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1 June 2012

Mr Tony Windsor MP
Independent Member for New England
Parliament House
CANBERRA ACT 2600

Dear Mr Windsor,

I wrote to you in November 2010 regarding a proposal to transport water from Tasmania to the Murray to supplement the water flowing from the Murray-Darling Basin. You kindly replied, advising me to make a submission to the Standing Committee on Regional Australia to enquire into and report on the Murray-Darling Basin Plan in Regional Australia.

That Committee has now reported and the problem still remains unsolved. The total volume of water in the Murray-Darling Basin is not sufficient to provide water to its various claimants - with the observed situation where no-one appears satisfied (and many, really angry !)

I recognise that my original recommendations lacked any specific details and did not constitute a reasonable proposal. The problem can only be resolved if the QUANTITY of water is increased.

May I now ask you to consider a practical solution by transferring water from Tasmania to Victoria and the Murray River. This proposal by M Geoff Croker is detailed in the enclosed papers. Mr Geoff Croker, BE.Civil is working with DocklandsScience Park Pty.Ltd., associated with Melbourne University.

I appreciate and thank you for your courteous assistance and advice in the past.

Yours sincerely,

Alan McPhate
MB.BS., FRACGP. FAMA

Encs.

TASMANIA: WATER SUPPLY for SOUTH EAST AUSTRALIA

This plan solves the water shortfall for South East Australia's domestic, industrial and irrigation consumption for the next 100 years and beyond. It diverts water via an undersea pipeline from Tasmania's North West Hydro Electricity System which currently flows into the Southern Ocean and Bass Strait.

For the last 80 years the outflow from two Hydro regulated rivers in the NW, the Forth (1,300GL) & Pieman Rivers (4,000GL) has been on average 5,300GL/year or twice Victoria's total consumption. Hydro Tasmania dams are at a high enough level to achieve the required flow rates and volume to Victorian shores and Melbourne & Geelong's lower dams using gravity only. The Victorian inflow can occur via the Wonthaggi Desalination plant tunnels (500GL/year each) or elsewhere on the Victorian coast dependant on the target.

CSIRO reports show the rainfall in North West Tasmania will increase if tropical oceans continue to warm under the influence of greenhouse gas or solar activity.

Tasmania has a measured total runoff to sea of 45,000 GL/year or 12% of Australia's fresh water. It currently uses and plans to use less than 1,000GL/year. Water from its high dams is pristine and protected by national parks or severe local conditions. Many short flowing rivers are not measured. Large regions have no water meters. Land in this part of the North West is not suitable for irrigation. The Forth & Pieman Rivers are not used or planned to be used for irrigation. Floods in the North West are common and cause large scale devastation to the environment and infrastructure.

Hydro Tasmania has $1.1B of debt. Its catchment rivers are regulated by dams. Hydro electricity from the North West has large transmission losses. Electricity demand by NW heavy industry is rapidly falling. Hydro power has rarely been purchased by Victoria. Mainland coal fired power has been increasing bought by Tasmania. Revenue to Hydro Tasmania is less than $30/ML of water used for power generated at peak, $7/ML normal.

The Melbourne water grid supplies under 500GL/year with no restrictions.

For the proposed crossing routes, Bass Strait is a gently sloping, geologically stable, rock basin overlayed with sand. Water depths do not exceed 70m. Many types of existing infrastructure including communication, power, oil & gas pipes are already installed.
Two pipeline types are suitable. 0.25 inch helically welded steel (2.5m diameter, resting on bottom, high pressure) with a plastic coating or high tensile nylon fabric (6m diameter, floating, low pressure) with UV coating.

Stage 1

Connect Melbourne's pipe grid to Hydro Tasmania's Forth River catchment dams. There is up to 470m of available pressure and a flow of up to 350 GL/year can be delivered to Melbourne's existing infrastructure without pumping. Such infrastructure includes the Melbourne's Cardinia and Geelong's Wurdiboluc Reservoirs. Equally it is possible to come ashore near the Seagas pipeline (supply SE South Australia) or at Port Fairy (supply Rocklands Reservoir).

