

# WATER OPERATIONS REPORT



**2008-09**



*Lake Eucumbene*



## FOREWORD

This is the second annual Water Operations Report prepared by Snowy Hydro. This report has been written and widely distributed for the benefit of all of the company's stakeholders and the people of the local communities associated with the Snowy Scheme. This report describes in high level summary form how the Snowy Scheme operates, the water operations during the 2008-09 water year and how Snowy Hydro met its obligations under the Snowy Water Licence.

Snowy Hydro makes available to the public a large amount of information with respect to the water operations of the Snowy Scheme – principally through our company's website [www.snowyhydro.com.au](http://www.snowyhydro.com.au). This Water Operations Report is an important element of that package of publicly available information.

Snowy Hydro is committed to improving public understanding and appreciation of the many responsibilities and obligations that the company has with regard to the water resources of the Snowy Scheme. It is, therefore, our hope that all of the company's stakeholders and the people of the local community read this report.

Opposite you will find an independent report that gives assurance of the accuracy of the data contained within this report. Further information including terminology, calculation of data and Snowy Water Licence obligations can be found by visiting [www.snowyhydro.com.au](http://www.snowyhydro.com.au) or [www.dwe.nsw.gov.au](http://www.dwe.nsw.gov.au)

David Harris  
Executive Officer, Water  
Snowy Hydro Limited



Suite 2, Level 1  
7 Leeds Street  
Rhodes NSW 2138

### VERIFICATION STATEMENT

Snowy Hydro Limited commissioned NCS International to verify the data from its Water Operations Report for the 2008-2009 Water Year in respect of the volumes that it was required to target and the actual releases made to meet those targets.

NCS International was not responsible for the preparation of any part of the report.

The audit was carried out using recognised assessment techniques based on ISO19011 with the Water Operations Report as the core reference. The audit was office based and included interviews with staff. Numerical values provided in the Water Operations Report were compared with the required target volumes from the approved Annual Water Operating Plan (2009-10 Water Year) and actual releases were compared with a sample of entries from the water accounting databases. Records of maintenance and calibration of equipment used in monitoring water flows were also reviewed.

Data was reviewed for reasonableness and where practical checked for the order of magnitude, but detailed calculations were not carried out.

Based on the data review process applied during the audit, no discrepancies were identified in the Water Operations Report for the 2008-2009 Water Year and the report provides a fair representation of the required target volumes and Snowy Hydro Limited's water operations.

SL

Stephen Lynch  
BSc(hons), MScTech  
RABQSA Certification: 14632  
NCS International Pty Ltd  
24 September 2009

NCS International Pty Ltd  
Website: [www.ncsi.com.au](http://www.ncsi.com.au)  
Email: [info@ncsi.com.au](mailto:info@ncsi.com.au)  
Call: 1300 856 554

**wegiveyoutheworld** 

NCS International Pty Limited ACN 078 850 211 is a wholly owned subsidiary of National Association of Testing Authorities, Australia ACN 004 379 748



*Guthega Dam*



*Khancoban Pondage*

## CONTENTS

Key Highlights in this Water Operations Report	4	Western River Releases	
Purpose of this Report	5	—● River Murray Catchment	15
Overview of Snowy Hydro	6	—● Murrumbidgee River Catchment	16
The Snowy Water Licence and our Business	7	Environmental Releases	
Downstream from the Snowy Scheme	8	—● Snowy River Environmental Flows	17
Drought and Water Releases	9	—● Snowy River Increased Flows	18
How the Snowy Scheme works	10	—● Snowy Montane Rivers Increased Flows	19
—● The Snowy-Tumut Development	11	Storages	
—● The Snowy-Murray Development	12	—● Snowy Scheme Storage for 2008-09	20
Inflows		—● Lake Levels	21
—● Snowy Scheme Inflows	13		
—● Snowy Scheme Inflows for 2008-09	14		

## KEY HIGHLIGHTS

- Snowy Hydro complied with the Snowy Water Licence requirement to target the Required Annual Release to the River Murray catchment in the 2008-09 Water Year.
- Snowy Hydro complied with the Snowy Water Licence requirement to target the Required Annual Release to the Murrumbidgee River catchment in the 2008-09 Water Year.
- Snowy Hydro complied with the Snowy Water Licence requirement to target environmental releases into the Snowy River from Jindabyne Dam in the 2008-09 Water Year.
- Snowy Hydro complied with the Snowy Water Licence requirement to target environmental releases from Tantangara Dam in the 2008-09 Water Year.
- The current drought sequence of 12 years is worse than what the Snowy Scheme was intended to cope with and includes the lowest inflow year on record during 2006-07.
- A number of consecutive years of above average inflows are now required to see Snowy Scheme storage levels increase to long term average levels.
- Snowy Hydro is meeting both electricity and water obligations even through a drought sequence worse than what the Snowy Scheme was intended to cope with.



*Snow on the range*



*Tumut Pond Dam*

## PURPOSE OF THIS REPORT

The main purpose of this Water Operations Report is to provide the company's stakeholders and the people of the local communities associated with the Snowy Scheme with information on how Snowy Hydro performed in the 2008-09 Water Year in meeting the obligations imposed on it by the Snowy Water Licence. Those obligations essentially relate to:

- (1) targeting water releases to the River Murray and Murrumbidgee River catchments, the annual volumes of which are determined according to formulae set out in the Snowy Water Licence;
- (2) targeting water releases from Jindabyne Dam into the Snowy River for environmental purposes ("Snowy River Increased Flows"); and
- (3) facilitating potential additional natural flows over nominated Snowy Scheme aqueducts and targeting releases from Tantangara Dam, both for environmental purposes ("Snowy Montane Rivers Increased Flows").

The Snowy Water Year commences on 1 May and concludes on 30 April each calendar year. Volumes in this report are quoted in gigalitres (GL).

- 1 gigalitre is equal to 1,000 megalitres (ML).
- 1 megalitre is equal to 1 million litres.

Since the commencement of the operation of the Snowy Scheme, water release volumes have been set as targets and any minor differences between the target and actual release volumes (excess or shortfall) are carried over to the next Water Year. This is done in the form of "overs and unders" and is expressly permitted in the Snowy Water Licence in recognition of the difficulties inherent in achieving precise release volumes using infrastructure on the large scale of that comprising the Snowy Scheme.



Lake Jindabyne

For additional detail on the background and methods for the derivation of figures in this report, further information is available on our website at [www.snowyhydro.com.au](http://www.snowyhydro.com.au)

# OVERVIEW OF SNOWY HYDRO

Although the Snowy Scheme was designed to produce electricity, one of the key objectives of the three Governments was to mitigate the effects of drought on irrigated agriculture in NSW and Victoria. In essence, they wanted to improve the security of water supply to farmers along the River Murray and Murrumbidgee River.

The Snowy Scheme only became a reality when the Governments worked out a way to pay for the construction and maintenance of the Snowy Scheme, which was from the sale of the Snowy Scheme's electricity output.

The Snowy Scheme was built over a 25 year period from 1949 to 1974. It includes sixteen major dams, seven power stations, 145km of interconnected tunnels and 80km of aqueducts.

The Snowy Mountains Hydro-electric Authority was responsible for the construction and maintenance of the Snowy Scheme under the direction of the Snowy Mountains Council.

From 1998, when the National Electricity Market (NEM) was formed, the electricity output from the Snowy Scheme had to be bid into the market with all other energy companies in an open, competitive marketplace. Snowy Hydro Trading Pty Ltd was formed to trade the electricity output of the Snowy Scheme in the NEM.

In 2002, the Snowy Mountains Council and the Snowy Mountains Hydro-electric Authority were abolished and the Snowy Scheme was corporatised to create Snowy Hydro Limited.

Also, Snowy Hydro Trading became a non-operating subsidiary of Snowy Hydro.

Snowy Hydro today is a growing business providing a range of financial hedge and renewable energy products to participants in the competitive NEM.

Snowy Hydro operates the 3800 megawatt (MW) Snowy Scheme. Snowy Hydro also owns and operates the 300MW Valley Power gas-fired power station and the 320MW Laverton North gas-fired power station, both located in Victoria.

Red Energy, an electricity and gas retailer operating in three States with over 200,000 customers, is a subsidiary of Snowy Hydro Limited.

