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Desperate Measures

Supply measures, diversion limits and the Murray-Darling Basin Plan

A proposed amendment to the Murray-Darling Basin Plan would use 'supply measures' to change the Sustainable Diversion Limits and increase water use by irrigation. The proposed supply measures are inconsistent with the Basin Plan and likely to be unlawful.

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Summary

A proposed amendment to the Murray Darling Basin Plan looks to allow irrigators to use more water. It would change the limits on the amount of water that can be taken from each river, known as the Sustainable Diversion Limits (SDLs).

Under the Basin Plan, the SDLs can be adjusted, unless disallowed by Federal Parliament. The Australian Senate will soon vote on whether to disallow these changes to the Basin Plan. The SDL amendment should be disallowed. This paper outlines major flaws in the statutory calculation of the adjustment to the SDL.

The SDLs are more than how water is shared between irrigation and the environment. They create a statutory basis for water licences, which are financial assets. Banks lend to, and shareholders invest in, irrigation businesses based on their net assets, which include water licences. This means water licences affect the cost and availability of finance to the irrigation industry. Parts of the finance sector have an exposure to water licences. If SDLs are based on anything other than robust, credible and defensible numbers, there are risks to irrigation businesses, the environment, and also the financial sector.

The Basin Plan allows an SDL adjustment based on 'supply measures'. A supply measure aims to achieve the same environmental outcome as under the original Basin Plan, but using less water. For example, a levee bank could be built around a wetland. Water can be pumped into the wetland instead of travelling over the floodplain. This means that less water is required to inundate the wetland. The reduction in environmental water could then be used by irrigators.

The Basin Plan includes a robust method to ensure that the adjustments to the SDLs arising from supply measures are genuine and not simply an opportunity to re-prosecute the SDLs. This is important to ensure the integrity of the SDLs is maintained.

The first step is the statutory hydrological model that was used for the Basin Plan (the benchmark model) is adjusted to include the supply measure, without any other changes.

Next, the benchmark model needs to be adjusted for 'unimplemented policy measures'. The benchmark model assumes that particular policies have been implemented to ensure environmental water is used effectively. If these policies have not been implemented, the benchmark model needs to be adjusted to ensure it

reflects the actual policy situation. Without the unimplemented policies in place, much more water is required to achieve the same environmental outcomes.

The outputs from the benchmark model and the supply measure model are then compared against two criteria.

The first is 'equivalent environmental outcomes'. Hydrological indicators (such as flow height and duration) are surrogates for environmental outcomes. Equivalent environmental outcomes are assessed as being met when an algorithm of the hydrological outputs of the two models are deemed as equivalent.

The second condition is that the reliability of supply to other water users must not be reduced without some type of mitigation.

These requirements are clearly set out in the Basin Plan. Unless they are met, any adjustment to the SDLs is unlawful. At least two of the supply measure projects in the current amendment clearly do not meet these requirements, are likely to be unlawful, and should be disallowed.

The first is the Menindee Lakes project in western NSW. The Darling River flows into the Lakes, and the lakes flow out to the Lower Darling River. The proposal is to reconfigure the lakes to reduce evaporation; reduce water available for irrigation in the Lower Darling; and provide an alternate water supply to Broken Hill from the River Murray. The Murray Darling Basin Authority (MDBA) has not adjusted modelling for unimplemented policy measures, confirmed in correspondence with The Australia Institute. In other words, there may not be any water to be 'saved' by this supply measure. MDBA modelling also shows a detrimental effect on reliability from the proposed measure. Aside from the major agribusiness at Tandou Station, affected water holders have not received any kind of offset, compensation, or structural adjustment.

The second is the Enhanced Environmental Water Delivery project, which aims to produce the same environmental outcomes with less water by changing the timing of environmental releases and improving the administration of environmental water. This project is, in effect, an unimplemented policy measure. It is not a supply measure per se. Including an unimplemented policy measure, already assumed in benchmark modelling, as a supply measure is double counting, not a water saving. This project also includes changes to the benchmark model that are in addition to the supply measure because it uses a different environmental flow demand series. This is clearly not in line with the Basin Plan's current legislation and regulations.

These two projects account for up to around 300 gigalitres of the 605 gigalitres of the claimed savings that the amendment aims to divert to production. There are another 34 projects that are likely to have similar shortcomings, claiming to deliver water on paper, but unlikely to deliver anything in the real world. Tellingly, none of the business cases for these projects have been released to the public, or even to the Senate.

