

Response to questions on the action of the Snowy Water Licence Review

In February the department held webinars to provide a status update on how we are implementing the actions of the Snowy Water Licence Review. This document provides responses to questions asked during the registration process, via email or raised during the webinar and taken on notice.

Abbreviations

SWIOID Snowy Water Inquiry Outcomes Implementation Deed (the Deed)

SMRIF Snowy Montane River Increased Flow

MANF Mean Annual Natural Flow

SRIF Snowy River Increased Flow

NSW DCCEEW New South Wales Department of Climate Change, Energy, the Environment and Water

SMHEA Snowy Mountains Hydro-Electric Authority

Questions raised during webinar 1 - 7 Feb 2024

Question 1:

The Snowy Water Inquiry Outcomes Implementation Deed (SWIOID) states cl 7.2 that the staged environment flows as a percentage of Mean Annual Natural Flow (MANF) includes base passing

flow which comprises 9GL regulated Base Passing Flow plus the passing flows at Mowamba and Cobbon Creek weirs which various Snowy Mountains Hydro-Electricity Authority (SMHEA), and Snowy River flow monitoring project documents calculated as between 18-24 GL.

Are these legitimate passing flows being factored into assessment of likely exceedance of annual Snowy River Increased Flow (SRIF) should all flows be released down Mowamba?

The first 5-year review determined that the Mowamba issue be resolved by 2012.

Response:

A response was provided in the webinar, but further detail is included here. Any SRIF released down the Mowamba River and Cobbon Creek (if the Mowamba Aqueduct was shut) would be in addition to (over and above) the base passing flows and the “weir overtopping flows”. That is, only the additional water would be accounted for against the SRIF.

Regarding the Mowamba issue being resolved by 2012, we can only speak for the current review. The process since the current review was released in 2018 has included the identification of options, commissioning and completion of a literature review, an expert scientific panel report on the ecological values and a facilitated workshop of the Snowy Advisory Committee on Social and community values, the commissioning and completion of a preliminary and secondary feasibility report, the commissioning of a further report to better quantify the foregone generation from the Jindabyne mini hydro plant and reconnaissance for and the costing of a gauge for the Mowamba River. The process is overseen by multiple jurisdictions requiring briefing and input at each step. This work has been undertaken while maintaining the “business as usual” responsibilities for managing the releases for the Snowy and Snowy montane rivers.

Question 2:

The SMHEA docs identified that average diversion at Mowamba was 38 GL (plus 18 -24 GL passing flows). That is a lot more than the 30-33 GL annual Mowamba flows vol that Paul referred to. Climate change has impacted Mowamba both in diversion vols and passing flows, and (as per SWIOD) the 18 GL Mowamba passing flows required to deliver 21% MANF to Snowy (combined with 212 GL SRIF and 9 base passing flow) are critical.

I'm talking about 18 GL passing flows at Mowamba included in the calculations at the SWIOD.

Response:

38 GL is mentioned in the SWIOD was a target volume for stage one of the SWIOD. The 30-33 GL/year mean annual Mowamba Diversion is a more recent estimate based on Mowamba Aqueduct flow data.

In terms of the accounting of SRIF this will not have a bearing though because the proposal is not to account releases via the Mowamba River based on “actuals” – that is the actual extra volume, not the estimated average additional contribution from the Mowamba.

Note the 9 GL base passing flow will not be changed and the water that would have overtopped the weir would also not be accounted as SRIF. Only additional flows would be accounted as SRIF.

Question 3:

Regarding ‘keeping the mouth of the Snowy open’ as an aim of increased variability. The mouth of the Snowy is in a different state jurisdiction – will there be legislated agreement with the Victorian Government to shepherd the flows down the Snowy to its mouth? Previously when the Snowy mouth had no flow going out it – the releases from Jindabyne at the time were not making it out the mouth.

Response:

The management of extraction in Victoria is a matter for the Victorian Government. The Victorian Department of Energy, Environment and Climate Action has informed us that the available water for rural use in the Victorian Snowy Basin totals around 3,656 ML/year. Actual yearly usage since 2018/19 ranged from 53.6 to 1,434 ML per year (with the highest levels of extraction in drought years). These figures are from the entire Snowy Basin so will include some extraction from tributaries. There are currently no specific protections in place for environmental releases for the Snowy River estuary and mouth; however, extraction is managed via rosters and restrictions to protect low flows.