Stage 2

STAGE 2

Connect Melbourne's high dams to the Eildon Dam via a 30km tunnel from the Upper Yarra reservoir to Big River. This can supply 300 GL/year (worst case, up to 800GL) to Eildon reservoir.

The whole pipeline route is across Crown Land. Costs have been estimated from quotations from large Australian suppliers in the oil & gas and pipeline industries with input & from consulting engineers who have designed undersea pipe across Bass Strait. Calculations have been reviewed by practicing oil & gas industry engineers with undersea pipeline design experience.

Project Estimated Cost Stage 1 (steel): Under $2 Billion.
Project Estimated Cost Stage 1 (nylon fabric & steel): Under $800Million.

Project Estimated Cost Stage 2: Under $300Million.

The technology to be used for steel fabrication and installation has been implemented and used by other large scale undersea pipeline and tunnel implementations.

The Future: The current consequences of long periods of drought (10+ years) are now known. Victoria & South Australia will need a major new source of water to supply their existing food producers, regional towns & new large scale mines fed from the River Murray. The choice is stark, lower economic activity, desalination at great ongoing cost and power consumption or pipelines connected to NW Tasmania.

Stage 3 Supply to Victoria's northern flowing rivers:

Additional pipelines can be installed as required. The landfall can supply SE South Australia or the Rocklands reservoir. Rocklands can supply many of Victoria's northern and southern flowing rivers by gravity. The region around Rocklands, the Wimmera, is rich volcanic soil current used for sheep and dry farming. Reliable water will allow irrigation. It can become a $20 Billion food exporter to Asia. Regional infrastructure for food export already exists.

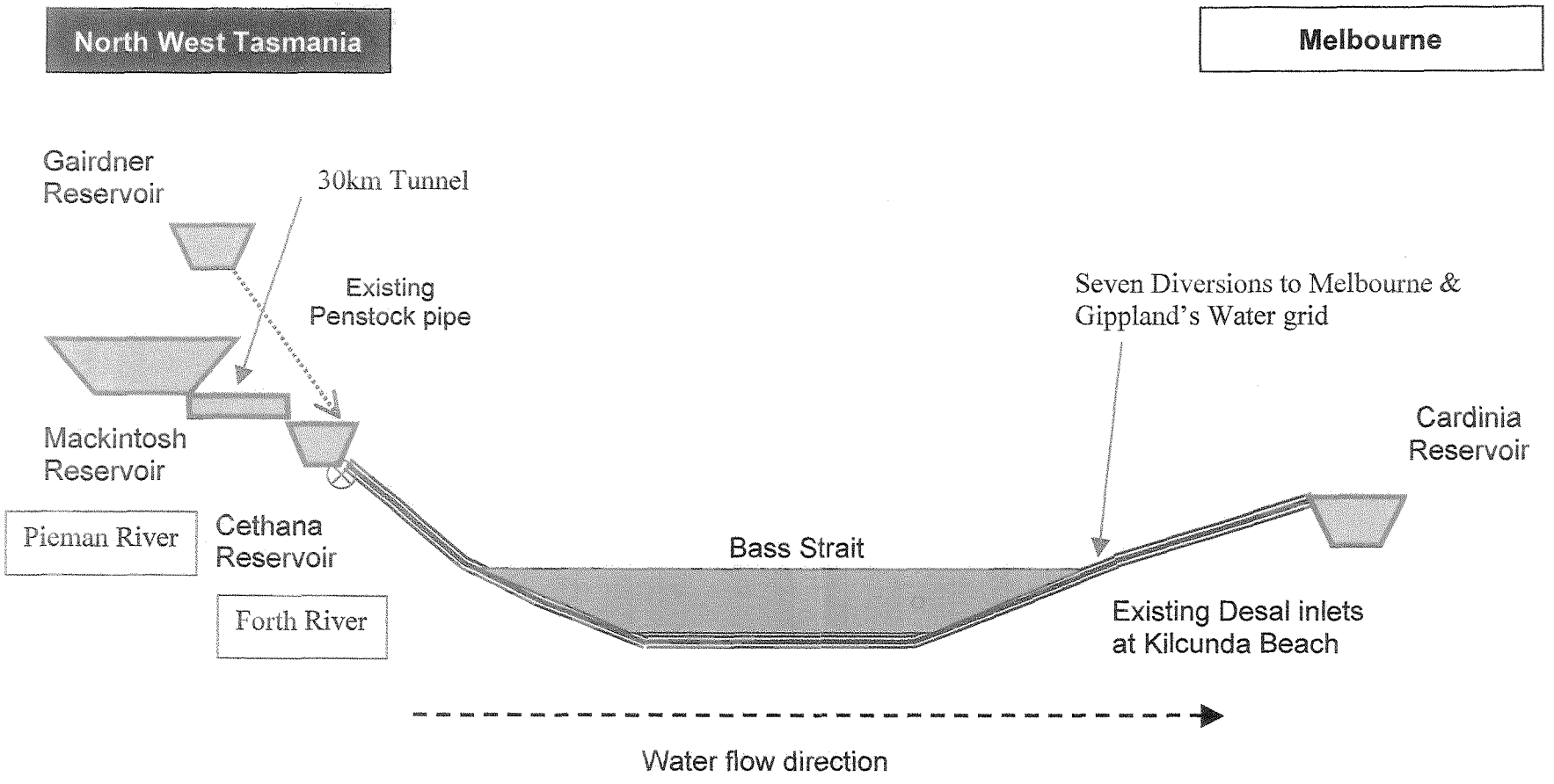
Stage 3 will require access to additional Tasmanian water which can be facilitated by joining the Pieman & Forth Rivers catchments using a 30km tunnel.