The legislated method to adjust the SDLs is robust to maintain the integrity of the SDLs and underlying water licences. However, the adjustment to the SDL does not comply with the legislation. The amended SDLs undermine the financial security of all water licences and increase risk for the financial sector that is exposed to water. The Senate should disallow the amendment.

Introduction

The Murray Darling Basin Plan was legislated in 2012 to guide the sustainable use and management of water in the Murray Darling Basin. The Plan put limits on the amount of water that could be used in each valley and in the Basin as a whole. These 'sustainable diversion limits' (SDLs) are a key part of the Plan.

An SDL of 10,873 gigalitres (GL) was set for the whole Basin. This is 2,750 GL less than pre-Basin Plan levels, a reduction in water that can be extracted of around 25 percent. The reduction in use is referred to as the 'water recovery target'.

Under the Basin Plan, the SDLs can be adjusted through 'supply measures'. Supply measures aim to achieve the same environmental outcome as the original Basin Plan, but using less water. For example, a levee bank could be built around a wetland. Water can be pumped into the wetland instead of travelling over the floodplain. This means that less water is required to inundate the wetland. If these kinds of projects can show an 'equivalent environmental outcome' and no impact on reliability of water licences, the Basin Plan allows for a reduction in the water recovery target and an increase in the SDL. That is, an increase in the amount of water that can be used for irrigation.

Because the Basin Plan is Commonwealth legislation, changes to the SDLs can be disallowed by Federal Parliament. The Senate is currently considering a proposed amendment to the Murray-Darling Basin Plan, to increase the SDL in the southern Basin, increasing water use by irrigation, by 605 GL. The proposed amendment is based on 36 supply measure projects identified by the states and the Murray Darling Basin Authority (MDBA). Up to half of the water savings come from just two projects.

The Australia Institute has prepared this report from papers released to the Senate under an Order for Production of Documents requested by Senator Rex Patrick. We are also aware of the contents of two business cases, which make up to 50% of the proposed amendment. These are the Menindee Lakes Water Savings Project and the Enhanced Environmental Water Delivery project. Based on our reading of the Basin Plan (2012), these projects are unlawful.

There is also a paucity of information available to the public and our parliamentarians. For example, although the supply measure business cases are the basis of the amendment, the MDBA has not made any of these available. This has led to many unanswered questions about the projects, some of which we have identified in this report. The public and our parliamentarians have insufficient information to judge whether the amendments are justified.

Sustainable Diversion Limits

The SDLs are more than how water is shared between irrigation and the environment. They create a statutory basis for water licences, which are financial assets. Banks lend to and shareholders invest in irrigation businesses based on their net assets, which include water licences. So, water licences affect the cost and availability of finance to the irrigation industry. Parts of the finance sector have an exposure to water licences. If SDLs are based on anything other than robust, credible and defensible numbers, there are risks to irrigation businesses, the environment, but also to the financial sector.

SUSTAINABLE DIVERSION LIMIT ADJUSTMENT MECHANISM

The Murray-Darling Basin Authority (MDBA) can recommend an amendment to the SDLs under Chapter 7 of the Basin Plan.[1]

- Starting with the statutory **benchmark model run**;
- Adding the **supply measure** without any other changes; and
- Subtracting any **unimplemented policy measures**

And ensuring that compared with the benchmark model run, that there are:

- **Equivalent environment outcomes**; and
- No detrimental **impact to reliability** that have not been offset or negated. [2]

[1] In particular, see Basin Plan, (2012), s7.15. Chapter 7, Division 4 sets out the steps the Authority must take to determine the adjustment amount resulting from a supply measure. The method to calculate the adjustment from a supply measure is set out in Schedule 6 of the Basin Plan. Relevant extracts from Chapter 7 and Schedule 6 are shown at Appendix A.

[2] Basin Plan, (2012), s7.15

Benchmark model run

The benchmark model run is the statutory hydrological model that was used to set the SDLs under the Basin Plan.[3] The benchmark model also uses an environmental demand time-series to simulate how much water is needed for the environmental goals under the Basin Plan.[4] That is, there is a specific method to determine releases made for environmental water demands.

The benchmark assumed that environmental water was used as effectively as possible. This was to minimise how much water was taken from production while still achieving environmental outcomes. That effective use of environmental water was assumed through two key policies, called anticipated policy measures, because they were anticipated to be implemented 2019. If not implemented, they become 'unimplemented policy measures', and much more water is required to achieve the Basin Plan outcomes. So, the Basin Plan includes a provision to adjust the benchmark model run, for unimplemented policy measures. These 'unimplemented policy measures' are further discussed below.