Snowy Hydro operates under an independent board and the company's shares are owned by the NSW Government (58%), VIC Government (29%) and the Commonwealth Government (13%).



*Murray 1 Power Station*



*Laverton North  
Gas fired power station*



*Tumut 3 Power Station*

# THE SNOWY WATER LICENCE AND OUR BUSINESS

To ensure that the benefits of the Snowy Scheme could be maximised for both water security and electricity generation, a set of operating principles and water accounting rules was developed under the 1957 Snowy Agreement.

On Corporatisation in 2002, the key elements of those operating principles and water accounting rules were codified and carried forward in the Snowy Water Licence issued by the NSW Government.

The Snowy Water Licence is not a freedom to act as is the case with most licence arrangements. Rather, it is a bundle of a few rights and numerous, legally binding and enforceable obligations.

The many legally binding obligations imposed on Snowy Hydro under the Snowy Water Licence include obligations with regard to targeting water releases from the Snowy Scheme. The calculation of the volume of water to be released from the Snowy Scheme each year to each of the River Murray and Murrumbidgee River catchments (the Required Annual Releases) is prescribed by the Snowy Water Licence; it is not determined by Snowy Hydro.

Snowy Hydro's rights to collect, divert, store and release water under the Snowy Water Licence in no way represent any form of ownership of the water. All of the water in the Snowy Scheme is owned by the interests who have an entitlement to releases from the Snowy Scheme. This includes the States of New South Wales and Victoria, irrigators from those States and of course the environment.

In practical terms, to generate electricity Snowy Hydro must release water from the Snowy Scheme, and to release water from the Snowy Scheme, Snowy Hydro must generate electricity. In this way, water releases, electricity generation and their associated market impacts are inseparably linked.

The mandatory nature of the obligations imposed on Snowy Hydro by the Snowy Water Licence means that, as a practical matter, Snowy Hydro operates the Snowy Scheme to first meet its water release obligations and then to maximise electricity market opportunities within the constraints imposed by the Snowy Water Licence.



*Jounama Release Gates*



*Water releases from Lake Jindabyne into Snowy River*

Downstream water users have never been charged for the water regulation services provided to them each year by the Snowy Scheme.

Snowy Hydro has to fund both the debt and operating costs of the Snowy Scheme through its participation in the highly competitive NEM. Those electricity revenues pay for the increasing costs of maintaining and operating the Snowy Scheme, including the costs associated with making environmental flows.

The calculation of the volume of water to be released from the Snowy Scheme each year to each of the River Murray and Murrumbidgee River catchments (the Required Annual Release) is prescribed by the Snowy Water Licence; it is not determined by Snowy Hydro.



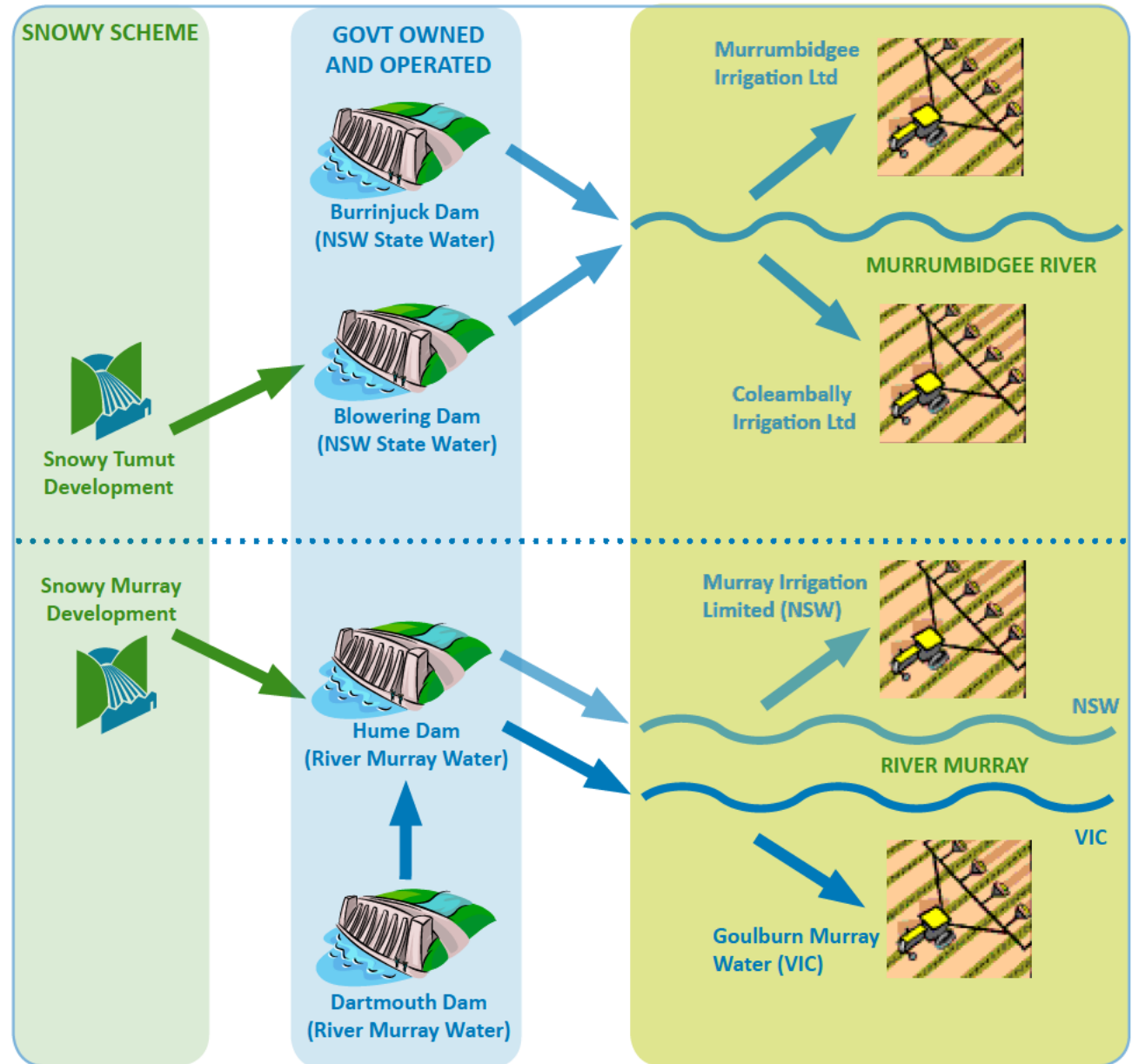
# DOWNSTREAM FROM THE SNOWY SCHEME

Snowy Scheme releases and the other River Murray and Murrumbidgee River catchment inflows are re-regulated by the Hume Dam on the River Murray and Blowering Dam on the Tumut River, neither of which are controlled by Snowy Hydro.

Snowy Hydro has no influence or involvement in the allocation or delivery of water to downstream water users, for example to irrigators.

Water releases for irrigation and environmental uses along the upper River Murray are managed by the Murray-Darling Basin Authority principally through releases from Dartmouth and Hume Dams (the Snowy Scheme does not make releases into Dartmouth Dam).

Water releases for irrigation and environmental uses along the Murrumbidgee River are managed by NSW State Water principally through releases from Blowering and Burrinjuck Dams (again, the Snowy Scheme does not make releases into Burrinjuck Dam).





*Lake Eucumbene*

## DROUGHT AND WATER RELEASES

Snowy Hydro's primary obligation under the Snowy Water Licence is to release a calculated volume of water annually to each of the River Murray and Murrumbidgee River catchments. Each of these volumes is calculated principally by reference to inflows.

In drought years, like we are experiencing at the moment, the volume of water to be released from the Snowy Scheme is reduced under the formulae set out in the Snowy Water Licence. This is known as the Dry Inflow Sequence Volume (DISV) reduction. This reduction to the volume of water

to be released from the Snowy Scheme has been applied since the 2006-07 water year, which was the lowest year on record for inflows into the Snowy Scheme. In 2006/07 only 683 gigalitres flowed into the Snowy Scheme storages compared to long term average annual inflows of around 2,800GL.

Despite the challenges, in recent years of critically low inflows, Snowy Hydro is meeting both electricity and water obligations even through a drought sequence worse than what the Snowy Scheme was designed to cope with.

Ongoing inflows have resulted in low storages which will affect Snowy Hydro's ability to make long term average releases in 2009-10 and beyond.