Supply pipes can be made of steel up to 3.6m in diameter, or 6m if made of nylon fabric. Each pipe can carry up to 500GL/year. The nylon fabric floats off the bottom of sea floor and can cross over existing infrastructure over very long distances (could reach Whyalla).

Target Retail Pricing (inc Tasmanian Royalty):
Town water under $1,700/GL.
Agricultural water under $ 100/GL.

Conclusion: This is a Plan that solves SE Australia's water supply problem for the next 100 years. A pipeline can be built in less than three years. When implemented it would surpass the Snowy Mountains Scheme in terms of economic output, not use huge amounts of electricity like desalination plants, be cheap enough for agricultural water and be self funding after the first pipeline.

Geoff Croker BE Civil (03) 9807 8252, 0409 604 303, gcroker@bigpond.net.au

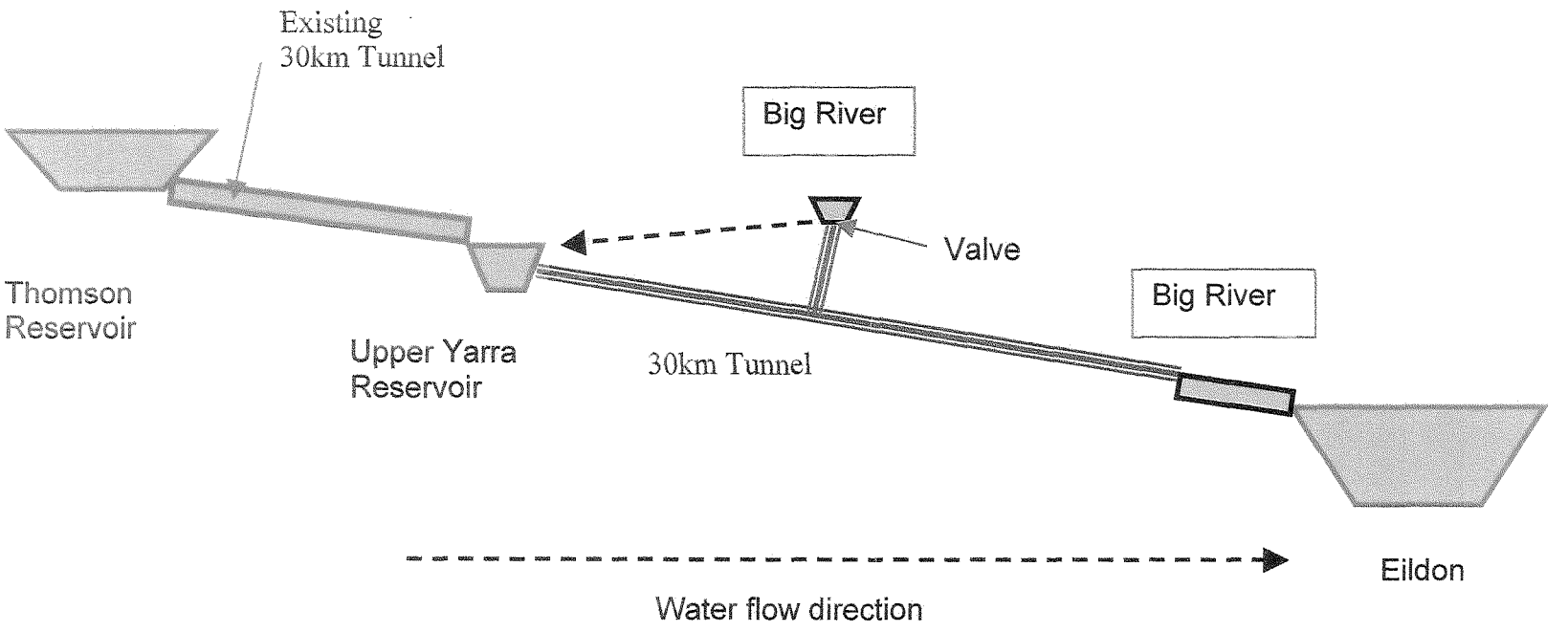


South East Australian Water Supply Solution
NW Tasmania to Melbourne
Up to 350GL/year

CONFIDENTIAL

Melbourne Catchments

Eildon Reservoir



South East Australian Water Supply Solution
Upper Yarra to Eildon
300GL (drought) to 800GL (flood) /year

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The net flow to sea from the Pieman and Forth catchments is 5,300 GL/year averaged over 85 years of records.

