

# ENVIRONMENT REPORT

2013-2014

**snowyhydro**  
*renewable energy*





# ENVIRONMENT REPORT CONTENTS

- OUR COMMITMENT** 01
- MAINTAINING ASSETS** 03
  - OUR PHYSICAL FOOTPRINT 04
  - OUR ASSETS USE LOW CARBON INTENSITY FUEL 04
  - THERE IS A LOW RISK OF IMPACT FROM PLANT FAILURE 05
  - THERE ARE EFFECTIVE BARRIERS BETWEEN OUR PLANT AND ENVIRONMENT 06
- ENVIRONMENTAL MANAGEMENT** 07
  - A ROBUST ENVIRONMENTAL MANAGEMENT SYSTEM 08
  - CASE STUDY: REFINING TRANSFORMER OIL 09
- OUR PEOPLE AND STAKEHOLDERS** 11
  - SKILLED PEOPLE AND STRONG STAKEHOLDER RELATIONSHIPS 11
  - CASE STUDY: THE SPOTTED TREE FROG 13
  - CARE FOR THE LAND WE OPERATE 14
  - CASE STUDY: REVEGETATION AT GUTHEGA 14
- LAKES & FORESHORES** 15
  - WHO MANAGES WHAT? 16
  - WHERE IS YOUR EVENT TAKING PLACE? 17
  - CAMPING NOT PERMITTED ON LAKE FORESHORES 18
- VERIFICATION STATEMENT** 19
- WHERE TO GET MORE INFORMATION** 20



## OUR COMMITMENT

Managing the impacts of Snowy Hydro's operations in unique environments is essential to our ongoing business success.

From the very first days of construction of the Snowy Scheme, the Snowy Mountains Authority recognised the potential environmental impacts of the Scheme. In 1955, the budget for soil conservation alone was £200,000, the equivalent of \$8 million in present day terms. This was the starting point for the business commitment to responsible management of the environment.

Today, community and regulatory expectations for environmental performance have evolved for issues such as greenhouse gas emissions and environmental flows.

Snowy Hydro's response to such change has been to continually improve and use our assets to maximise electricity market opportunities while managing our impacts and contributing positively to the environment. We do this through:

- Well designed and maintained assets.
- Establishing and maintaining a robust environmental management system.
- The skills of our people and strong stakeholder relationships.
- Being responsible stewards of the land where we operate.



Talbingo Dam Outlet Works Tower

## WELL DESIGNED AND MAINTAINED ASSETS

Snowy Hydro's ability to protect the environment from harm starts with the type and design of our assets.

### OUR PHYSICAL FOOTPRINT

Many of the Snowy Scheme assets, such as 140kms of tunnels and two power stations, are located underground. This means there are inherent limits on the extent of environmental impacts.

Similarly, our combined 620MW Southern Gas power stations in Victoria only cover 8 hectares of land.

Snowy Hydro acknowledges that the original design of collecting, diverting, storing and releasing water for irrigation had an impact on the scheme catchments. To some extent this impact is offset by a significant investment in releases of environmental flows to affected catchments which have been occurring since 2002.

### OUR ASSETS USE LOW CARBON INTENSITY FUEL

Snowy Hydro's 2012-13 National Greenhouse and Energy Report (NGER) was externally audited in May 2014. The auditor, RSM Bird Cameron, found the report to be accurate in all material respects.

In 2012-13 Snowy Hydro reported 19,436 tonnes of total liable greenhouse emissions. These emissions are predominantly from our two gas fired power stations in Victoria.

With 4,100MW of hydro generation assets, each year on average Snowy Hydro produces 4,500 gigawatt hours of renewable energy. In doing so, Snowy Hydro prevents around 4,500,000 tonnes of carbon dioxide being released each year. That's the equivalent of the exhausts of around 1 million cars.

### WATER RELEASES FOR ENVIRONMENTAL PURPOSES (GL)

RIVER CATCHMENT	2012-13	2013-14
Snowy River below Jindabyne Dam	154.7	183.4
Snowy River below Island Bend Dam at Diggers and Tolbar Creeks	Began in 2013-14 water year	16.9
Murrumbidgee River below Tantangara Dam	26.0	29.9
Murrumbidgee River at Goodradigbee River	9.8	7.6
Geehi River at Middle Creek	Began in 2013-14 water year	20.7

**THERE IS A LOW RISK OF IMPACT FROM PLANT FAILURE BECAUSE OF OUR MAINTENANCE PHILOSOPHY**

Another factor contributing to Snowy Hydro's ability to protect the environment from harm is the business' approach to plant and asset maintenance.

Snowy Hydro's role as a provider of financial risk and hedge products to NEM participants drives a strong business imperative to have plant available and ready to run reliably at all times.

