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Greg Watkinson
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Dear Greg

**Re: Inquiry into the Cost of Supplying Bulk Potable Water to Kalgoorlie-Boulder
– Public Submission of Avoidable Costs paper**

We attach the above-captioned paper on Avoidable Costs, as these relate to the Water Corporation. This paper has been prepared for UUA by ACIL Tasman. It provides additional analysis of the issue of Water Corporation's avoidable costs.

The paper considers the information advantage of the Water Corporation in relation to avoidable costs and proposes corroborative calculations. The avoidable cost of growth water is also considered. A number of additional issues are discussed in relation to Water Corporation's data.

We note that the avoidable cost calculation is not the sole consideration in assessment of purchase price for bulk water from this or any equivalent project.

The key conclusions of the paper are:

- That Water Corporation's incremental cost of servicing growth water is in the order \$4.52/kL, substantially higher than \$2.14/kL under the scheme proposed by UUA.
- That Water Corporation's current pricing arrangement therefore impedes growth.
- Water Corporation's avoidable costs could be substantially higher to those quoted in the ERA draft report, with independent analysis suggesting avoidable costs is in excess of \$3.00/kL.

Yours sincerely,



Phil Endley
Project Manager - Goldfields Water Supply Project
United Utilities Australia

Goldfields Water Supply Project – Avoidable Cost

Summary:

The Key Conclusions of this paper are:

- Water Corporation's incremental cost of servicing growth water is in the order \$4.52/kL, substantially higher than \$2.14/kL under the scheme proposed by UUA.
- Water Corporation's current pricing arrangements impedes growth in the region as most of the new industrial users are required to pay water at \$4.52/kL because the CSO arrangements are not available to such users. This contrasts to \$2.14 /kL under UUA's proposed scheme.
- Water Corporation's avoidable costs could be substantially higher to those quoted in the ERA draft report, with independent analysis suggesting avoidable costs is in excess of \$3.00/kL.

Background

The draft ERA report states that any new bulk water supply contracting to deliver water to the Water Corporation should be based around Water Corporation avoidable costs. We have argued in our previous briefing note a range of reasons – relating to market and regulatory failure – as to why this conclusion is not well-based. The conclusion does not follow from the recognition of sunk costs (with which we agree), especially because of the way that these sunk costs act to protect an artificially high system incremental cost that forms the basis for pricing to industrial uses.

That said, avoidable costs are appropriately a key part of the decision process.

One of our key concerns is the extent to which the information on which avoidable cost estimates are made available by the Water Corporation. We acknowledge the Water Corporation's interests are likely to include protecting its monopoly position as well as sourcing water at least cost. Avoidable cost is not easily pinned down and we have observed through the inquiry process quite significant shifts in a number of the cost elements.

Figure A in the draft report sets out the avoidable cost estimates used by ERA. Costs that fall to Water Corporation as a result of G&AWS system expansion and operation to meet the demand profile (rising to 77ML/d in 30 years and then flat) total \$566.6m (50 years @ 6%). We estimate the PV of the corresponding volume time series to be 1,210ML/d, implying a levelised cost of \$2.12/kL. Notably this is below the UUA levelised cost figure of \$2.14/kL. Of course, both figures fall well short of commercial prices, and this would be true for both Water Corporation and UUA. Neither the discount rate nor the 50 years could be viewed as commercially realistic.

It is also worth calculating the implied levelised cost of the growth water, involving Figure A costs of \$399.9m. The PV of growth demand serviced by the G&AWS upgrade is estimated from the demand profile to be 242ML/d, implying an incremental cost for servicing growth of \$4.52/kL.

It is noteworthy that this figure is not quoted in the ERA report. However, it is highly pertinent to the analysis we have provided of the cost distortion flowing from the form of the CSO. The form of the arrangements does, in our opinion greatly and artificially increase the avoidable costs of economic growth and must depress this growth. The UUA proposal could be used to redress this cost penalty while preserving the CSO arrangements.

It is possible to calculate a broadly analogous incremental cost for servicing growth for UUA, based on the two versions of the model now available – one predicated on 2% Kalgoorlie growth and the other based on 3% growth. As was shown in our recent general briefing note on the draft report, the incremental cost of meeting the higher demand is modeled to be \$43.5m. The present value of the additional Kalgoorlie demand based on the Water Corporation demand series provided to UUA and the costs of meeting that demand, implies a levelised cost of \$1.01/kL. Of course, this is not indicative of indefinite growth and is reflective of incremental costs only after ignoring a block of costs that in this case have yet to be sunk. It does nonetheless highlight a major difference between the structure of avoidable costs between the G&AWS and the UUA approaches.