Comparison of supply projects

To compare the impact of the supply measure, a model run with the proposed project added to the benchmark model run is developed. The Basin Plan specifies that the comparison model should only include the supply proposal, without any other changes, to ensure that there was a like for like basis against the benchmark.

Like any kind of model, hydrological models are merely representations of reality and can always be improved. The hydrological models of the Murray Darling Basin are always being updated to reflect new data and research. However, it is important that model improvements are not used as a justification to change the SDL. Otherwise different environmental outcomes may have been demonstrated by simply a change in an underlying modelling assumption, which do not represent the proposed project or any other real world changes. For this reason, the benchmark model is compared against a model run with the supply measure. This is explicit in the Basin Plan:

[3] Basin Plan, (2012), Schedule 6, s6.02

[4] MDBA, (2012), *Hydrological modelling to inform the proposed Basin Plan: Methods and results,* https://www.mdba.gov.au/publications/mdba-reports/hydrologic-modelling-inform-proposed-basin-plan-methods-results

Hydrological modelling under the method to establish a supply contribution will start with the benchmark environmental flow events and these will only be modified as necessary to reflect the outcomes of the proposal and potential supply contribution.[5]

That is, the supply measure cannot use a different environmental flow demand method to that used in the statutory benchmark model run.

Unimplemented policy measures

As mentioned above, the benchmark hydrological modelling assumes that two policies have been implemented to ensure environmental water is used effectively. The Basin Plan describes the two anticipated policy measures are to:

- *credit return flows for downstream environmental use; and*
- *allow the call of environmental water from storage during unregulated flow events.*[6]

The first anticipated policy measure, the credit of return flows for downstream environmental use, is an administrative technique to recognise environmental water at multiple locations in the river. It is also referred to as 'the protection of environmental water' or 'shepherding'. This facilitates the delivery of environmental water throughout a river, without it being extracted by other users. The policy intent of crediting return flows is to allow environmental water to flow along a river and be protected from extraction. This measure also ensures that the Commonwealth investment in environmental water does not simply become a subsidy for other water licence holders, whose financial asset would otherwise be enhanced if they could legally extract and irrigate with the Commonwealth's environmental water.

The second anticipated policy measure is the release of environmental water from a storage during unregulated flows. The MDBA explains that unregulated flows:

[5] Basin Plan, (2012), Schedule 6, s6.06(3)

[6] Basin Plan 2012, s7.15(2) (b)

refer to water in the river which is in addition to anticipated water orders associated with entitlement and other commitments, and which cannot be captured downstream. In some places it may be uncontrolled flows above regulated flows, but at many places it can just mean flows that cannot be captured by a regulatory structure.[7]

Unregulated flows are a result of rainfall and can be caused by inflows that cannot be captured; intentional dam releases to mitigate subsequent flooding; or a dam spilling.

If these policies have not been implemented, the benchmark model needs to be adjusted for the 'unimplemented policy measures'.[8]

Where these policies are not in place, SDL volumes need to be reduced. This is because more environmental water is required to achieve the same environmental outcomes.

The anticipated policies have significant implications for the SDL volumes. The MDBA estimated that more than an additional 1,250 GL is required to achieve the Basin Plan environmental outcomes if the anticipated policy measures were removed from the benchmark model run.[9] Without the anticipated policies in place, more than twice the potential total SDL adjustment is required just to achieve the outcomes in the benchmark model and the justification for the Basin Plan.

The Basin Plan outcomes cannot be achieved without the anticipated policy measures, because the latter are assumed in the benchmark model run. Anticipated policy measures that are not implemented by 2019 are called 'unimplemented policy measures' in the Basin Plan. [10,11] The SDL adjustment mechanism specifies that the unimplemented policy measures are removed from the benchmark model run when calculating the supply contribution.

[7] MDBA, (2013), *Constraints Management Strategy,* https://www.mdba.gov.au/publications/mdba-reports/constraints-management-strategy

[8] These are also referred to as 'Pre-requisite policy measures'

[9] MDBA, (2014), *Constraints Management Strategy annual progress report 2013-14,* https://www.mdba.gov.au/sites/default/files/pubs/CMS-Annual-Report-09Dec14.pdf

[10] Basin Plan, (2012), s7.15

[11] The unimplemented policy measures are also known as 'unimplemented Pre-Requisite Policy Measures'.