Questions raised during webinar 2 – 14 Feb 2024

Question 4:

SRIF allocation on entitlements might reach 240 GL in a year but 212 GL is the upper limit on releases as there is no carryover clause for SRIF in Snowy Water Licence.

What is the current accumulated volume of River Murray Increased Flow held in Above Target Water

Response:

The current balance of River Murray Increased Flows held in the Snowy Scheme is approximately 330 GL.

Questions raised during webinar 3

Question 5:

The work NSW DCCEEW had done on commercial arrangement will it be shared with stakeholders?

Response:

As report contains information that may be market sensitive the department is undertaking a further review of the report before a decision on its release.

Questions received via email

Question 6

There is a significant volume of water owed the Snowy River that has not been delivered due to lack of a carryover clause for Snowy environmental water in the Snowy Water Licence. This was one of the issues supposed to be addressed following the release of the 2018 report of the Ten-Year review of the SWL. Unreleased SRIF has continued to accumulate since 2017-18.

Undelivered SRIF:

- 2017-28 - 2.334 GL

- 2022-23 - 3.31 GL but Snowy Hydro still reduced annual allocation by 18.7 GL in a payback of Dec 2021 spill / and then was under-delivery of 56 ML.
- 2023-24 - 29.34GL above 212 GL SRIF 'limit' but 16 GL spills in 2022-23 to be deducted from either the undeliverable vol of 29.34 GL OR might it come off the 212 GL.

In total approx. of SRIF 35 GL is outstanding.

The Snowy Licence Review Implementation Program update Nov 2022 (see attached) states that the Snowy Independent Scientific Expert Panel recommended re: Action 8A flexibility provisions for the Snowy, among other measures, allowing a carryover provision for undelivered SRIF annual allocation between years.

1. How far has NSW DCCEEW progressed on this action and when will it be finalised?
2. Could I please obtain a copy of the Snowy Independent Scientific Expert Panel's report and recommendations?
3. Has the NSW DCCEEW clarified how the 16 GL of 2022-23 spills will be repaid in 2023-24, i.e. will it be repaid from the 2023-24 SRIF annual allocation of 212 GL OR from the outstanding 29.34 GL allocated in excess of 212 GL?
4. Has the volume of water from Gungarlin and Burrungubugge Rivers flowing into Jindabyne dam because of into Snowy Hydro engineering failure at the Burrungubugge diversion shaft (rather than natural floods) been factored into Snowy Hydro/NSW DCCEEW's calculations regarding payback from SRIF of flood spills at Jindabyne since 2017?
5. The Burrungubugge diversion shaft has been out of action since 2017 with only a brief period of operation. Therefore, both the Burrungubugge (MANF 100 GL) and Gungarlin (MANF 44.5 GL) are flowing directly into the Snowy below Island Bend and down to Jindabyne Dam. In comparison the SMRIF allocation for that section of the Snowy, from Tollbar and Diggers Creeks combined, is only 18.9 GL.
6. What is the timeline for repair of the Burrungubugge diversion shaft?
7. The Burrungubugge and Gungarlin Rivers have now flowed down their natural course to the Snowy for more than six years (as they did up until the weirs were constructed in 1965).

Does NSW DCCEEW plan to undertake an environmental assessment of the impact on the aquatic ecosystems of turning these rivers off again in the event the Burrungubugge diversion shaft is repaired?

Response

1. A status update on the investigations into a carryover provision will be provided in the webinar as part of Action 8a.

The issue of under-delivery of Snowy River Increased Flow also relates to Action 8b of the Snowy Water Licence Review, with the issue and NSW position described in Section 6.3.5.2 of the Final Report. As detailed in the Report, the NSW, Victorian and Commonwealth Government have a different position from Snowy Hydro. The interjurisdictional 'Technical Working Group' - which has been working to implement the actions of the Licence review - has not reached a consensus on this matter.

The department cannot resolve this matter through unilateral action to amend the Snowy Water Licence (the licence) because:

- The licence cannot be amended to be inconsistent with the Snowy Water Inquiry Outcomes Implementation Deed (the deed).
- The licence cannot be amended without agreement from Snowy Hydro unless NSW compensates Snowy Hydro for adverse financial impact.
- The deed cannot be reviewed without agreement from all parties, being the NSW, Victorian and Commonwealth Governments.