In the absence of a number of consecutive years of above average inflows the storages in the Snowy Scheme will not recover for some years, underscoring the importance of Snowy Hydro's investment into gas fired electricity generation. Without this foresight and investment, the financial implications on the business would have been severe.

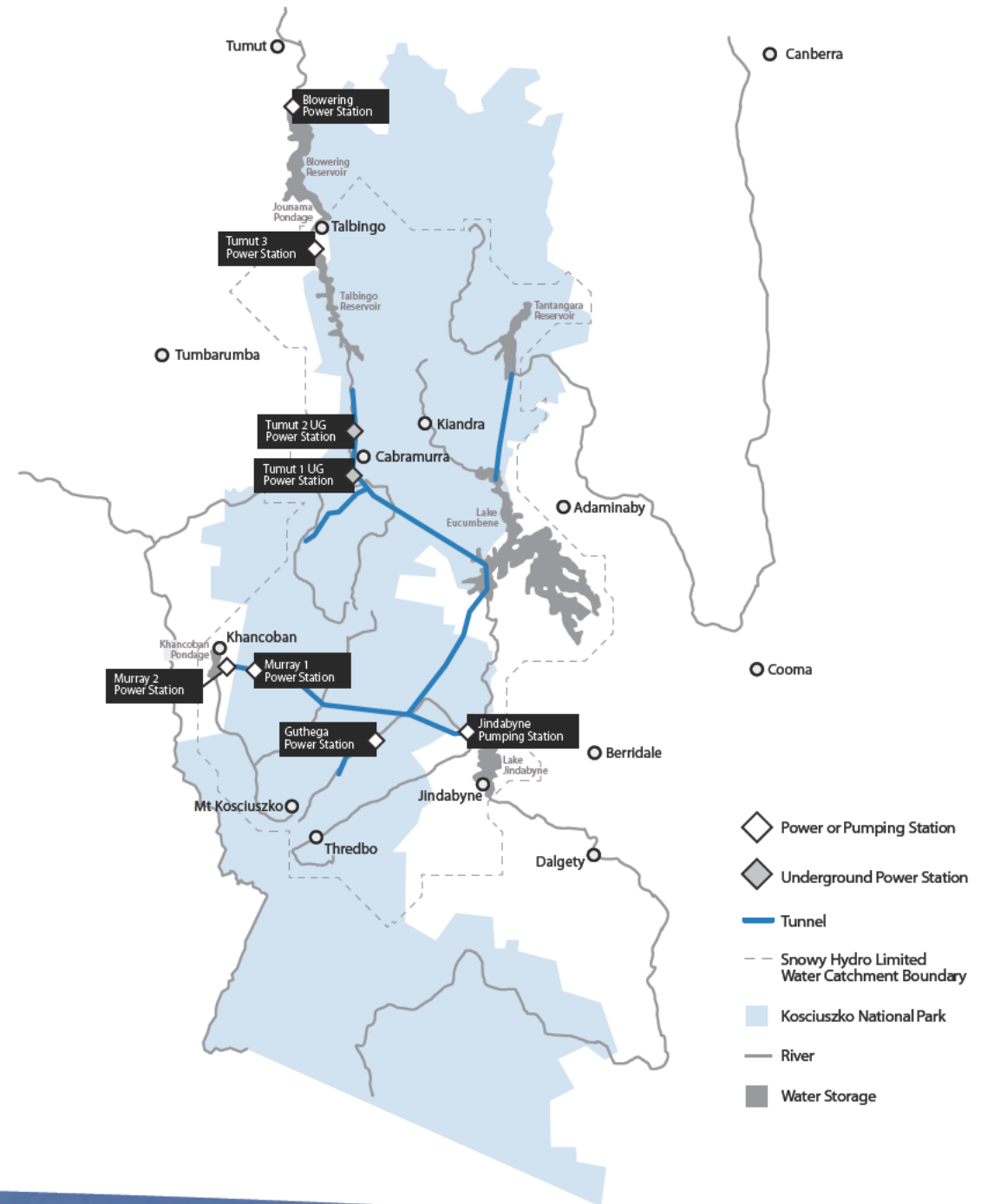
# HOW THE SNOWY SCHEME WORKS

Recognised as one of the greatest civil engineering wonders of the modern world, the Snowy Scheme has the added distinction of being one of the most complex, multi-purpose, multi-reservoir hydro schemes ever built. The Snowy Scheme's features include:

- seven major power stations - Murray 1, Murray 2, Blowering, Guthega, Tumut 1 (located 366m below ground level), Tumut 2 (located 244m below ground level) and Tumut 3.
- one pumping station at Jindabyne and a pump storage facility at Tumut 3.
- 16 major dams and a total storage capacity of 7000 gigalitres or almost 12 times the volume of Sydney Harbour.
- 145km of inter-connected tunnels and pipelines and 80km of aqueducts.
- 31 turbines with a generating capacity of 3800MW.

The Snowy Scheme was designed to collect and store water, including water that would naturally flow east of the Snowy Mountains to the coast, diverting it through trans-mountain tunnels and power stations and then releasing it west of the Snowy Mountains into the catchments of the River Murray and the Murrumbidgee River where it can be used for town water supply, irrigation and environmental uses.

The Snowy Scheme comprises two major developments: the northern Snowy-Tumut Development and the southern Snowy-Murray Development.



## THE SNOWY-TUMUT DEVELOPMENT

The Snowy-Tumut Development consists of four power stations and 15 generating units.

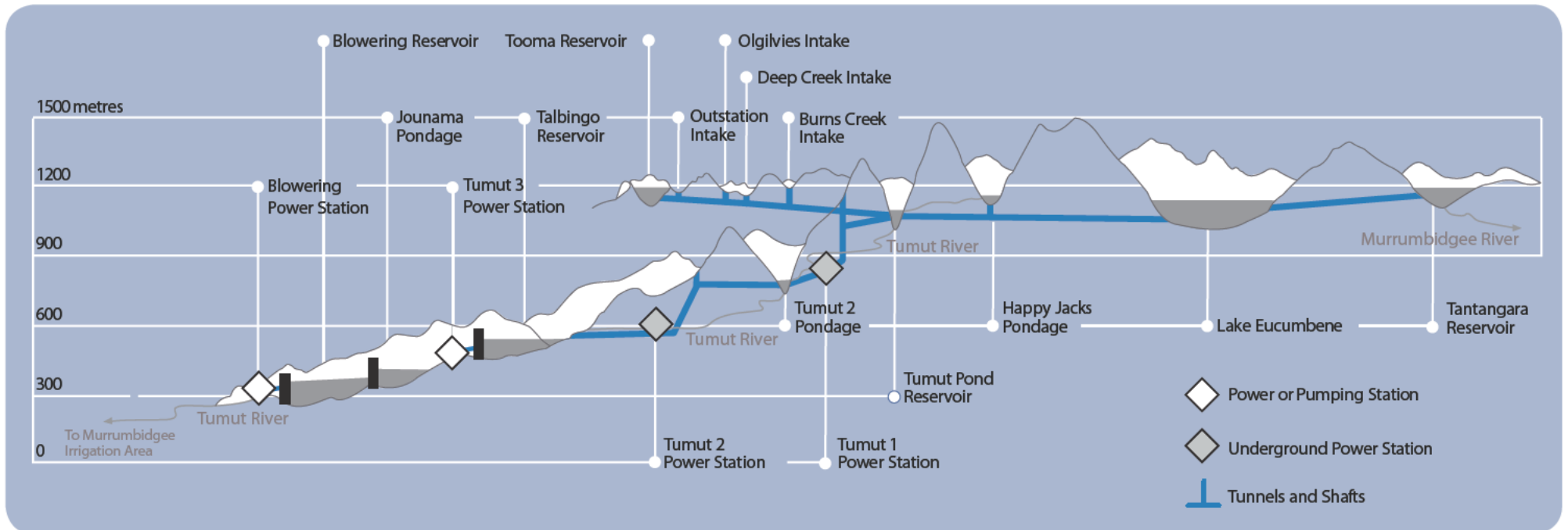
The Snowy-Tumut Development collects the headwaters of the upper Murrumbidgee, Tooma and Eucumbene Rivers. Those waters are diverted through trans-mountain tunnels to Tumut Pond Dam. There they join the waters of the Tumut River and flow through Tumut 1 and Tumut 2 underground power stations discharging into Talbingo Reservoir. Water stored in Talbingo Reservoir then passes through the Tumut 3 Power Station and into Jounama Pondage.