Equivalent environmental outcomes

Once the benchmark model is adjusted for the supply measure project and the unimplemented policy measures, the model outcomes need to demonstrate equivalent environmental outcomes between the benchmark model run and the supply measure model run. This is outlined in Schedule 6 of the Basin Plan.

Under the environmental equivalent test, hydrological indicators (such as flow height and duration) are surrogates for environmental outcomes. An algorithm of the hydrological indicators produces a score for each model. Equivalent environmental outcomes are assessed as being met based on the comparison of the scores.

Impacts on reliability

The reliability of a supply of water to the holders of water access rights is both:

- how much water is allocated against a water license type over the long term. For example, a high security water licence might receive a long-term average annual water allocation of 95%; and
- how much an individual licence holder receives against that license. It is possible that reliability could be enhanced or diminished for an individual or group of licence holders, without changing the reliability of the total licence type.

The SDL adjustment for the supply contribution requires that there is no detrimental impact on reliability that has not been offset or negated. Compensation or a structural adjustment package, are examples of how a detrimental impact of reliability could be offset or negated.

Major supply measures

The Australia Institute understands that two projects make up to approximately 50% of the total 605 GL supply contribution. The *Menindee Lakes Water Savings* project (Menindee project) is 106 GL and the *Enhanced Environmental Water Delivery* project (EEWD project) is approximately 200 GL. The Australia Institute contends that both of these supply measures are unlawful, because the adjustment is not calculated consistently with the steps in chapter 7 and/or the method in Schedule 6 of the Basin Plan.

MENINDEE LAKES WATER SAVINGS PROJECT

The proposed Menindee Project saves water by reconfiguring the Menindee Lakes system to save water lost through evaporation. The proposal includes:

- decommissioning Lake Cawndilla as a storage;
- increasing releases from Lake Menindee by enlarging the outlet; changing the Lake's management rules; and works and rules to manage higher flows in the Lower Darling ; and
- reducing the current demand on the Lakes by providing an alternate town water supply to Broken Hill and removing irrigated horticulture from the Lower Darling.

Why the Menindee SDL adjustment is unlawful

Any SDL adjustment arising from the Menindee Lakes project would be made unlawfully because:

- the benchmark model run was not adjusted for the unimplemented policy measures;
- there are detrimental impacts on reliability that have not been offset or negated.

Menindee unimplemented policy measures

The SDL adjustment based on the Menindee project has not adjusted for unimplemented policy measures, specifically the protection of environmental inflows into Menindee Lakes (credit of return flows). Environmental flows into Menindee Lakes are not currently protected from extraction into and throughout the Barwon-Darling River. The MDBA has identified this problem in the Barwon-Darling in the Northern Basin Review.[12] The MDBA's technical assessment of the Menindee Lakes Water Savings project states:

> *Protection of additional inflows from the northern basin under the Basin Plan needs to be addressed.*[13]

However, MDBA has not adjusted the benchmark model run for the unimplemented policy measure as required under the Basin Plan and discussed above. This was confirmed by the MDBA in correspondence with The Australia Institute:

> *Pre-requisite policy measures have been included in the modelling of the package of supply measure projects as part of the benchmark model.* [14]

This means that the benchmark model run included environmental water from the northern basin flows into and along the Barwon-Darling river and ultimately into Menindee Lakes. The benchmark model included an assumption that the environmental water was protected, which is described in the *Hydrological modelling to inform the proposed basin Plan: Methods and results,* which states:

> *The water recovery in the Barwon-Darling system was modelled by changing the threshold at which water can be pumped from the river. Threshold-change is a substitute for future shepherding of recovered water, but this approach ensures that total diversions for consumptive use are consistent with the SDL*[15]*.*

The long-term average inflow into Menindee Lakes under the benchmark model run is 143 GL per year. If the environmental flows are not protected, up to 143 GL should be removed from the benchmark model run, and could be greater than the proposed adjustment of 106 GL.

