



Universal Water Recycling

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December 16, 2019

RE: Application Number SS-8896

Assessment Type State Significant Infrastructure

Development Type Water supply & management

Local Government Areas Lake Macquarie City

Dear Sir or Madam

I would like to make a submission for a water proposal for the Lower Hunter Water Plan.

The proposed projects title is "The Hunter Bayswater Recycling Water Scheme." (THBRWS)

It is available to view on my website www.uwr.com.au then go to a Scheme 1.

I would also like to make some comments on the proposed Emergency 15 ML/d Desalination Plant at Belmont, plus put both projects side by side to compare.

First of all, the AGL Power Stations uses around 70 Gigalitres of water per annum, we also have the Mining Sector, both of these industries use water from the Hunter River, which is released from Glenbawn Dam, with little treatment this water is of a potable grade, more than 50 Power Stations in the USA use treated recycled water to help supplement their supply where water is scarce, in

Queensland we have 3 Power Stations in the Western Corridor Water Recycling Water Scheme with over 200km of large diameter pipelines using treated recycled water, (see page 6 Scheme 1.)

Here in the Hunter Valley, no plans have been provided to the public for a long term solution for a potable water source for our growing population.

We need to follow Israel's system, they recycle 90% of their waste water, Sydney recycles less than 10%, the Hunter has some recycling water projects but unfortunately the Burwood Treatment Plant discharges around 5 million buckets of water every day or almost one Chichester Dam per annum of water that has had Secondary Treatment. (see Pages 10 and 50, in Scheme1)

(THBRWS) is a Water exchange system, it supplies 50ML/d of Secondary treated water from the Burwood Treatment Plant to the Power Station or the Mining Sector in exchange for 50 ML of their Glenbawn Dams water supply, which with little treatment is of a potable grade.

My Comments on the Proposed Emergency 15ML/d Desalination Plant at Belmont.

A) It is a puny plan.

B) CapEx, Capital Expenditure, excessive costs can't be justified.

C) OpEx, Operating Expenditure, a financial burden for Hunter water uses both Domestic and Industrial.

D) A Desalination Plant is totally unnecessary.

Desalination Option.

A) The volumes of water, 15 ML/d is only a band aid solution, if the drought continues dam levels will continue to keep dropping.
One Olympic swimming pool = 2.5 ML, 15 ML = just 6 Olympic swimming pools per day.

B) Capital Expenditure

A \$87 million dollars Desalination Plant would provide infrastructure to produce water to fill 6 Olympic size swimming pools per day, divided by 6 = \$14.5 million per Olympic Swimming Pool, or just 2.5 ML of water produced per day, this would have to be the highest cost of any water infrastructure project on the planet and for such little return, this is money down the drain! , \$14 Million can build an 80 ML Concrete Tank (Ellenbrook Tank Western Australia), this is a wise investment.

C) Operating Expenditure

Desalination Sea Water costs varies from \$1 to \$4 per kL, 1 ML = 1000 x 1000 cubes.

A ML at \$1 per kL = \$1000, a ML at \$4 per kL = \$4000

15 ML per day cost ranges from \$15,000 to \$60,000 per day.

Costs at \$1 kL per year, \$15,000 x 365 = \$5,475,000 million per annum.

Costs at \$4 kL per year, \$60,000 x 365 = \$ 21,900,000 million per annum.

D) A Desalination Plant is totally unnecessary,

By following Israel's system of 90% water recycled, and by utilizing the 50 ML/d of the Burwood Treatment Plants secondary treated water in (THBRWS) that is equivalent to having almost an extra Chichester Dam per annum, and if this water was incorporated with Scheme 2, (see pages 93 to 107 Scheme 2.) it would result in a potable water source much larger for the entire Hunter Valley and drought proof the Vineyards and the Mining Sector for the next 50 to 100 years.

The Hunter Bayswater Recycling Water Scheme, (THBRWS) Option.

Some of the associated costs,

Quote to supply 100 km of 1 meter in diameter pipeline that can transfer 50 ML/day = \$70 million (see pages 44 and 45 in Scheme 1)

Quote for energy costs to transfer 45 ML/d from the Burwood Treatment Plant to the AGL Power Station by James McKell, Origin Energy (\$ 2,027,182 million per annum.) see pages 14 and 15 in Scheme 1.

W3 plus Consulting energy requirements, pumping station costs,(pages 24 to 29.)

Quote for a preliminary Cost analysts from Makai Ocean Engineering for a survey for a Freshwater Transmission Subsea Pipeline. (USD \$38,000) see Pages 30 to 36 in Scheme 1.

I put in a submission for the Lower Hunter Water Plan of transferring water from North Head to Newcastle to Cathy Cole, Project Manager of the Metropolitan Water Directorate with Mr. Alan Cibilic on the 24 – 3 – 2013, at that meeting I was told that the project would supply too much water and the costs would be too expensive, I then put forward another submission of a smaller scale water project on the 11-11 -2013 Titled "The Hunter Bayswater Recycling Water Scheme."

Question: Why has THBRWS water proposal not been explored ?

For some reason or another some peoples mindset is focused on Desalination Plants, they may even believe that the best long term solution to provide water security for the Lower Hunter is to expand the proposed Desalination Plant to a larger scale, well they would need to rethink this and do their math's, (THBRWS)

proposal which is 50ML/d, lets compare some of the costs if they were the same size.

A 15 ML/d Desalination Plant = \$87 Million, divided by 15 = 5.8 per ML

Therefore a 50 ML Desalination Plant would be approximately \$290 million.

Operating costs to provide 50 ML/d from a Desalination Plant.

Costs at \$1 per kL per year, $\$50,000 \times 365 = \$18,250,000$ per annum.

Costs at \$4 per kL per year, $\$200,000 \times 365 = \$73,000,000$ per annum.

(THBRWS) Water Exchange Option.

Operating costs to transfer 50 ML from the Burwood Treatment Plant to the Power Station or Mining sector. = just over \$2 million dollars per annum.

See pages 14 and 15 in Scheme 1.

Costs to treat this water to be suitable for the Power or Mining Sector.

This water has already had Secondary Treatment, costs would be minable, water would not need to be of a potable grade to service both of these industries.

It will also operate every day resulting in water banking (see page 10 Scheme 1)

All Desalination Plants around Australia are mothballed when Dam level are high, Simply because they are far too expensive to run.

The above costs of between \$18,250,000 to \$73,000,000 per annum to operate Desalination compared to the (THBRWS) just over \$2million per annum for this water exchange system.

Think of the money NSW and the Hunter will save by not proceeding with a totally unnecessary Emergency 15 ML/day Desalination Plant at Belmont.

On page 96 in Scheme 2 titled " Project Measured in Dam Numbers," this is combining North Head and the Burwood Treatments Plant, to 450 ML/day, both having Secondary treatment, look at the figures, 1 year, 10 years and 50 years.

This water proposal and these projected figures is of National Importance, to attract attention for this much needed water source, I will be sending both projects along with this letter to our State and Federal Water Ministers, other relevant politicians on all sides, the Mining Sector and the media.

Looking forward to your reply

Regards

Joseph Taranto

Manager

Universal Water Recycling

