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Submission on Murrumbidgee Irrigation Automation Finalisation Project

The Murrumbidgee Irrigation Automation Finalisation Project claims water savings at nearly $20,000 per megalitre. It would use 8% of available funding to recover just 1.4% of the required water. Even then, claimed water savings appear dubious.

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Summary

Murray Darling Basin Governments are attempting to recover 450 gigalitres (GL) of water through off-farm water efficiency projects, with almost $1.6 billion in funding, or an average of $3,500 per megalitre.

Murrumbidgee Irrigation (MI) has put forward a proposal that would recover 6,282ML at a cost of $124 million. This equates to $19,739 per megalitre of water returned to the environment, six times the average needed to achieve the 450GL, ten times the likely cost of buying the water from willing sellers and three times more that previous MI projects.

Another way of looking at the proposal is that it would use 8% the available funding to recover about 1.4% of the water.

The project documentation is not transparent. Neither the cost or water savings estimates come with any calculations or references. It is not explained how these figures have been arrived at, how they will be verified and audited into the future.

Worse still, the authenticity of savings is questionable. Water savings can only be genuine if infrastructure owners were not going to undertake the investment without the policy's assistance. The proposal documents make it clear that MI "has begun delivering the program of works".

Even if additional, it is unclear how various automation proposals actually save water.

Part of the proposal is to build a new dam. It appears that this could actually increase consumptive use of water, by diverting "river operational losses" that currently flow down the river. The dam may also divert floodwater and other unregulated flows. The project documentation states that the project could "potentially expand the irrigation footprint."

Under agreed criteria for efficiency projects, information must be clear, simple and transparent. Projects must deliver real water savings. The MI proposal fails on all these fronts and should not receive funding.

Introduction

The Australia Institute welcomes the opportunity to make a submission on the Murrumbidgee Irrigation (MI) Automation Finalisation Project proposal for funding under the Off-farm Water Efficiency Program. We oppose funding this project as its purported water savings do not represent value for money, if they even exist.

It is widely acknowledged that too much water is extracted for irrigation in the Murray-Darling Basin, to the detriment of downstream water users, river and floodplain health. To redress this, the Commonwealth committed $13 billion to water reforms, including the Murray-Darling Basin Plan. Under the Murray-Darling Basin Plan, the Commonwealth government is required to recover 2,750 gigalitres (GL) of water from productive use for the environment as well as an additional 450GL acquired through efficiencies.[1]

The most efficient, secure and cost-effective way to recover this water would be to buy it from willing sellers. However, many stakeholders, including the Commonwealth Government, oppose such 'buy-backs' on the grounds that they are economically harmful to communities in the Basin. The Commonwealth instead prefers recovery via efficiency projects that aim to create water savings by making irrigation network infrastructure more efficient. The Commonwealth funds the project in return for a share of the water savings from the project.

Despite controversy over whether efficiency programs actually result in water savings and a lack of evidence of economic harm from buy-backs, this position has hardened into government policy. The Commonwealth's Water Efficiency Program (WEP), funded through the Water for the Environment Special Account (WESA), is expected to recover the 450GL.

At the inception of the WEP two types of projects could be funded, on-farm and off-farm efficiency projects. In March 2021 the Federal Water Minister, Keith Pitt discontinued the on-farm water efficiency portion of the program:

> The WEP has recovered just 0.2GL since 2019 - that's 0.04% of the 450GL target of additional water for river health outcomes that out government is committed to recovering. We are closing the program and replacing it with a new approach that will focus the more than $1.5 billion available in the Water for the Environment Special Account on securing water by improving the efficiency of off-farm irrigation infrastructure.[2]

[1] Commonwealth (2018) *Basin Plan 2012,* https://www.legislation.gov.au/Details/F2012L02240

[2] Sullivan and Long (2021) Murray Darling Basin Plan's on-farm Water Efficiency Program axed by government, https://www.abc.net.au/news/2021-03-03/murray-darling-basin-on-farm-water-program-canned/13210554

Despite apparently acknowledging the failure of on-farm efficiency projects to recover water, the Government response has not been to return to buy-backs, but to double down on off-farm efficiency projects. However, off-farm efficiencies have also been sought, and funded, for years. Any easy water recovery via off-farm projects has been realised long ago. As a result, proposals are likely to be expensive and offer little serious water recovery. Even with this background, the MI automation project is stunningly expensive, seemingly offers little real water recovery and should not be funded.