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[12] MDBA, (2016), *Northern Basin Review,* https://www.mdba.gov.au/publications/mdba-reports/northern-basin-review-report

[13] MDBA, (date unknown), *MDBA Analysis: Menindee Lakes Water Savings Project Phase Business Case,* Documents obtained under OPD no. 685

[14] Email from Philip Glyde dated 19 April 2018

[15] MDBA, (2012), *Hydrological modelling to inform the proposed basin Plan: Methods and results, https://www.mdba.gov.au/publications/mdba-reports/hydrologic-modelling-inform-proposed-basin-plan-methods-results*

The NSW Environmental Defenders' Office, on behalf of the Inland Rivers Network, advised MDBA that in their opinion the unimplemented policy measures should be included in the SDL adjustment calculation. The MDBA has adopted the position that the unimplemented policy measures do not apply to Menindee Lakes.

The MDBA's position on the Menindee Project is contradictory. On one hand it claims that the project can contribute to an SDL adjustment, but at the same time the project does not need to comply with all the provisions associated with such an adjustment. Given the importance of the project to the SDL amendment, it should be disallowed until the Menindee Project is assessed in line with the Basin Plan's full requirements.

Impacts on reliability from the Menindee project

The Menindee supply measure creates detrimental impacts on reliability, without measures to offset or negate that impact. The technical assessment of the Menindee project says:

> *The proposal does not fully address potential risks and impacts to downstream water users, including reliability of supply, water quality and interactions with planned environmental water.*[16]

The Australia Institute understands that the business case for the Menindee project explains that a key part of the supply measure is to remove high security irrigation (horticulture) and demand for Broken Hill's water supply. Impacts on high security water holders will need to be mitigated via a structural adjustment. We understand that the business case does not include any mitigation for other water holders, such as general security or stock and domestic licences. Nor does it include an alternate water supply for Pooncarie or affected stock and domestic water users.

The largest holdings of Lower Darling high and general security water licences were located at Tandou Station. Tandou received a generous structural adjustment package in June 2017, which included selling all its water holdings to the Commonwealth and the decommissioning of irrigation from that property.[17] However, at the time of writing, no other water holders have received an offer for a structural adjustment.

[16] MDBA, (date unknown), *MDBA Analysis: Menindee Lakes Water Savings Project Phase Business Case,* Documents obtained under OPD no. 685

[17] The Guardian, (October 2017), *$78m buyback of Darling water was nearly double its valuation,* https://www.theguardian.com/australia-news/2017/oct/26/78m-spent-on-darling-water-buyback-nearly-double-its-valuation

The Australia Institute understands that hydrological modelling of the Menindee project undertaken by the MDBA shows a detrimental impact on reliability for water licences in the Lower Darling.

Neither the Menindee business case, nor the MDBA's technical assessment provide any detail about how the impacts on reliability have been offset or negated.

ENHANCED ENVIRONMENTAL WATER DELIVERY PROJECT

The EEWD project is based on higher river flows and a different pattern of environmental water releases to the benchmark model run. It also includes improvements to the administration of environmental water.

The EEWD includes releasing water from storages during unregulated flows, based on 'hydrological cues'. Hydrological cues could be rainfall or the river reaching a certain height in a valley.

Why the EEWD SDL adjustment is unlawful

The SDL adjustment arising from the EEWD project has been made unlawfully because:

- The model run for the supply measure has altered the benchmark model for the supply measure in a way that is inconsistent with the allowable changes outlined under the Basin Plan.[18]
- The unimplemented policy measure to allow releases of environmental water is not adjusted in the benchmark model run, and instead is included as a supply measure.

Altering the benchmark model run for the supply measure

The hydrological modelling for the EEWD did not start with the environmental flow events method set out in the benchmark model run, and specified under Schedule 6 of the Basin Plan (see Comparison of supply projects). That supply measure effectively proposes triggers (such as rainfall) to make environmental releases, rather than environmental demands, which formed the basis of the benchmark model. This is inconsistent with the method outlined in Schedule 6 and inconsistent with every other supply measure.

[18] Basin Plan, (2012), Schedule 6, s6.06(3)

Unimplemented policy measure as a supply measure

Most importantly, the project includes the implementation of an anticipated policy measure – the environmental releases from dams during unregulated flow events. The anticipated measure should have been removed from the benchmark model run (reducing the SDL), rather than being included as a supply measure (increasing the SDL).

MDBA is responsible for assessing whether the States will implement the anticipated policy measures by 2019. Each State prepared an implementation plan for MDBA to undertake that assessment. MDBA has not made the implementation plans or their assessment publicly available. The Australia Institute has requested the implementation plans and MDBA's assessment via Freedom of information request.