The Commonwealth Government is currently considering a review of the Snowy Water Inquiry Outcomes Implementation Deed to address this and other matters:

- <https://www.dcceew.gov.au/water/policy/programs/water-reform/improving-health-upper-murrumbidgee>

2. Please find the Snowy Independent Scientific Expert Panel's report and recommendations on this webpage:

<https://www.environment.nsw.gov.au/topics/water/water-for-the-environment/snowy-and-montane/mowamba-and-jindabyne-release-flexibility>

3. The Water Consultation and Liaison Committee (WCLC) agreed that a physical delivery of 212 GL (plus Jindabyne Base Passing Flows) would occur over 2023/24. A decision on the accounting of the spill volume has been deferred to the end of the water year, when the process of accounts reconciliation occurs via the Annual Water Operating Plan.
4. The infrastructure outage impact occurred from September 2022. In the 2022/23 water year, the spills and flood mitigation pre-releases from Jindabyne were around 260 GL, of which around 110 GL was contributed from Gungarlin and Burrungubugge. This means that if the infrastructure was operational, a significant volume of spill would have occurred regardless and Snowy River Increased Flow would have been liable.

Jindabyne is now being managed by Snowy Hydro to lower operating levels to account for the additional inflows due to the outage. The impact of the outage on spills will be considered as part of an accounting framework, however, it is important to note that to achieve flushing flows means mitigation measures to avoid spills cannot be fully implemented.
5. Snowy Hydro is currently investigating options regarding Burrungubugge infrastructure. For further information please contact Snowy Hydro. (Contact email address provided)
6. The Snowy Water Licence provides Snowy Hydro with the right to use the Burrungubugge and Gungarlin River aqueducts (See clause 7.1 and Schedule 2). The department cannot direct Snowy Hydro's operations in relation to these aqueducts. If Snowy Hydro returns these aqueducts to service, the department will suggest a phased reduction of flows that minimises ecological impact for consideration by Snowy Hydro.

Snowy Hydro's operations are guided by the requirements of the deed, the licence, and the 'Statement of Expectations' prepared by the Commonwealth Government as the owners of Snowy Hydro.

The Commonwealth Government (shareholder Ministers Bowen and Gallagher) is currently considering a review of Snowy Hydro's Statement of Expectations to better reflect community expectations of the social, cultural and environmental impacts and outcomes of the scheme.

Question 7:

In all the writings about restoration of the Snowy we hear about flushing flows to mobilise sediment. Has there ever been any consideration of the social impacts on the town of Dalgety, which was fundamentally changed by the removal of 98% of the river when Jindabyne dam wall was built?

Some of the justification for the increased flows in the river should surely be to right the social wrongs done to the only town in NSW on the Snowy River. As such, an increased flows regime that facilitated the tourism potential of the town should be considered. One potential activity that has generated interest locally would be a whitewater canoeing structure or facility within the river at or near Dalgety weir.

Such a structure would need to be designed for a steady flow (say $10\text{m}^3/\text{sec}$) for as many summer daylight hours per year as possible. At present the typical flow on a summer day is only $2\text{m}^3/\text{sec}$, which would be insufficient to create a facility which would attract canoeists. The flow only varies if there is rain in the tributary catchments which is unpredictable. For reference, the Olympic whitewater stadium at Penrith operates at $14\text{m}^3/\text{sec}$.

To justify a capital investment to create a canoeing facility there needs to be a guaranteed flow of water in the warmer months of the year.

While ever the flow regime releases most of the SRIF through a small number of very short duration surges, there is little or no potential to redress the incredible loss suffered by our town when the river was taken away. The 2022-23 Annual Plan for Increased Flows suggests that social benefits need to be considered as long as they complement the environmental outcomes.

Could you please consider how some social benefit could be provided to Dalgety. It was Dalgety after all which gave up its river and has never been compensated in any way for the enormous gains made by the rest of Australia as a result of the irrigation schemes which arose.

Response:

The environmental water releases made to the Snowy River from Jindabyne are made available and governed by the Snowy Water Inquiry Outcomes Implementation Deed (the Deed) which was agreed by the Commonwealth, Victorian and New South Wales governments. The objectives for the releases are environmental objectives that are set by the Deed to improve the health of the Snowy River and habitat for a diverse range of plant and animal species through a number of measures. You are right in noting that social benefits are considered but they must complement these environmental objectives.

We have consulted with PaddleNSW during the planning of our high flow releases. While operational constraints can limit the timing of releases, we are open to varying the release dates where possible if the environmental benefits are not compromised.

