MDBA Analysis:
2011 Snowy Water Licence Schedule 4 Amendments to River Murray Increased Flows (RMIF) Call Out Provisions Business Case

Proponent: NSW

The Murray-Darling Basin Authority's (MDBA) advice addresses criteria from the Basin Officials Committee agreed *Phase 2 Assessment Guidelines for Supply and Constraint Measure Proposals.* The Guideline section reference is shown in brackets.

Key identified issues:

- The business case should include an assessment of the proposal's anticipated ecological benefits consistent with the level of information provided to support business cases for other rule change proposals.
- More regard should be given to risks and treatments associated with potential downstream water quality degradation under RMIF callout operation, with reference to S/NZS ISO31000:2009 Risk Management Principles and Guidelines.
- NSW will be required to amend the Water Sharing Plan for the NSW Murray and Lower Darling Regulated River Water Source 2016 to reflect the proposed state RMIF entitlement.
- The proposal also impacts the Bulk Entitlement (River Murray – Goulburn-Murray Water) Conversion Order 1999 and the Bulk Entitlement (River Murray - Flora and Fauna) Conversion Order 1999. These plans are recognised as transitional plans, including any amendments made up until 3 March 2008. These plans were amended in May 2014 to establish the RMIF entitlement, however these amendments have not been presented to the MDBA for accreditation as part of the transitional plans.

1. Eligibility (3.1)

1.1. Supply measure definition (3.1.1)

The proposal would meet the definition of a supply measure under the Basin Plan (cl.7.03 and cl.7.15) to:

- operate to increase the quantity of water available to be taken in a set of surface water SDL resource units compared with the quantity available under the benchmark conditions of development;
- achieve equivalent environmental outcomes with a lower volume of held environmental water than would otherwise be required; and
- have no detrimental impacts on reliability of supply of water to holders of water access rights that are not offset or negated — noting that a final determination will require MDBA modelling, and that effects on reliability are determined by the proponent.

1.2. Measures not included in the benchmark conditions of development (3.1.2)

The measure was not in the benchmark conditions of development (cl.7.02 of the Basin Plan).

2. Ecological values of the site (4.2)

The business case's approach to ecological values is adequate. It effectively provides no description of the ecological values of environmental assets in the Murray system potentially affected by the proposal, however this is because the ecological values to be targeted are well understood.

The general intent of the proposal is described as being able to utilise RMIF call out provisions (as part of TLM's environmental water portfolio) to better target environmental outcomes downstream of Hume Dam. It is noted that the important values of the sites are well known and have been extensively described in readily available documents e.g. Environmental Water Management Plans for Living Murray Icon Sites and the assessment of environmental water requirements for the proposed Basin Plan.

3. Ecological objectives and targets (4.3)

Ecological objectives and targets are not specified. Instead, it suggests site-specific flow indicators (SFIs) from Basin Plan modelling will be used to measure the effectiveness of the proposal. Given the SFIs were developed to support ecological objectives and targets specified by the MDBA, there is an implicit and reasonable assumption in the proposal that those objectives and targets remain valid.

4. Anticipated ecological outcomes (4.4)

4.1. Anticipated ecological benefits (4.4.1)

The anticipated ecological benefits are described very generally and only qualitatively i.e. conceptual expected benefits from increasing the flexibility for environmental water managers to release RMIF at a time that will optimise environmental outcomes. Page seven of the business case anticipates that callable RMIF will enable improved achievement of SFIs along the River Murray. Preliminary spreadsheet assessment of improved environmental outcomes has been inconclusive (page 14 of the business case). For a business case this is under developed.

It is expected that the business case include an assessment of the proposal's anticipated ecological benefits consistent with the level of information provided to support business cases for other rule change proposals.

The MDBA has modelled the proposal as part of a package of 19 supply measures. However, it is not possible to attribute the individual contribution of RMIF to the supply contribution or its benefits in terms of changes to SFIs frequency (including with reference to relevant limits of change (LoC)), other LoC (e.g. no reduction in base flow and fresh outcomes), and maximum dry spell — since it is part of a modelled package. Accordingly it is difficult to assess the benefits of this proposal in a meaningful way.

There may be a residual risk of overestimating benefits requiring a reconciliation adjustment amount in 2024, discussed further below.

4.2. Potential adverse ecological impacts (4.4.2)

The business case does not identify any potential adverse ecological impacts.

The only risk identified against delivery of improved outcomes is the potential for changes to the operational behaviour of the Snowy Scheme e.g. due to developments within the National Electricity Market and future climate variability/change. While it may not be possible to predict potential changes and their impacts, this issue does pose a residual risk to realising the anticipated benefits from the proposal if future changes to operational behaviour have a detrimental impact on the call out ability of RMIF. In addition, there is the potential that there is no accepted agreement of ownership and responsibility for ongoing charges for the NSW RMIF water licence. Without agreement, this would likely result in environmental water holders being reluctant to utilise this water portfolio. These issue create a risk that the project requires a reconciliation adjustment in 2024.

5. Hydrology of the area and environmental water requirements (4.5)

5.1. Current hydrology and proposed changes to the hydrology (4.5.1)

There are a number of assumptions made to codify the 2011 amendments including the callable nature of RMIF from Snowy. There is not enough information available to predict future Snowy operational behaviour, however, assumptions are based on best available information. These assumptions may need to be further developed and tested with Snowy Hydro Limited (SHL).