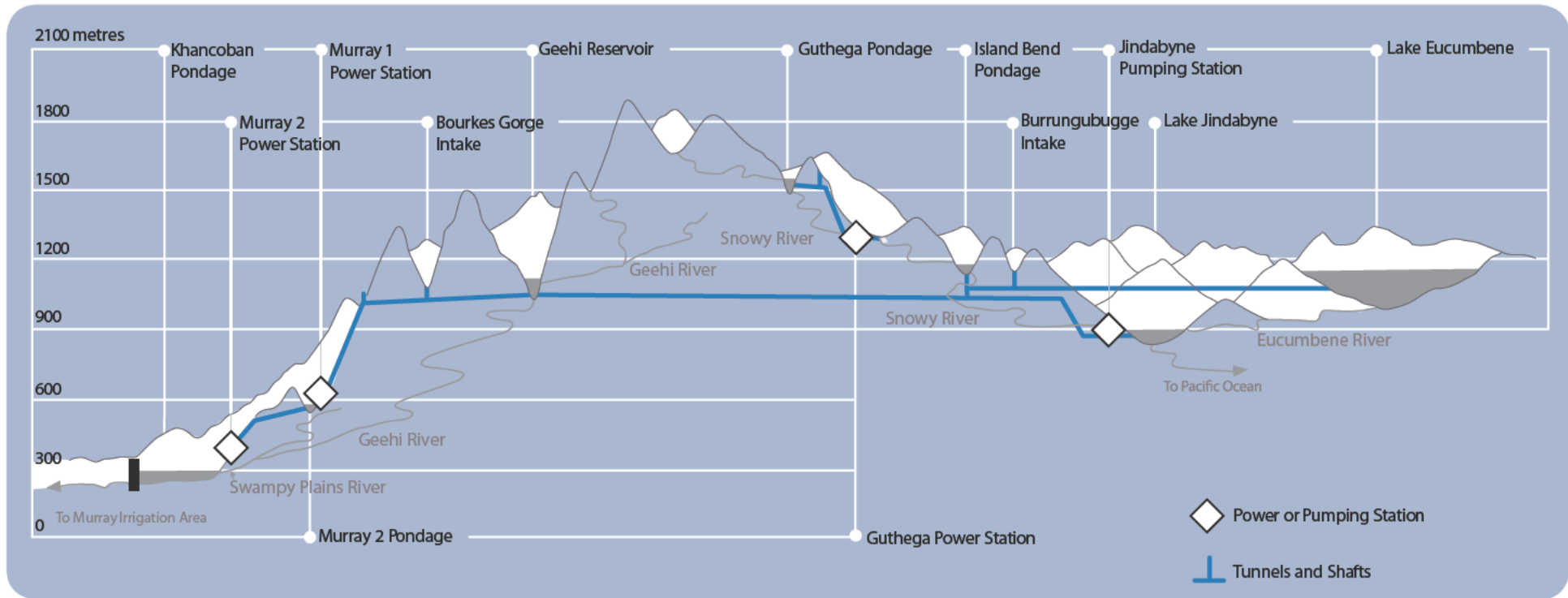
Three of the six generators at Tumut 3 Power Station have pumps that can be used to pump water from Jounama Pondage back up into Talbingo Reservoir, thereby “recycling” water. Water is released from Jounama Dam into Blowering Reservoir. A small hydro power station is currently under construction at Jounama Dam.

Blowering Power Station is located on Blowering Dam and is leased from State Water. Water releases from Blowering Dam are controlled by State Water, a NSW State Owned Corporation, to provide for town water supply, irrigation and

environmental use requirements. Blowering Power Station is therefore a “run of river” plant that operates as State Water releases water from Blowering Dam into the Tumut River which joins the Murrumbidgee River near Gundagai.

On the Murrumbidgee River, as at Gundagai, the Snowy Scheme contributes inflows of around 25% during average inflow years but 60% during drought years.





## THE SNOWY-MURRAY DEVELOPMENT

The Snowy-Murray Development consists of three power stations and 16 generating units.

Water in the upper Snowy River is diverted at Guthega Dam through Guthega Power Station. Inflows into the relatively small Guthega Pondage are seasonal. During times of high inflows, water flowing into Island Bend Pondage is directed to Lake Eucumbene for storage and subsequently transferred to the River Murray catchment.

At times of low inflows, water from Island Bend Pondage is diverted directly to Geehi Reservoir through a trans-mountain tunnel together with water which flows back from Lake Eucumbene.

Pumps lift water from Lake Jindabyne, normally using off-peak power, to discharge into Geehi Reservoir on the western side of the Great Dividing Range. Water from Lake Jindabyne cannot be pumped back to Lake Eucumbene.

From Geehi Reservoir, with additional water from the Geehi River, the water passes through Murray 1 and Murray 2 power stations. Khancoban Dam regulates water released from Murray 2 Power Station down the Swamy Plain River which is a tributary of the upper River Murray.

On the River Murray, as at the Hume Dam, the Snowy Scheme contributes inflows of around 8% during average inflow years but 33% during drought years.

# INFLOWS

## SNOWY SCHEME INFLOWS

The historical record of annual inflows into the Snowy Scheme is characterised by high variability with annual inflows ranging from less than 700GL to well over 5,500GL. Of particular note is the now unprecedented dry inflow sequence that started in 1996-97 and which includes the lowest inflow year on record during 2006-07.

There has only been one year in the last 12 years that has seen slightly above average inflows. This is the primary reason why lake levels have dropped over the past decade and remain at low to very low levels.