Criticism of MI proposal

COST

The MI proposal is for $124 million to obtain 7,390ML of water savings, 6,282ML of which would be directed to the Commonwealth for environmental water. This equates to $19,739 per megalitre of water returned to the environment.

To call this expensive water would be an understatement. Previous projects undertaken by MI, funded by the Commonwealth, were estimated to save 56,323ML at a total cost of $345 million, or $6,125 per megalitre.[3] Simply buying water back from willing sellers costs around $2,000 per megalitre.[4]

The MI proposal represents a cost ten times greater than simply buying back the water.

Beyond the simple expense, another point to consider is that at $124 million, this project would use 8% the WESA funding to recover about 1.4% of the required 450GL. The first review of the Water for the Environment Special Account found;

> The total funds available for both constraints and supply projects from all sources is broadly in line with the current estimate of their total cost.[5]

In short, the independent review found that there should be enough money in the fund if money is used appropriately, and purchases savings at an average of $3,500 per megalitre. The MI proposal is nearly six times more expensive and if funded, it will make it more difficult to achieve the overall policy goal of recovering 450GL with the existing funds.

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[3] Department of Agriculture, Water and the Environment (2020) *Private Irrigation Infrastructure Operators Program in New South Wales*, https://www.agriculture.gov.au/water/mdb/programs/nsw/piiop-nsw

[4] Crase (2019) *Australia's 'watergate': here's what taxpayers need to know about water buybacks*, https://theconversation.com/australias-watergate-heres-what-taxpayers-need-to-know-about-water-buybacks-115838

[5] Australian Government (2020) First Review of the Water for the Environment Special Account, p.3 https://www.agriculture.gov.au/sites/default/files/documents/first-review-water-for-the-environmentspecial-account.pdf

TRANSPARENCY

Neither the cost or water savings estimates come with any calculations or references. It is not explained how these figures have been arrived at, how they will be verified and audited into the future.

This lack of disclosure is particularly concerning given the long history of controversy over whether water savings are actually realised and criticism of water recovery programs for not delivering, or even adequately assessing, value for money.[6]

AUTHENTICITY OF SAVINGS

Government investment in water efficiency can only create genuine water savings if the investment was not going to be made by the owners of the infrastructure without government intervention. If MI would have made the same or similar investment without government then there is no genuine water saving.

Based on the MI proposal, it is not clear that these savings are genuine and additional. The proposal makes clear that MI has already started this phase of its automation stage, stating:

> Project planning is well advanced, and MI has begun delivering the program of works by self-funding $15M of automation. These works will be completed in September this year with procurement for the 2022 program to commence in November.

Based on the proposal documents, it appears that MI will undertake this investment without government assistance. While government subsidy might see the projects completed sooner, this results in only a short term water saving.

Beyond whether this funding would result in anything other than an acceleration of investment, the proposal documents do not explain how the proposed automation would save water. The proposal states:

> The full automation of our system optimises our water delivery. It enables us to provide higher and more reliable system flow rates, improved system efficiency, reduced operating costs and greater customer flexibility which is now required to meet on farm irrigation modernisation and crop water demands.

It goes on to state:

[6] See for example Rubinsztein-Dunlop (2019) Cash Splash, https://www.abc.net.au/4corners/cash-splash/11289412; ANAO (2020) Procurement of strategic water entitlements, https://www.anao.gov.au/work/performance-audit/procurement-strategic-water-entitlements

> [automation and higher flow rates] allows customers to reduce the number of access points (metered outlets) and hence reduce ongoing fixed charges associated with each metered outlet.

