsidiary canal out-turns built into main canal to supply coastal cities. By using modern excavation/lining systems, a preliminary capex of \$10bn projected. Gross returns of \$2.8bn pa to a Federal Government PPP possible, by applying water to below demands

Stage2) water can be designed to flow into same infrastructure from Gulf of Carpentaria. Another 4000 GL pa entry into designed canal infrastructure is possible. Supply could go south via one of three routes depending on demands found from successful 1st stage ops

INDUSTRY AND COMMUNITY BENEFITS FROM NEW WATER

Agriculture- production of an extra 26million TPA of irrigated grains starting 2020

- GMH interested in ethanol production from Mallee eucalypt plantations
- lignin from mallees can be converted to carbon fiber for light weight cars
- Mallee char can reduce GHG emissions in steel making here and overseas
- urban farming will reduce emissions and assist recycling of crop nutrients
- Large coal and coal seam gas projects in Qld and NSW involved with water

Bio-fuels - 30% of local liquid fuel demand from biomass to ethanol or 10% to power
- City tri-generation and syngas fermentation plant can produce fuels, power and heat from city liquid and solid wastes. New or recycled water required.

NBN - Canal control system fiber optic cable can be integrated as backbone fiber to make savings on costs of installing and operating, regional FttH broadband

Sustainable population – reliable quality water to inland towns and farm regions will add to the list of demands to make decentralization work, provided support maintained

Carbon Reduction - Carbon farming techniques plus supplementary irrigation improve fertility and carbon content of soils. By using northern water to replace desalinated water and enable bio-fuels production, significant GHG reduction possible

Food Security - Significant global demand for food produce is expected within a decade. To meet demand and maintain our agricultural potential, new water is required.

MULTI STATE WATER TRANSFER PROJECT
Preliminary canal routes