This means that our plant is constantly being monitored, maintained and upgraded to avoid the risk of defects and outages. The focus on plant reliability and availability means that the scope for harm to the environment from faulty or failed assets is substantially reduced.

# THERE WERE NO INCIDENTS THAT RESULTED IN MATERIAL HARM TO THE ENVIRONMENT

**THERE ARE EFFECTIVE BARRIERS BETWEEN OUR PLANT AND ENVIRONMENT**

Snowy Hydros assets are designed with effective barriers to prevent direct impacts to the environment, and with redundancy built in.

For instance, hydro power stations utilise oil containment and separation systems with multiple components including drainage pits, oil skimmers and oil water separators prior to discharging station water to the environment.

A key indicator of the health of the Company's plant maintenance is our compliance with operating environmental licences which regulate power generation activities in NSW and Victoria. At all licence sample points, which is effectively all hydro and gas power stations, there were no exceedances of licence discharge or emissions limits in FY 2013-14.



Gas fired power stations in Valley Power (air emissions) and Laverton North (air emissions) were also 0.

# ENVIRONMENTAL MANAGEMENT



View from Black Perry Lookout

## A ROBUST ENVIRONMENTAL MANAGEMENT SYSTEM

To deliver on our commitment Snowy Hydro has developed and implemented a rigorous framework to manage all day to day activities. Systematic improvement of work practices and processes across the business is built into this framework.

An Environmental Management System (EMS) has been in place at Snowy Hydro since June 2000.

### OUR CERTIFIED EMS PROVIDES A ROBUST FRAMEWORK FOR EVERYTHING WE DO.

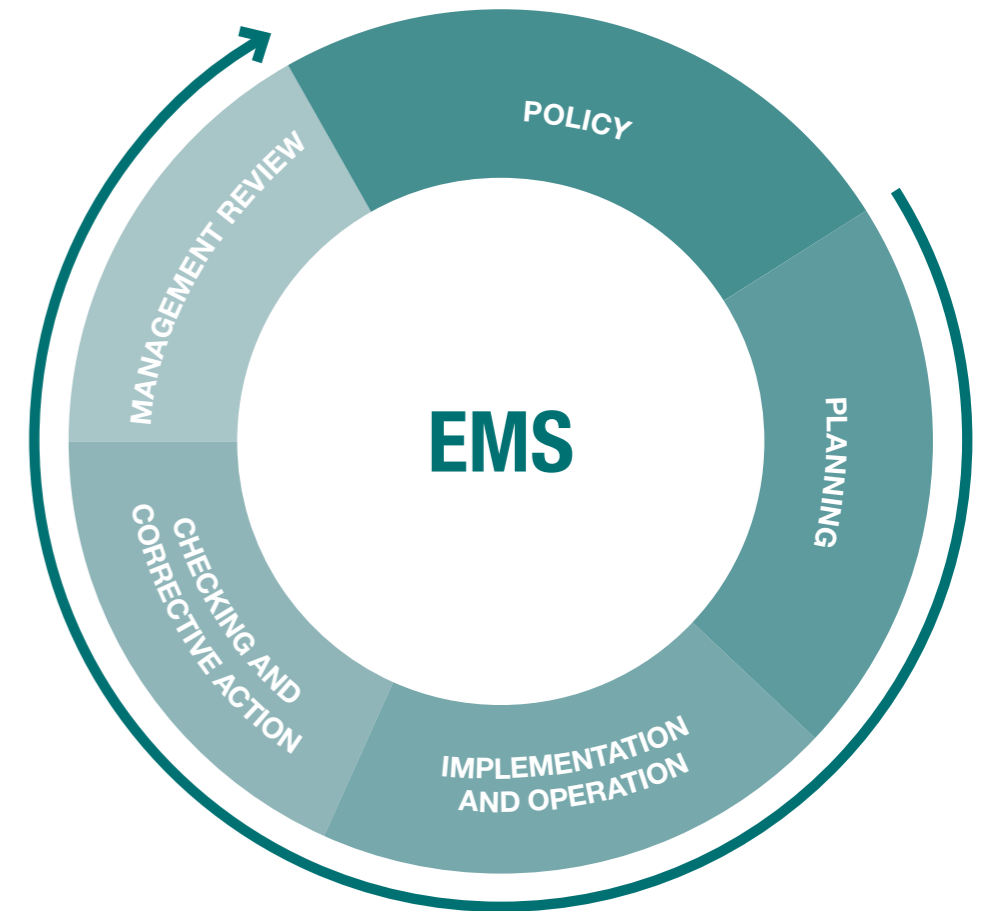
The EMS provides a systematic way of setting standards for performance, identifying risks, managing impacts and allocating responsibility for actions. It makes every individual in the business a party to achieving our commitment.

The EMS has been independently certified to the ISO14001 International Standard for environmental management systems each year since 2000.