These catchments can be joined using a 30km tunnel (similar to that already built for Tasmanian power station feeds). There is benefit for industrial power production along the Forth River rather than the Pieman. The net head loss of 11m (tunnel drop) is compensated by reliable power production along the Forth and operating expenses and additional capital on one river rather than two. The Pieman could eventually become a world class tourist destination.

Advances in technology mean that the Bass Strait crossing can now be built for under $700M using a combination of steel and fabric based pipelines. The steel pipeline(s) are used to reach a depth of 35m. The fabric floats off the bottom and is held down on a cable tied to anchor weights or suction piles. Sections are zipped together. The fresh water flows to Victoria under very low pressure in a large diameter pipe. No pumping is required as 10m of head is available near the mouth of the Forth River at the river estuary divide. The diameter of the fabric pipeline is 6 metres so the wall effect is minimal.

With a flow of 5,300 GL to sea it would be possible to divert 1,500GL to Victoria. This equates to $27B/year of economic activity. A royalty would be paid to Tasmania that could further develop the NW for tourism and developments in water quality.

WATER, HYDRO ELECTRIC POWER AND RARE EARTHS PROCESSING

Part of the motivation of developing a water system for SE Australia is the huge money to be made in the development of rare earths, through to modern electric and electronic systems, which use those rare earths, usually in alloyed materials.