Ongoing incremental growth, pushing beyond the limits of the initial pipeline, is likely to be more reflective of the average costs of the UUA proposal, though we have not seen formal modelling of this.

In summary, the following can be deduced from the ERA report, taking the cost data at face value:

- UUA levelised cost of \$2.14/kL
- *Medium term* UUA levelised cost for growth water of about \$1.01/kL
- G&AWS levelised cost of \$2.12/kL
- G&AWS levelised cost for growth water of \$4.52/kL

Again we stress that these are estimates of levelised cost over 50 years at 6%, not estimates of commercial prices. They use the ERA data, and (with the exception of the UUA figure that is based on the new modelling to include the stronger Kalgoorlie demand growth) have not been adjusted for the range of factors we have identified that are likely to add to Water Corporation costs. This includes evidence of systematic Water Corporation bias in its cost estimation, with implications for both G&AWS upgrade costs and the source cost of water and the value of delivery risk hedging offered by UUA but not available from Water Corporation.

Issues

The above considerations show that avoidable cost, calculated *within the ERA paradigm* and based on the *ERA data*, suggests that Water Corporation average forward costs are below UUA project unit costs, though by only 1%. This situation arises out of a mix of very low costs of maintaining current supply (\$0.93/kL), very high costs of catering for growth (\$4.52/kL), and the fact that these very high growth costs effectively mean that the only growth will be in uses covered by the CSO, thus limiting the base to which the \$4.52/kL gets applied.

This contrasts with the UUA levelised cost figure of \$2.14/kL which is similar to the Water Corporation average, which involves satisfying a much larger block of demand, and which entails much lower levelised costs for growth.

With the adjustments set out in our earlier briefing, we believe there is solid indications for concluding that the proposed UUA strategy offers benefits well in excess of costs, after factoring in the benefits to mines, adjusted for the higher Kalgoorlie growth scenario.

Water Corporation avoided costs could be substantially higher than the above figures suggest. We observe that Water Corporation's future capital expenditure profiles on the G&AWS are little more than extrapolated estimates except of course for imminent or current expenditure. Reliance upon Water Corporation Board-approved budgets is inappropriate. Avoided costs would increase as a result of capital cost increases in either or both of G&AWS upgrades or meeting Perth supply. The Government is not in a position to hedge against such risks (ie, Government cannot avoid these costs and risks other than through the type of approach being offered by UUA).

We would see the key issue as being the 'fuzziness' inherent in avoidable cost estimation, especially for a system as complex as this one and with the level of joint costs involved in supplying the various markets. It is not in Water Corporation's interests to have its true avoidable costs revealed. Whether it sees itself as negotiating with UUA to supply water for no more than its avoidable cost, or it sees its monopoly supply position being threatened by the UUA proposal, Water Corporation's interests would seem to favour under- rather than exact or over-estimation.

This then leads on to the question of whether it is feasible to rely on commercial negotiation to deliver a project that is supported by the weighing of benefits against costs. We see significant impediments to such a negotiation, for reasons set out in our recent briefing paper, relating to a mix of regulatory and market failure.

Draft Water Supply Strategy – Insights

The inherent difficulties in outsiders pinning down avoidable cost estimates for the G&AWS is illustrated by the work done as part of the Draft Water Supply Strategy. ACIL Consulting worked with GHD and Stanton Partners to develop an assessment of true

costs, including avoidable costs, of the G&AWS, reporting in 2002. The analysts worked with Water Corporation data and arrived at an estimate of \$2.72/kL. This figure was based on a then specified discount rate of 4.3%, was calculated over 30 years and used a source cost estimate of \$0.80/kL, while noting that this was likely to fall in the range of \$0.80-\$1.06/kL.

Simple adjustment for inflation since then, applied to the non-source cost component, with ERA source costs then added in, would suggest a number somewhat in excess of \$3/kL now.

The report discussed a range of interpretations of avoided cost, and the measure behind the \$2.72/kL differs in significant ways from that discussed above. We would not argue for leaping to this figure as the appropriate one. However, this experience does point to the volatility in these avoidable cost estimates, again highlighting the powerful position of those controlling the data.

Negotiation and pricing

Finally it is noted that the commercial purchase price for bulk water should be based upon more than the avoidable cost.

Pricing considerations for Western Australia will include:

- The value of diversification of water sources and certainty of supply
- The value of an alternative water supply to Kalgoorlie-Boulder
- Risk transfer from Government to the private sector
- The certainty of delivery pricing
- Impacts upon the current subsidy received by the Water Corporation