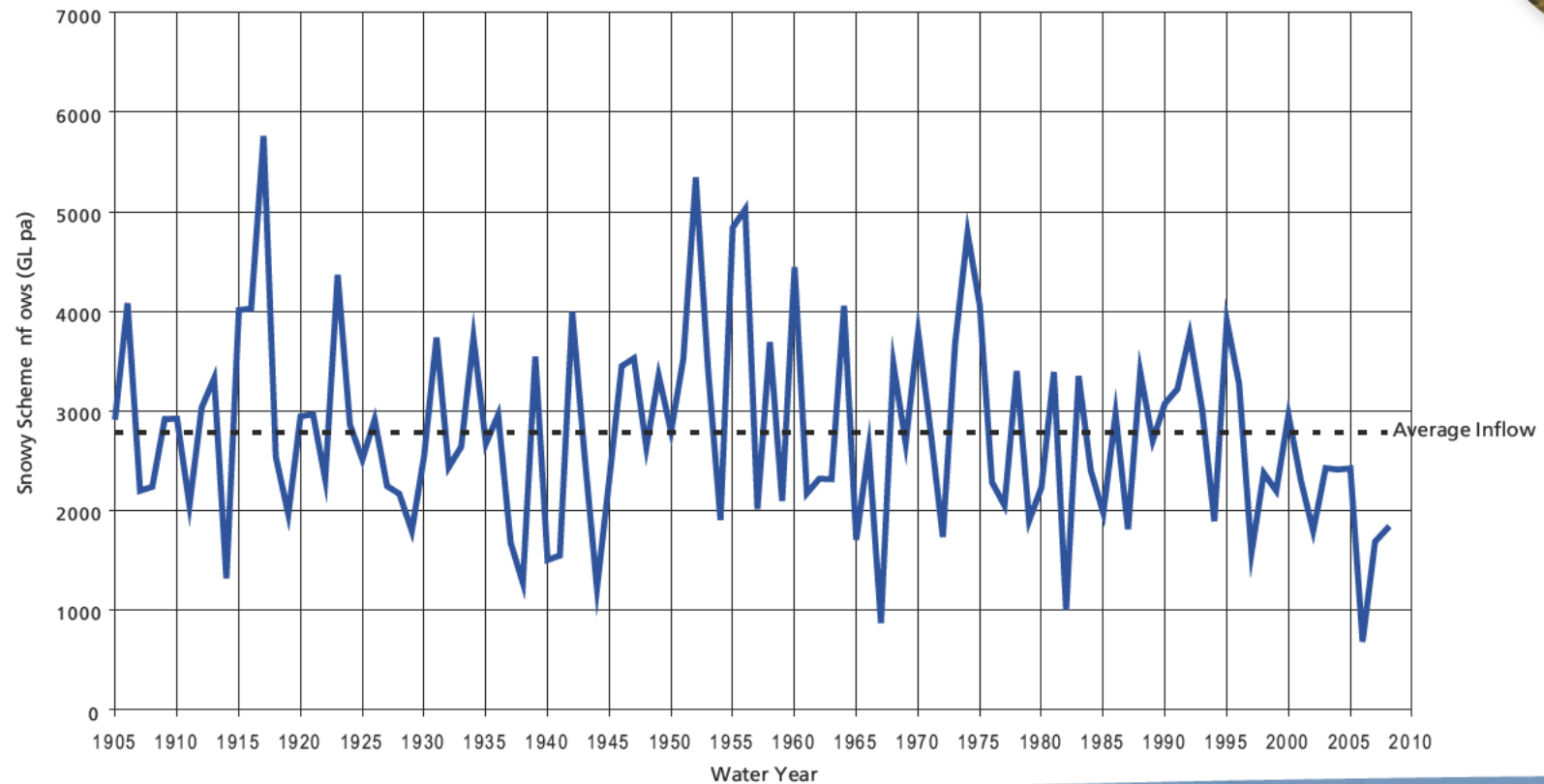


*Inflows from snowmelt*



*Island Bend Dam*

**Snowy Scheme Inflows from May 1905 to April 2009**



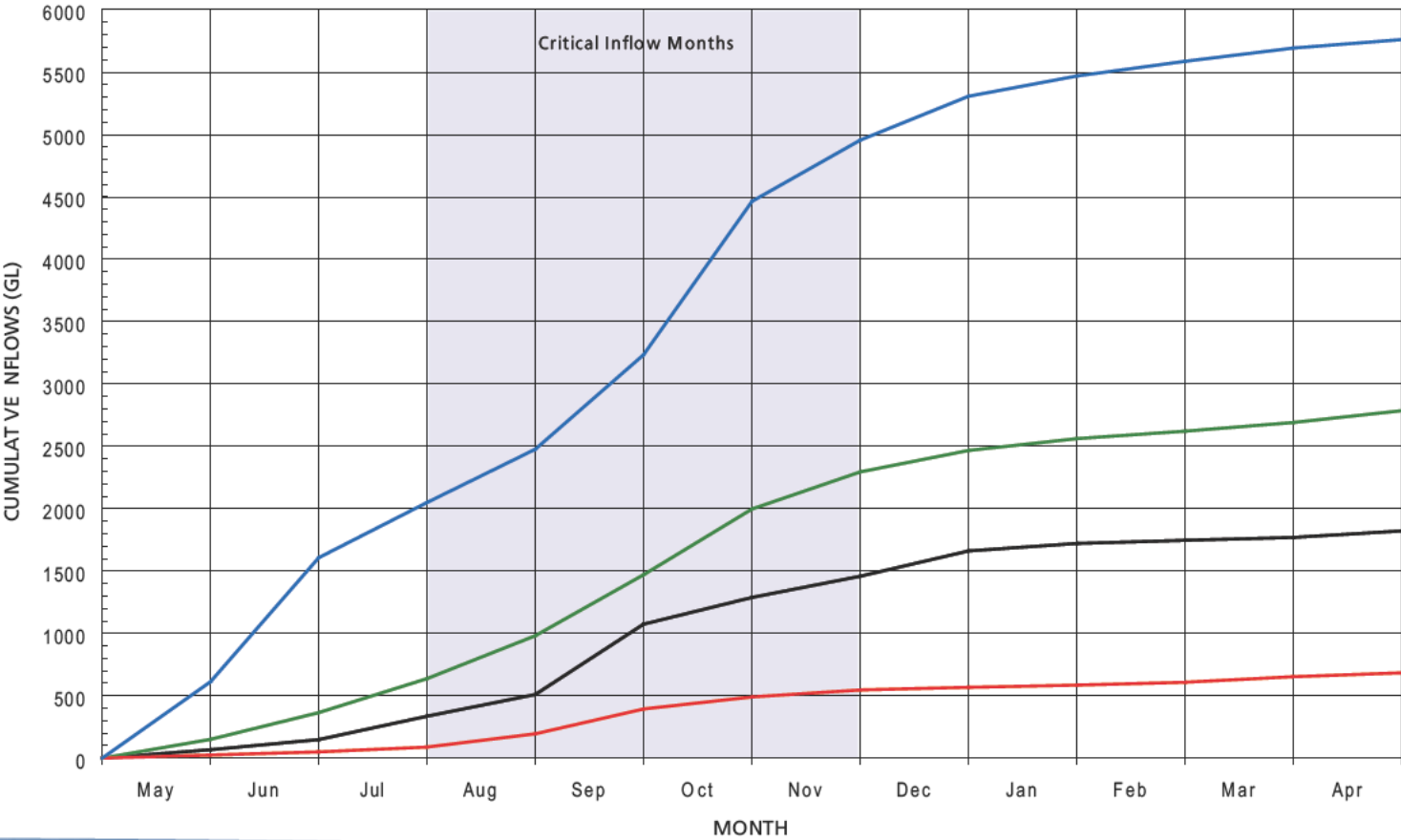


Lake Eucumbene

# SNOWY SCHEME INFLOWS FOR 2008-09

Drought conditions continued during the 2008-09 Water Year. This negatively impacted on the Snowy Scheme with only 1,821GL of inflows. This is about 65% of the long term average annual inflow of 2,800GL.

Snowy Scheme Inflows For May 08 Apr 09



**WETTEST ON RECORD**

**AVERAGE**

**ACTUAL 2008/09**

**DRIEST ON RECORD**



# WESTERN RIVER RELEASES

## RIVER MURRAY CATCHMENT

Snowy Hydro complied with its obligation to target the Required Annual Release (RAR) from the Snowy-Murray Development to the River Murray catchment during the 2008-09 Water Year.

The total actual release volume was 888GL. This was made up of 816GL being the 2008-09 Required Annual Release calculated under the Snowy Water Licence including 200GL of inter-valley transfer from the Snowy-Tumut Development and 72GL of pre-release of the 2009-10 Required Annual Release as approved by the NSW Department of Water and Energy (DWE).

An inter-valley transfer is a transfer of water from one development to another development from which it is then released. Inter-valley transfers are a mechanism to transfer water between river valleys and can only be initiated by DWE. Snowy Hydro agreed to this inter-valley transfer at no cost to DWE.

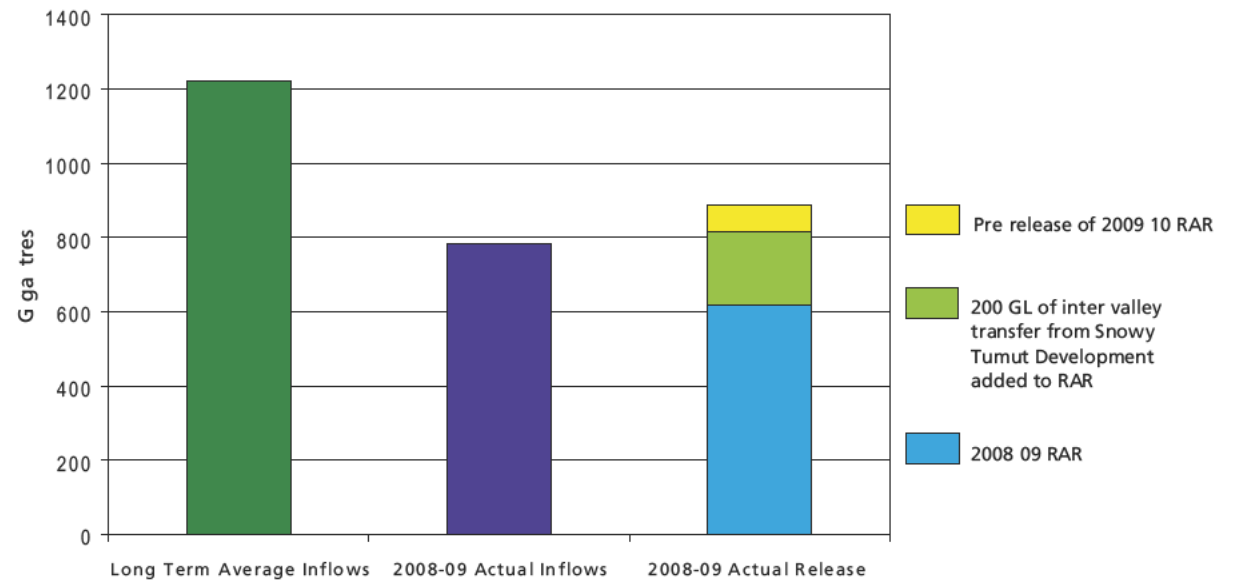
The calculated Required Annual Release volume for the Snowy-Murray Development is nominally set at 1,062GL. Due to the continuing drought, this nominal volume was reduced by the Dry Inflow Sequence Volume, the volume of water savings allocated to the Snowy-Murray Development to allow environmental releases to be made and a pre-release made in 2007-08.