Olympic Dam has some $4,500,000,000,000 ($4,500 Billion) of rare earths in the ground and unless adequate water of acceptable quality can be supplied to the site those rare earths are likely to stay in the ground.

Using the technology, now developed, that water can come from as far away as the Star Mountains of New Guinea, New Zealand, or Tasmania. In the long term it is possible that water from New Guinea and Tasmania will meet on the verandah of Senator Joyce's home! The lift required to have the water flow the required distance is small and well within our technical and economic requirements.
The economic potential of this is monumental.

Handling the rare earths
Despite some public reaction from the unknowing, this is not difficult.
Thorium is the radio active element and it is so low in radio activity that it can be handled, but not ingested. It can easily be stored for later use in geopolymer containers, at Roxby Downs, or in a deep sea location off the coast of Tasmania. There are no environmental problems of significance.
A plentiful water supply and cheap hydro electricity are the major requirements.

Given the water, the concentration and treatment of the rare earths might start at Roxby Downs, or nearby, perhaps include the Whyalla plant proposed by Arafura Resources (see "http://www.arafuraresources.com.au/ ") and then to Tasmania.
So the rare earths can be split into the sections that Tasmania might want, probably the magnetic section which is capable of high value upgrading for final electronic equipment use. How much might be done in Tasmania and then passed on to Singapore, to create final products, will be a matter of experience.

Docklands Science Park is involved in the development of nano technology which we expect to be of great assistance to the rare earths industry. Our consultants are skilled in the metallurgy required to

form the desirable alloys and near perfect shapes from powder metallurgy. Substantial growth is expected in this area, both nationally and internationally.

In our view, Tasmania is well placed to benefit greatly by the proposed developments outlined herein. In resources and in climate Tasmania has what it takes to handle the development of a modern electronic equipment manufacturing industry and other products of a widespread nature, but importantly including parts for electric vehicles. The Arafura website refers.

Provided that the appropriate magnetic rare earth materials are available in Tasmania it is our belief that Joint Venture plants can be established with major international manufacturers to mass produce finished electronic segments, for which we have specifications, for insertion into final units.

ENDS.

DOCKLANDS SCIENCE PARK PTY. LTD
ABN 48 005 684 118

Level 2, 11 Queens Road,
Melbourne Vic 3004
Phone: (03) 9866 6966
Fax: (03) 9867 7088
Email: jim @ docscipark.com.au

Murray Water Means Wealth to SA Mining

How can the Murray River flow to SA be dramatically increased, even doubled?

- Water Trading allows water to be allocated downstream between connected catchments.
- Production requires certainty over long periods.
- SA has Olympic Dam, plus other major projects in minerals and gas/oil. Water can be flowed to Morgan, pumped to Roxby Downs and to areas north of Roxby, extremely economically.
- Producers and cities need allocations from catchments with a long history of certain water and large storages for buffer when inflows are less than outflows.
- The only catchments in Southern Australia with such certainty exist in Eastern Victoria and NW Tasmania.
- Melbourne Water has a permanent allocation of 75GigaLitres (Billion) /year in Eildon for the N-S Pipeline to Melbourne. This can be used in the start up period and is a quick start.
- Two Hydro regulated rivers in NW Tasmania the Forth & Pieman have outflows to the sea of 5,300GL/year. Connection of these rivers to the SE Australian water grid would allow massive economic change because it gives business access to low cost water. In Australia, **inexpensive** water is money. **Expensive** water lowers production by making many processes uneconomic. Desalinated water is not cheap.
- 500GL/year of low cost water equates to $9 Billion/year of value.
- Connecting Melbourne to 350 GL/year of NW Tasmania's water and connecting 300GL of Melbourne's water to the Murray River creates $5B/year.
- Connecting Victoria & South Australia to 1,000GL/year of NW Tasmanian reservoirs creates $15B/year +.