Other concerns

This report has focused only on the legal process to base the amendment to the SDLs. There are many more concerns relating to the business cases for each supply measure, which also form the basis for the SDL adjustment. None of the 36 business cases have been made publicly available or available to Senators. The lack of transparency raises several other questions that need to be answered before our parliamentarians can be confident that this amendment is justified:

- Why haven't the business cases that describe the supply measure projects been publicly released or made available to parliamentarians?
- Why hasn't the MDBAs assessment of the unimplemented policy measures been publicly released or made available to parliamentarians?
- Will MDBA immediately publish the supply measure business cases and the assessments of the unimplemented policy measures?
- Are the projects consistent with the requirements under the *National Partnership Agreement for Implementing the Water Reform in the Murray-Darling Basin* and performance milestone 7, in particular?
- Which projects did MDBA develop or assist the States to develop?
- Where MDBA did develop supply measure projects, how has MDBA then maintained objectivity and independence in the operation of the SDL adjustment?
- The Menindee Lakes Water Savings project was prepared by Blackwatch Consulting, of which Brett Tucker is the Director. Brett Tucker was also a member of the independent expert panel commissioned by the MDBA to review the effectiveness of a package of Supply Measures projects. Was this appointment identified as a conflict of interest, and if so, how was that conflict of interest managed?
- The Menindee Lakes Water Savings project has reduced the reliability of water licences in the Lower Darling.
    a. What is the financial devaluation of those licences held by the Commonwealth Environmental Water Holder?
    b. How has this impact been mitigated for licences held by irrigators?

- There are provisions in the Water Act and Basin Plan, which require that there is no net reduction of planned environmental water. Planned Environmental Water is defined in the Water Act, and is typically a statutory or operating rule to provide water for the environment. If planned water is reduced, more water owned by the Commonwealth Environmental Water Holder is required to achieve the environmental outcomes under the Basin Plan.
    a. The Barmah-Millewa Environmental Water Allowance (BM-EWA) is planned environmental water under the Water Act.[19] The Australia Institute understands the *Operating rule change to the use of the Barmah-Millewa environmental water allowance* (BM-EWA) supply measure project proposes a restriction on the use of the BM-EWA.
    b. Additional Dilution Flows are planned environmental water under the Water Act, which are likely to be significantly affected by the Menindee project.[20]

What assessments have been undertaken to ensure that there will be no net reduction in planned environmental water for the BM-EWA and the Additional Dilution Flows?

- The MDBA and New South Wales are currently negotiating new volumetric values for environmental water. These are called Long Term Diversion Limit Equivalents (LTDLE) (and are also known as Cap factors).[21] Using different LTDLE rates will change the SDLs and the water recovery targets.
    a. What LTDLE rates were used in the supply measure projects?
    b. What are the LTDLE rates that are currently proposed?
    c. What are the new SDL and water recovery amounts per valley, based on the proposed LTDLE rates?
- Have there been any referrals to the Commonwealth Minister of the Environmental under the Environmental Protection and Biodiversity and Conservation Act for projects that:
    a. May pose an impact on threatened species?
    b. Impacts a site listed under the Ramsar convention?

[19] MDBA, (2017), *Objectives and Outcomes for River Operations in the River Murray System*, https://www.mdba.gov.au/publications/mdba-reports/objectives-outcomes-river-operations-river-murray-system

[20] MDBA, (2017), *Objectives and Outcomes for River Operations in the River Murray System*, https://www.mdba.gov.au/publications/mdba-reports/objectives-outcomes-river-operations-river-murray-system

[21] Cap factors are explained in The Australia Institute's report called *Ít's not the science, it's how you use it*'. http://www.tai.org.au/content/its-not-science-its-how-you-use-it

Conclusion

The Australian Senate is currently considering a proposed amendment to the Murray-Darling Basin Plan, to increase the level of extraction for irrigation by 605 GL. This amendment is based on 36 supply measures projects that aim to use less water to achieve equivalent environmental outcomes to the original Basin Plan.

The SDLs are more than how water is shared between irrigation and the environment. They create a statutory basis for water licences, which are financial assets. Banks lend to and shareholders invest in irrigation businesses based on their net assets, which include water licences. So, water licences affect the cost and availability of finance to the irrigation industry. Parts of the finance sector have an exposure to water licences. If SDLs are based on anything other than robust, credible and defensible numbers, there are risks to irrigation businesses, the environment, but also to the financial sector.