For more information on River Murray Water visit [www.mdbc.gov.au/rmw](http://www.mdbc.gov.au/rmw)



Khancoban Dam Release Gates

Inflows and Releases to the River Murray Catchment during 2008-09





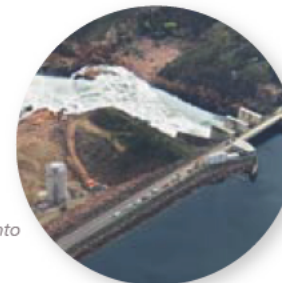
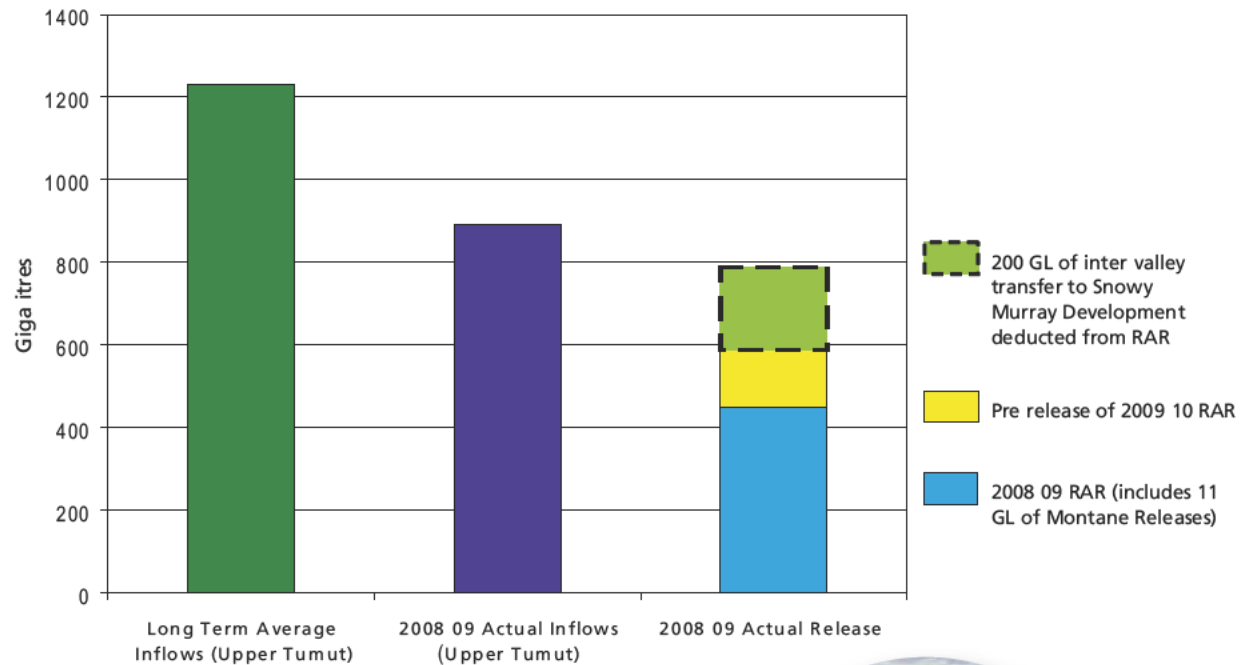
## MURRUMBIDGEE RIVER CATCHMENT

Snowy Hydro complied with its obligation to target the Required Annual Release (RAR) from the Snowy-Tumut Development to the Murrumbidgee River catchment during the 2008-09 Water Year.

The total actual release volume was 588GL. This was made up of 450GL being the 2008-09 Required Annual Release calculated under the Snowy Water Licence (this includes 11GL montane release) after the 200GL inter-valley transfer from the Snowy-Tumut Development was deducted, and 138GL of pre-release of the 2009-10 Required Annual Release as approved by the NSW Department of Water and Energy (DWE).

The calculated Required Annual Release volume for the Snowy-Tumut Development is nominally set at 1,026GL. Due to the continuing drought, this volume was reduced by the Dry Inflow Sequence Volume, the volume of water savings allocated to the Snowy-Tumut Development to allow environmental releases to be made and a pre-release made in 2007-08.

Inflows and Releases to the Murrumbidgee Catchment during 2008-09



Releases from Jounama into Blowering Reservoir



Talbingo Reservoir

# ENVIRONMENTAL RELEASES

## SNOWY RIVER ENVIRONMENTAL FLOWS

The key element of the Snowy River environmental flow arrangements is that the total volume of environmental flows each year must not be greater than the volume of the water savings achieved by the Governments to date.

Snowy Hydro is not responsible for securing water savings or for setting the release targets. Snowy Hydro is simply required to meet release targets notified to it by DWE under the Snowy Water Licence.

The table on the opposite page sets out the major steps and accountabilities in the process from securing water savings on the western rivers through to the actual release of environmental flows.



Water releases from Lake Jindabyne into Snowy River

MAJOR STEP	WHO IS RESPONSIBLE
Securing verified water savings from water savings projects on the River Murray or Murrumbidgee River (or purchase of water entitlements)	Water for Rivers <a href="http://www.waterforrivers.org.au">www.waterforrivers.org.au</a>
Transferring verified water savings into Environmental Entitlements.	NSW Dept of Water and Energy & VIC Dept of Sustainability and Environment <a href="http://www.dwe.nsw.gov.au">www.dwe.nsw.gov.au</a> & <a href="http://www.dse.vic.gov.au">www.dse.vic.gov.au</a>
Calculating annual allocations from the Environmental Entitlements each year (in arrears).	NSW Dept of Water and Energy & VIC Dept of Sustainability and Environment
Apportioning the annual allocations between the Snowy River Increased Flows, River Murray Increased Flows and the Mowamba Borrow.	NSW Dept of Water and Energy
Determining and then notifying Snowy Hydro of annual, monthly and daily release volumes for Snowy River Increased Flows.	NSW Dept of Water and Energy
Providing infrastructure to enable Snowy River Increased Flows from Jindabyne Dam and modifying existing infrastructure to enable Snowy Montane Rivers Increased Flows.	Snowy Hydro
Targeting releases of Snowy River Increased Flows from Jindabyne Dam and those structures nominated for Snowy Montane Rivers Increased Flows.	Snowy Hydro