### WHILE OUR COMMITMENT IS BASED ON OUR BELIEFS – WE ALSO HAVE LEGAL OBLIGATIONS

Our business success is underpinned by the belief that it is important to protect the environment from harm arising from our work.

We are also required to comply with laws to ensure we protect the environment. Every employee has a personal accountability to make sure they understand and comply with legal obligations and minimize our impact on the environment when we are at work.



KEY LEGAL REQUIREMENTS	EXAMPLES OF WHAT WE DO TO COMPLY
NSW Protection of the Environment Operations Act	Monitoring of pollutants from hydro plant.
Victorian Environment Protection Act	Monitoring of emissions from gas fired plant.
Occupation of Kosciuszko National Park	Carry out work in accordance with a management plan.
National Greenhouse and Energy Reporting Act	Produce a report showing greenhouse emissions and energy consumption and production.
NSW Water Management Act	Carry out work on waterfront land with controlled activity approvals.
NSW Noxious Weeds Act	Managing weeds.

## CASE STUDY REFINING TRANSFORMER OIL

At Snowy Hydro we are constantly looking for opportunities to improve the way we manage our current waste streams which will lead to an environmental benefit. Since 2009 Snowy Hydro has sent used transformer oil to a specialised facility in central NSW for re-refining and then purchased re-refined oil back for use in its transformers. The approach allows our transformer oil to be refined an indefinite number of times, reducing our reliance on new oil supplies without sacrificing quality or performance.



# OUR PEOPLE & STAKEHOLDERS



## SKILLED PEOPLE AND STRONG STAKEHOLDER RELATIONSHIPS

Successfully delivering on our commitment to the environment relies on Snowy Hydro's assets and business systems having competent people to operate and maintain them.

### WE START BY RECRUITING GOOD PEOPLE

Our care for the environment starts at the recruitment phase where potential employees are put through a process of determining their skills. Even more importantly, their fit with the organisation's values is essential. This of course includes their commitment to caring for the environment where we operate.

### WE SET STANDARDS FOR PERFORMANCE

Clear-cut expectations for environmental accountabilities are established at all levels through the EMS operational controls and procedures. An Environmental Standards Handbook was produced in 2014 that clearly illustrates the expected standard for performance for every activity that interacts with the environment.

## WE INVEST IN COMPETENCY

With operations in a variety of environments, being hazard managers and being aware of legal obligations is crucial. A program of training in key environmental competencies has been established and delivered through 2014.

This year the focus of training has been on Environmental Operational Risk and Legal Compliance. Training in incident management and investigation has recently commenced.

PROGRAM	NUMBER OF PEOPLE TRAINED
Environmental (Op) risk	212
Environmental compliance	120
Environmental standards	160

## WE HAVE A CAPABILITY TO RESPOND EFFECTIVELY TO EMERGENCIES

Each Snowy Hydro region has a trained and equipped emergency response team which is tasked with acting in the event of an environmental incident / emergency. There were no environmental emergencies in 2014.

## WE HAVE A DEDICATED SUPPORT TEAM

A team of dedicated environment professionals continually improve the corporate systems and provides technical advice to day to day functions.

Snowy Hydro Environmental officers at work





## WE DELIVER THROUGH OUR WORKING RELATIONSHIPS

Snowy Hydro operates in Victoria and NSW across a range of environments, from urban industrial areas, to tourist destinations and remote bush locations. Wherever we are, we seek out and work with community partners and other stakeholders to share knowledge and invest efficiently in on-ground work.

As a lessee/custodian of land within the Kosciuszko National Park, Snowy Hydro has worked with the National Parks and Wildlife Service (NPWS) since the agency was established. The legal framework for access and use are clear and implemented through a detailed environmental management plan. Additionally, Snowy Hydro works cooperatively with NPWS to manage on ground issues when they interact with the business activities.

## THE COMMUNITY RECOGNISES OUR ENVIRONMENTAL PERFORMANCE

The local community recognises Snowy Hydro's commitment to environmental management. In telephone surveys conducted every two years since 2008, a consistently high number of respondents said that Snowy Hydro was environmentally responsible. For example in 2012, over 70% of the community believe that Snowy Hydro is an environmentally responsible company.



Spotted Tree Frog

## CASE STUDY: THE SPOTTED TREE FROG

Snowy Hydro and the Office of Environment and Heritage (OEH) have implemented an agreement to ensure Snowy Hydro's operational and maintenance activities do not impact populations of critically endangered *Litoria spenceri* (Spotted Tree Frog) located downstream of our assets. Spotted Tree Frogs (*Litoria spenceri*) have been reintroduced as part of an OEH frog recovery program and this agreement will provide certainty around the timing of maintenance activities and give the frogs the best chance to establish. Spotted Tree Frogs became extinct in NSW in 1998 and are now listed as critically endangered both in NSW and nationally.