The business case lists a number of options to determine when environmental water holder would likely call RMIF from Snowy. They seem a simplistic representation and require further development for real life application.

5.2. Environmental water requirements (4.5.2)

Preliminary analysis tested five scenarios for releases from the RMIF account. This was used to assess whether changes to RMIF call outs could provide improved environmental outcomes prior to formal modelling.

Modelling of this measure will be undertaken consistent with the environmental watering strategy represented in the Benchmark model. These water requirements are supported by scientific evidence and are linked to the ecological values, objectives, and targets of the sites. As such they represent a more appropriate basis to assess the supply contribution potential of this proposal than the scenarios used in preliminary analysis.

6. Operating regime (4.6)

MDBA, in consultation with NSW, has developed an operating regime it considers suitable for the determination of timing and volume of RMIF callout from Snowy.

The operating strategy includes some assumptions which will be confirmed as being valid subject to consideration of its interaction with other projects, SHL's risk assessment and modelled outcomes. The operating strategy may consequently require further refinement before final assessment of the package of the notified measures.

7. Assessment of risks and impacts of the operation of the measure (4.7)

The business case states 'water from the Snowy Scheme has no appreciable salinity, inflow into Hume Dam will have no salinity change, and it is highly unlikely that there will be a discernible change in salinity and water quality downstream'. While this statement is largely correct, evidence has not been provided to demonstrate how regard has been given to the requirements of Part 4, Division 2, Chapter 9 of the Basin Plan.

To ensure that water remains fit-for-purpose, regard must be given to the risks that may arise from elevated levels of salinity or other types of water quality degradation. For example, if water is called out during September–April, there may be a risk of blue green algae release from Hume Dam. In this case, careful management of releases outside of the designated period (May–September) needs to be ensured.

The business case does not provide any statement regarding risks from elevated levels of salinity or other types of water quality degradation. Additional information provided in regard to this does not expand further on management of water quality risks - 'any changes to water quality in the Murray as a result of this measure will be driven by the decisions of environmental water managers. The risk of impacts to the environment from changes to the Murray's water quality would be similar to that from the purchase of licences … the quality of water released from the Snowy Scheme is generally very high.'

A generic risk management framework matrix has been provided and applied across all identified impacts. However there is no mention of the AS/NZS ISO31000:2009 Risk Management Principles and Guidelines having been used, nor the identification/analysis of significant operating risks. Robust treatments or mitigation have also not been identified in terms of water quality and salinity.

As per section 4.2 Potential adverse ecological impacts, there is a residual risk associated with the uncertainty of future operating regimes and the potential for detrimental impacts on the call out of RMIF.

8. Complementary actions and interdependencies (4.9)

The business case does not identify any key inter-dependencies between this measure and other supply measures. The business case acknowledges the proposal is likely to complement and improve the delivery of environmental water including synergies with reducing or removing flow constraints.

The MDBA has modelled the proposal as part of BOC April 2016 advice. There has not been sufficient analysis of this modelling undertaken to provide a good indication of how this measures interacts to complement other supply measures. Prior to finalisation of modelling of the final package of measures, further refinements to the modelling of this proposal are required to the optimise RMIF call out provisions (as part of TLM's environmental water portfolio) to better target environmental outcomes downstream of Hume Dam. The optimised call-out provisions will seek to take into account interactions with other supply measures. Once this modelling has been further developed, the modelling assumptions used to represent RMIF will need to be tested with SHL to ensure their acceptability.

9. Project governance and project management arrangements (4.11)

9.1. Legal and regulatory requirements (s4.11.2)

The proposal has impacts for the Water Sharing Plan for the NSW Murray and Lower Darling Regulated River Water Source 2016, which is a transitional water resource plan. The business case states that NSW will amend this WSP to reflect the proposed state RMIF entitlement, but this has not yet been done.

The proposal also impacts the Bulk Entitlement (River Murray – Goulburn-Murray Water) Conversion Order 1999 and the Bulk Entitlement (River Murray - Flora and Fauna) Conversion Order 1999. These plans are recognised as transitional plans, including any amendments made up until 3 March 2008. These plans were amended in May 2014 to establish the RMIF entitlement, however these amendments have not been presented to the MDBA for accreditation as part of the transitional plans.

The amendments either proposed or already made to these plans do not appear to introduce new inconsistency with the Basin Plan. However, if the Basin States wish for the amendments to be recognised as part of the transitional plans under the Water Act 2007 they should be submitted to the MDBA so the “no less consistent” test can be applied.

The proposed changes to Schedule F and the associated issues regarding costs must be addressed in order to make this proposal fully operational.

The concerns raised above (4.1 Anticipated ecological benefits) indicate that, without further evidence to support the expectation that other changes to licence conditions do not affect the call out of RMIF. The SDL benchmark has been updated to include all aspects of the licence change based on best information available.

Ownership and responsibility for ongoing charges for the NSW RMIF water licence are yet to be decided. In the interim, NSW has provided the proposal that that once RMIF entitlements have been established they transfer them to the Commonwealth.