MDBA can recommend an adjustment to the SDLs, based on a prescriptive and robust method that is set out in the Basin Plan. The SDL adjustment method ensures the integrity of underlying water licences.

Two of the supply measure projects contribute nearly up to 50% of the total proposed adjustment – the Menindee Lakes Water Savings project and the Enhanced Environmental Water Delivery project.

The Australia Institute contend that both of these supply measures are unlawful, because the process used is not consistent with the adjustment method set out in the Basin Plan. The Basin Plan is a legal document and its provisions do not provide for SDL adjustments based on some of its conditions being met and others that may possibly be met at some later time.

The SDL adjustment arising from the Menindee Lakes project has been made unlawfully because:

- the benchmark model run was not adjusted for the unimplemented policy measures;
- there are detrimental impacts on reliability that have not been offset or negated.

The SDL adjustment arising from the EEWD project has been made unlawfully because:

- the model run for the supply measure has altered the benchmark model for the supply measure in a way that is inconsistent with the allowable changes outlined under the Basin Plan.[22]
- the unimplemented policy measure to allow releases of environmental water is not adjusted in the benchmark model run, and instead is included as a supply measure.

The MDBA estimated that more than an additional 1,250 GL is required to achieve the Basin Plan environmental outcomes if the anticipated policy measures were removed from the benchmark model run.[23] That is, the potential total adjustment to the SDL could be completely eliminated if the anticipated policies are not implemented.

Business cases for each supply measure form the basis for the SDL adjustment. None of the 36 business cases have been made publicly available or available to Senators. The lack of transparency raises several other questions that need to be answered before our parliamentarians can be confident that this amendment is justified.

The legislated method to adjust the SDLs is robust to maintain the integrity of the SDLs and underlying water licences. However, the adjustment to the SDL does not comply with the legislation. The amended SDLs undermine the financial security of all water licences and increase risk for the financial sector that is exposed to water. The Senate should disallow the amendment.

[22] Basin Plan, (2012), Schedule 6, s6.06(3)

[23] MDBA, (2014), *Constraints Management Strategy annual progress report 2013-14,* https://www.mdba.gov.au/sites/default/files/pubs/CMS-Annual-Report-09Dec14.pdf

Appendix A: Basin Plan extracts

S7.02

anticipated measure means a measure that is part of the benchmark conditions of development.

benchmark conditions of development means the conditions of development that were assumed in the benchmark model described in Schedule 6 when the model was used to set the unadjusted SDLs for the Basin Plan.

Note 1: These conditions include the infrastructure, rules and practices that were assumed in the benchmark model, including certain measures that were not yet in effect but were expected to be in place by 2019, including as a result of investments that the Commonwealth is committed to funding and are expected to recover the equivalent of at least 600 GL of water per year.

Note 2:The Authority will, in consultation with the Basin Officials Committee, prepare and publish a report detailing the benchmark conditions of development as soon as practicable after the Basin Plan is made.

benchmark environmental outcomes has the meaning given in subsection 7.15(2).

7.15 Contribution to adjustments from supply measures

(1) Subject to this Division, the total ***supply contribution*** of the notified measures is the total increase in the SDLs for all the units affected by notified supply measures that will ensure that, calculated in accordance with the applicable method on the basis of:

(a) a repeat of the historical climate conditions; and

(b) the benchmark conditions of development modified by:

(i) the addition of the notified supply measures; and

(ii) the removal of any unimplemented policy measures;

the following results occur, as compared with the benchmark environmental outcomes:

(c) there are equivalent environmental outcomes; and

(d) there are no detrimental impacts on reliability of supply of water to the holders of water access rights that are not offset or negated.

Note: The determination is based on the effect that the supply measures will have when they come into operation, whether or not they have done so by 30 June 2016.

(2) In this section:

applicable method means:

(a) the default method set out in Schedule 6; or

(b) if the Authority and the Basin Officials Committee agree to use another method—that method.

benchmark environmental outcomes means the environmental outcomes in the model that, in accordance with the applicable method, would be achieved if:

(a) the SDLs were at the levels set in the Basin Plan when it commenced; and

(b) the benchmark conditions of development applied in the Murray-Darling Basin.

unimplemented policy measure means an anticipated measure consisting of a policy to:

(a) credit environmental return flows for downstream environmental use; or

(b) allow the call of held environmental water from storage during un-regulated flow events;

to the extent, if any, that the measure, at the time of the determination, is not expected to, or did not, come into effect by 30 June 2019.