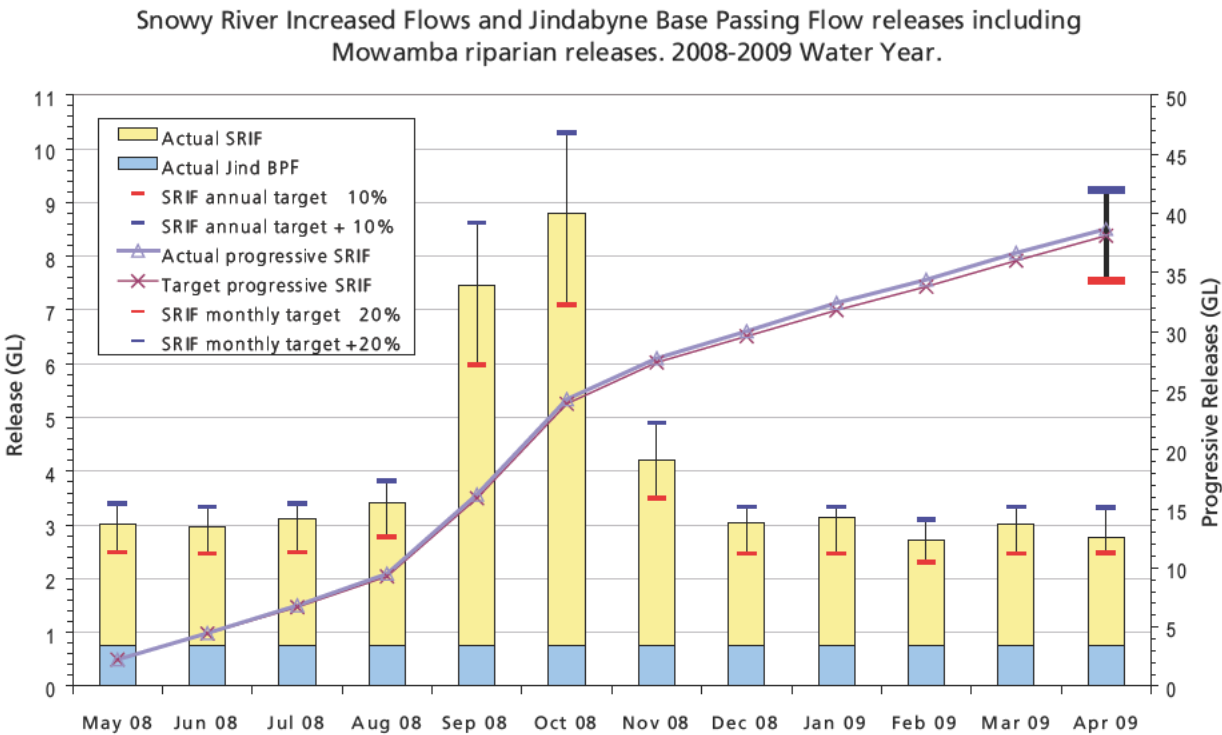
## SNOWY RIVER INCREASED FLOWS

Snowy Hydro complied with its obligation to target releases from Jindabyne Dam for environmental purposes during the 2008-09 Water Year.

The volume of Snowy River Increased Flows (SRIF) released from Jindabyne Dam during the 2008-09 Water Year was 38.7GL, which was 0.6GL in excess of the target volume of 38.1GL. That excess is well within the +/-10% annual tolerance allowed under the Snowy Water Licence.

The 2009-10 target will be adjusted to account for this additional release. In addition to the environmental releases, 8.5GL base passing flow was also released from Jindabyne Dam and 0.5GL riparian flow was released from the Mowamba Weir.

The following chart shows the actual cumulative Snowy River Increased Flow releases compared to the target for the 2008-09 Water Year.



You can download a full copy of the Snowy Water Licence from the NSW Government website.

[http://www.dwe.nsw.gov.au/water\\_trade/utilities\\_snowy.shtml](http://www.dwe.nsw.gov.au/water_trade/utilities_snowy.shtml)

## SNOWY MONTANE RIVERS INCREASED FLOWS

Snowy Hydro complied with its obligation to target releases from Tantangara Dam for environmental purposes during the 2008-09 Water Year. For 2008-09 Snowy Hydro was directed to make Snowy Montane Rivers Increased Flows from Tantangara Dam and Goodradigbee Aqueduct.

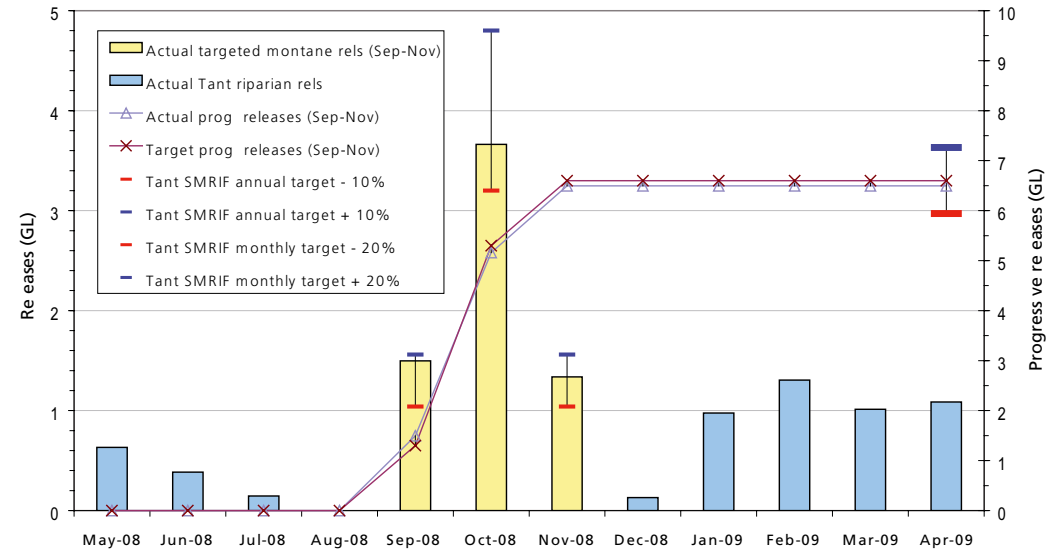
The target volume for Snowy Montane Rivers Increased Flows totalled 13.6GL with 6.6GL from Tantangara Dam to be released during the spring period and 7.0GL from Goodradigbee Aqueduct to be released over the whole water year.

The total actual montane release volume was 11.2GL, which was 2.4GL below the target. This was made up of 6.5GL from Tantangara Dam released during the spring period and 4.7GL from Goodradigbee Aqueduct over the whole water year. The 2009-10 montane target will be adjusted to account for this deficit of 2.4GL.

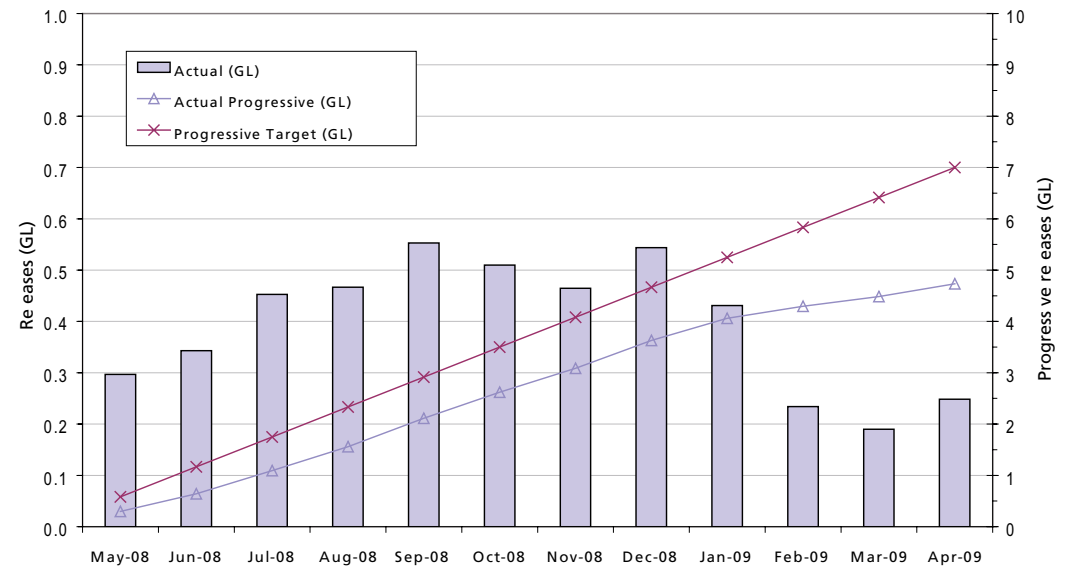
Riparian releases of 5.7GL were released from Tantangara Dam during the summer-autumn period to maintain the water supply for Cooma township during low inflow months and are accounted as Tantagara Base Passing Flows.

The comparison of the monthly release volumes for the Snowy Montane Rivers Increased Flows against the actual from Tantangara Dam and from Goodradigbee Aqueduct is set out in the graphs to the right.

Snowy Montane Rivers Increased Flows from Tantangara Dam. 2008 2009 Water Year.



Snowy Montane Rivers Increased Flows from Goodradigbee Weir. 2008 2009 Water Year



# STORAGES

## SNOWY SCHEME STORAGE FOR 2008-09

Snowy Scheme storage levels are referred to from time to time in different measurements, they being Active Storage and Gross Storage. Active Storage is the water that generally can be accessed by either pumping or through release via dams or through power stations. Gross Storage is the total amount of water behind the dam wall including the water that cannot be accessed due to the design of the Snowy Scheme.