For your proposal of providing 10 m³/s (864 ML/day) during as many daylight hours as possible in summer (sufficient to support a whitewater kayaking facility), this would quickly add up to be a substantial volume of water in a period that is a low-flow season. It would require a reduction in releases during the natural high flow season of winter/spring, compromising the environmental outcomes likely to be achieved for the river.

As such, we are not able to implement the proposal, but we would welcome suggestions on particular times when planned releases could be varied to provide benefit (for instance for a particular kayaking event) without compromising the environmental outcomes.

The Snowy Advisory Committee are also aware of your interest and have asked that you be invited to discuss this at a future committee meeting.

Question 8:

What options are being considered for significantly improving 'water security' and 'flood mitigation' outcomes via changes to the timing of releases, what are the barriers to implementation, and the likely timeline for implementing some significant changes?

Response:

A number of options are being considered to improve water security and potentially help assist in reducing releases during wet periods. The implementation of these options is subject to a mutually agreed approach being reached by the Technical Working Group (TWG) and/or Water Consultation Liaison Committee (WCLC).

As an example, an option is under consideration by TWG to facilitate banking of Within Year Release Requirement (WYRR) and Wet Sequence Protection (WSP) volumes as Below Target Water (via transfer from Above Target Water to Below Target Water). Currently, when a WYRR and WSP obligation is triggered, these volumes are required to be released from the scheme into downstream valleys. By banking WYRR and WSP volumes within the scheme as Below Target Water, it may assist it reducing releases during wet periods and increasing water security during dry periods.

Another option under consideration is to improve the timing of relaxation triggers, which should provide an earlier indication of conditions in downstream valleys and the ability to respond to those conditions, including potentially reducing releases.

Question 9:

Part of Mr Singh's presentation caught my attention and a subsequent reading of the Final Report of the Ten-year Review of the Snowy Water Licence shows that the same wording occurs in that document. I refer to Section 6.4.1.2 *Below-target and above-target water*, paragraph six:

Inflows to the Snowy Mountains Scheme are accounted as below-target water when storages are below the target volumes. When storages are above the target volumes, inflows are accounted as above-target water.

These sentences are misleading and may be the reason for the subsequent wording of the last paragraph of Section 6.4.1.2 of the Final Report:

Concerns have been raised that the licence lacks clarity around the accounting of above-target water, specifically transfers between above-target water and below-target water and from cloud seeding operations. The consequence is that various parties have had different interpretations of above-target water availability.

The first highlighted sentences above would be more correct if the word "storages" was replaced by the words "the calculation of below-target water", however the second sentence would still be incorrect because the amount of above-target water accounted for is only that amount in excess of Target storage volumes.

Under the Target Rule principle of operating the Scheme, there is one monthly calculation involving inflows for each Development and it only applies to below-target water.

1. Inflows are accounted as below-target water when the sum of:

- (+) inflows;
- (+) previous month below-target water;
- (-) pro-rata required annual release;
- (-) losses, evaporation;

are less or equal to the Target storage volumes shown in Table 16.

2. Inflows are accounted as above-target water by the amount that the sum exceeds the Target storage volumes shown in Table 16.

Most inflows contribute to below-target water and only a very small percentage of inflows are accounted as above-target water and only result after a series of years of higher than average precipitation.

Consequently, (and as there is only one calculation of inflows), a claim for additional inflow as a result of cloud seeding can only come from below-target water while ever the calculation of below-target water is less than Target storage volumes.

This aspect is recognised in the fourth paragraph of Section 6.4.1.3 *Accounting for inflows generated from cloud seeding*.

The decisions to account the additional inflows as above-target water, regardless of below target storage levels, recognises the additional inflow created by Snowy Hydro Limited's cloud seeding program, in accordance with the program's original intent.

In which case, if cloud seeding water is to be arbitrarily accounted as above-target water, it needs to be included with the other dot points of below-target to above-target water re-classed in Section 6.4.1.2. of the Final Report and recognised as a corresponding reduction in the amount of below-target water available with the potential to affect associated drought provisions in the Water Licence, particularly on the Murray Development.

Response:

The Technical Working Group endorsed progressing a review of cloud seeding accounting through the Water Liaison Working Committee (WCLC). This review will involve developing an agreed framework for accounting of cloud seeding inflows and potential interactions between Licence clauses. The WCLC will prioritise this matter alongside other outstanding actions and will develop a workplan to outline the steps towards resolution.