No explanation is provided as to how this would actually save any water, despite claiming almost 3,000ML in savings.

Even if automation of MI's network can provide savings, proposal documents show that this phase offers only marginal improvement. Table 1 in the project document shows that in the last decade 80% of its network has been automated. This phase will only increase this by 16%. Given the huge cost and the unclear nature of the savings, this marginal improvement does not appear to be a worthwhile investment by the taxpayer.

NEW DAM

Counter intuitively for a policy designed to reduce water use, the MI proposal includes construction of a new dam. The question of whether it is even possible for a new dam to save water has been discussed in Senate Estimates and other forums.[7]

Based on the project documents, even the hypothetical situations under which a new dam can save water do not apply to the MI proposal. In particular, the proposal to divert "river operational losses" into the reservoir appear problematic. The project documents state:

> Water for the MIA is supplied by Burrinjuck and Blowering Dams in the upper Murrumbidgee catchment and is conveyed to the area by the Murrumbidgee River. MI faces major constraints with the current supply system primarily due to excessive travel time (7 days) along the river from the storages to the Main Canal offtake. MI has limited ability to respond to short term irrigation demand fluctuations during peak usage months and to sudden cancellation of orders following rain events. This results in a frequent mismatch between the volume of water released and that taken at MI's offtake. Where a portion of the ordered water is not diverted by MI, it is lost from the resource pool and contributing to river operational loses. On average every year 70GL of releases intended for MI are not taken at the offtake.

Based on the project documentation, it appears that the 70GL that MI describes as "river operational losses" contribute to more water being in the river system. Diverting this water seems to result in more water being diverted for irrigation and less water being in rivers. If this is the case it is wrong to count this as a saving, some of which can be returned to the environment as currently all of it is going to the environment.

[7] Slattery et al (2019) *Dam shame: The hidden new dams in Australia*, https://australiainstitute.org.au/report/dam-shame/

Similarly, page 9 states that the proposed reservoir will assist with “flood mitigation”. No details are provided, but if this refers to diversion of floodwater or other unregulated or supplementary flow (p9) into the reservoir, then this represents an increase in consumptive water use, not the decrease that should be being pursued.

The possibility of this project resulting in more water for consumptive use, not less, is highlighted in the project document:

> [The project aims to]… Increase the peak flow capacity of the network thereby providing additional opportunity to meet customer demand, improve on-farm irrigation efficiency and potentially **expand the irrigation footprint**. [Bold added]

Expanding irrigation is not the aim of the Basin Plan. Any proposals that result in expanded irrigation operations should not be considered for funding.

There is no discussion of evaporation losses from the proposed large, wide, shallow reservoir, however, they could be substantial, further eroding any purported water savings.

Conclusion

The MI proposal is hugely expensive, non-transparent and results in dubious water savings. As a result, it does not meet the criteria that Basin governments have agreed to for efficiency projects. These criteria include:

> 3. The project assessment for funding must be clear, timely, simple and transparent, and not unduly increase red tape.
>
> …
>
> 12. Projects must deliver real water savings and not result in profiteering or rorting.
> a. Projects must not allow participants to individually profit without creating water savings.[8]

While point 3. seems aimed at the application process, it should also apply to applicants. It is not clear or simple to see how this proposal results in genuine water savings. The estimates of cost and water savings are far from transparent, with basically no detail provided. This leads directly to point 12., that savings must be real, which is far from clear in this case. Whether the MI proposal amounts to profiteering or rorting is unclear, but it is certainly expensive and should be abandoned in favour of buying back water from willing sellers.

[8] DAWE (2018) *Efficiency Measures – Agreed Criteria*, https://haveyoursay.awe.gov.au/water-efficiency