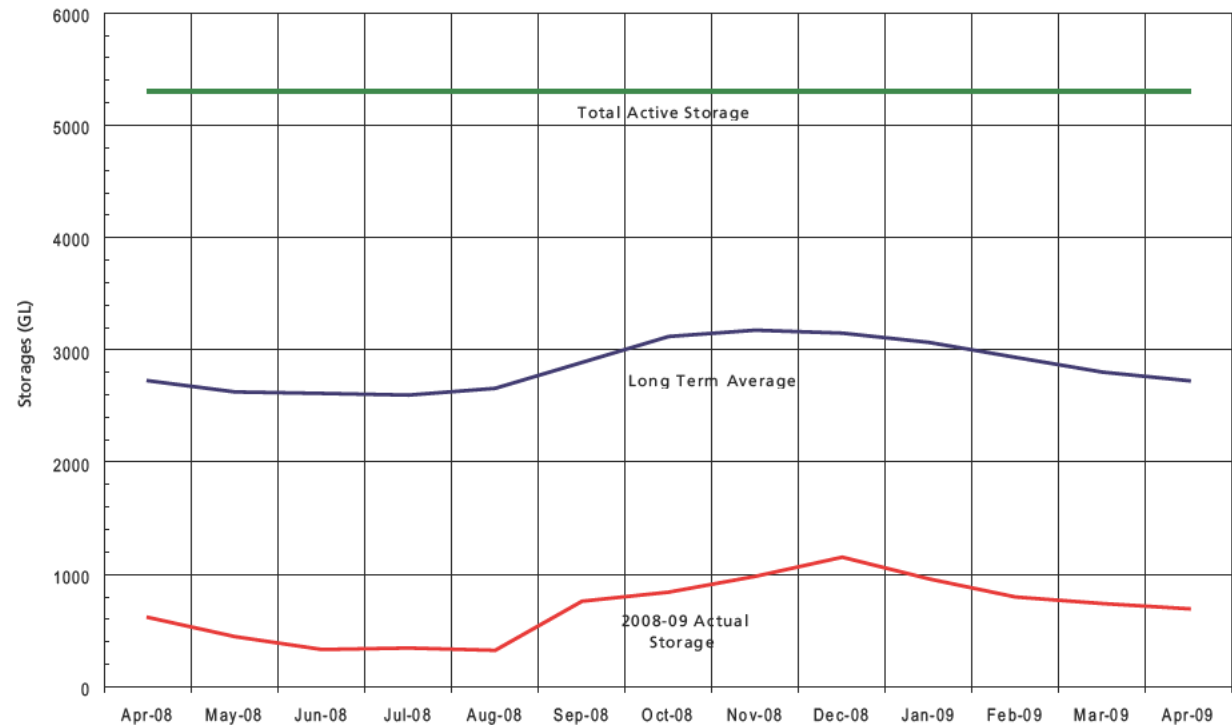
For the purposes of our business operations, active storage is used whereas recreational users are generally more interested in and familiar with gross storage. For example, Lake Jindabyne could experience a 0% active storage level but the lake itself would be then at approximately 42% gross storage. This remaining water cannot be accessed via the pumping station due to the physical design limitations of the Snowy Scheme.

At the start of the 2008-09 water year, Snowy Scheme active storage was 617 GL. This is equivalent to 12% of the Snowy Scheme active storage capacity. During the 2008-09 Water Year the Snowy Scheme active storage increased by 77GL. At the end of the water year the active storage was 694GL, which is 13% of the Snowy Scheme active storage capacity.



Lake Eucumbene

Snowy Scheme Active Storage For 2008-09 Water Year



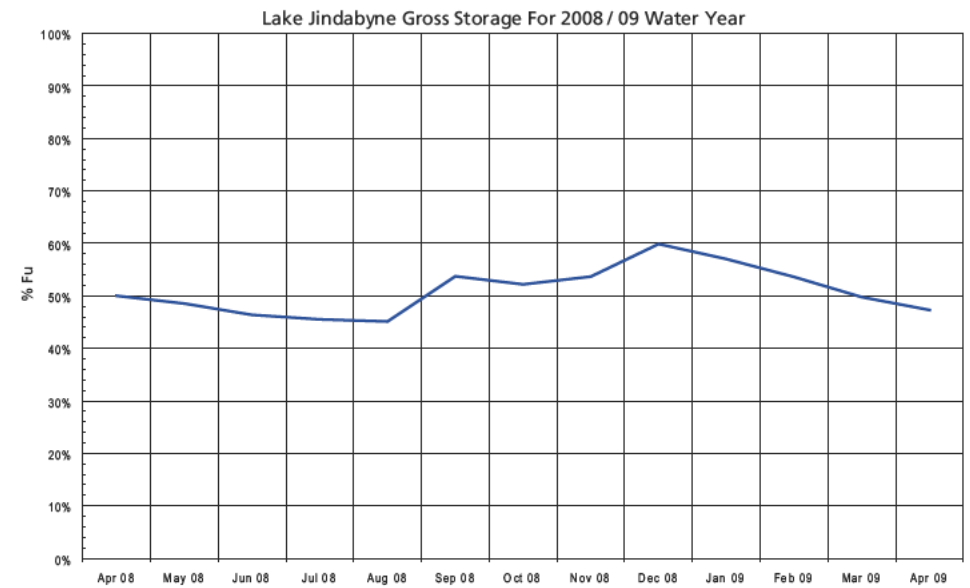
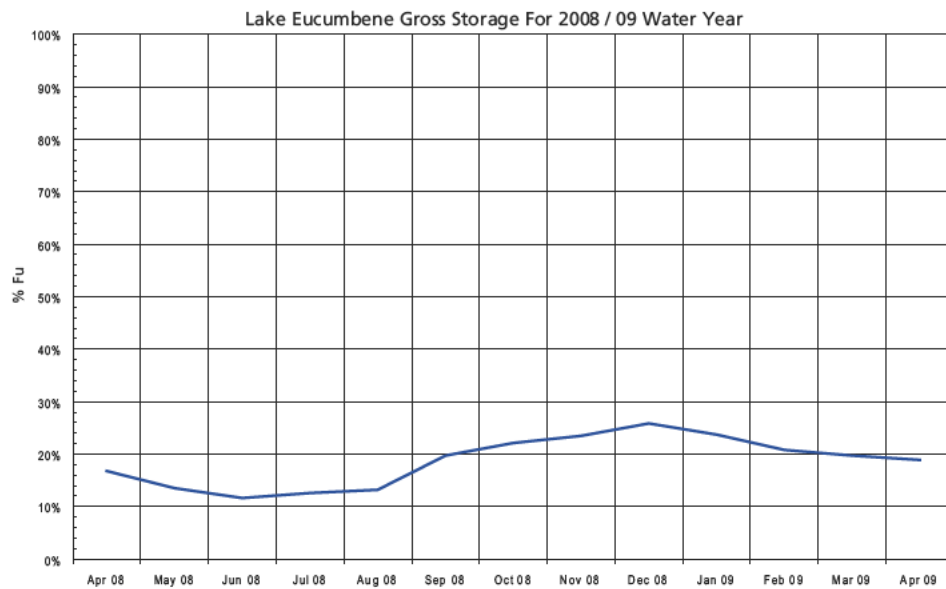
## LAKE LEVELS

Snowy Hydro receives enquiries about whether the occasional large storm that hits the area or whether the snow melt from a big winter season will fill the dams. This is not the case. Due to the requirement to maintain the annual releases required under the Snowy Water Licence, a number of consecutive years of above average inflows will be required to see storage levels increase to long term average levels.

Lake Jindabyne is larger than Sydney Harbour and Lake Eucumbene is around nine times the size of Sydney Harbour. These are huge storages and one good snow year will not be enough to fill the lakes.

Snowy Hydro reports gross storage levels to local tourism operators and the local community on our website.

Lake Levels for our three main storages of Jindabyne, Eucumbene and Tantangara are provided weekly and are available at [www.snowyhydro.com.au](http://www.snowyhydro.com.au)





*Talbingo Dam, Reservoir and Tumut 3 Power Station*

Snowy Hydro Limited

PO Box 332  
COOMA NSW 2630

Tel: 1800 623 776

[www.snowyhydro.com.au](http://www.snowyhydro.com.au)

© Copyright Snowy Hydro Limited 2009





**snowyhydro**  
renewable energy Limited