STAKEHOLDERS AND PARTNER	COOPERATIVE WORKS
Local Government	Make resources available to address environmental issues and facilitate community use of SHL owned land.
NSW Office of Environment and Heritage	Cooperative conservation initiatives (see case study below) and weed management.
Crown Lands	Cooperative weed and land management programs.
Rural Fire Service	Cooperative bushfire mitigation programs.
Local Lands Service	Cooperative weed management programs.
Neighbours and tourist operators	Make resources and land available through licences/leases for grazing and tourism uses.
NSW Fisheries and Maritime Services	Cooperative programs to manage lake and river safety and duty of care.

## CARE FOR THE LAND WHERE WE OPERATE

Snowy Hydro manages around 6,400 hectares of land inside Kosciuszko National Park and around 24,000 hectares of freehold land.

Much of this land is foreshore around water storages like Jindabyne, Eucumbene, Khancoban, Talbingo and Jounama, as well as numerous smaller storages.

Electricity generation and water release requirements mean that the location of the water line and area of foreshore will change from day to day. Depending on the intensity and patterns of public use, this can lead to a range of safety and environmental issues appearing seasonally or for irregular periods of time, including

- impacts that result from people camping on foreshores such as poor waste disposal,
- erosion from vehicle access via multiple tracks,
- weed spread; and
- bushfire.

Snowy Hydro is committed to addressing these issues directly through a substantial land management program and also seeks partnership arrangements with tourism operators, public users and other agencies to manage issues cooperatively.

Revegetation work at Guthega

## CASE STUDY: REVEGETATION AT GUTHEGA

In December 2012 Snowy Hydro sought approval from NPWS to install two precipitation gauges at our weather monitoring station at Guthega Dam. An application was prepared and the activity was approved with conditions. One condition required Snowy Hydro to undertake revegetation of the slope below the precipitation gauge site as a way to reduce the visual impact for Guthega Village users. Snowy Hydro prepared a vegetation plan detailing the planting area, plant species, site preparation and maintenance requirements. During this preparation, discussions with NPWS revealed that they would be undertaking revegetation works nearby at the same time. Whilst not normal practice, the opportunity was recognised to complete both revegetation works in a more cost effective way by teaming up with the NPWS.

A site visit in December 2013 set out the perimeter of the area to be revegetated, ensuring the plantings would not affect the collection of weather data at the site. The revegetation works were completed in late January 2014, and an audit of the site against the requirements of the project and the plan confirmed that the works had been successfully completed.

Successful completion of these revegetation works demonstrates that Snowy Hydro is a willing participant in collaborative programs.



# LAKES & FORESHORES



## LAKES & FORESHORES

Since construction of the Snowy Scheme, access to lakes and foreshores has been provided for the benefit of the public for a variety of recreational uses. Snowy Hydro is committed to continuing to provide that access.

### WHO MANAGES WHAT?

With so many large water storages, the Scheme has become a base for many tourism and recreational opportunities. Therefore it is easy to assume that Snowy Hydro has accountability for all these lakes and foreshores. The reality is somewhat different.

With a number of these storages adjoining national parks or private lands, many different agencies and organisations are responsible for different aspects of recreational management and access.

The following table sets out the major accountabilities across Scheme storages:

ACTIVITY	WHO IS RESPONSIBLE
Recreational Boat Access <i>**Snowy Hydro allows boat access on all major storages. Smaller storages such as Island Bend, Guthega and Tumut Pond are prone to having rapid rising and falling of levels therefore boating is not recommended.</i>	<ul style="list-style-type: none"> <li>• Shire Councils</li> <li>• NPWS for locations within the National Park i.e. Waste Point at Jindabyne</li> <li>• Private lakeside operators i.e. Buckenderra Holiday Park on Lake Eucumbene</li> </ul>
Recreational Boating Safety	<ul style="list-style-type: none"> <li>• NSW Maritime</li> <li>• NSW Water Police</li> <li>• NSW Marine Rescue</li> </ul>
Accommodation & Camping	<ul style="list-style-type: none"> <li>• Private Caravan Parks</li> <li>• NPWS i.e. Denison Camping Area, Lake Eucumbene</li> </ul>
General Public and vehicular access	<ul style="list-style-type: none"> <li>• Snowy Hydro for areas such as Yens Bay, Rushes Bay, Middlingbank, Seven Gates around Lake Eucumbene</li> <li>• Snowy River Shire Council for the southern foreshore of Lake Jindabyne from Curiosity Rocks to Coppertom Point (Note: This includes the foreshore area and footpath in front of Jindabyne township).</li> <li>• NPWS for the foreshore areas that adjoin the KNP</li> </ul>
Stocking of Trout in Snowy Scheme Lakes	<ul style="list-style-type: none"> <li>• NSW Fisheries</li> </ul>
Lakes based event approvals	<ul style="list-style-type: none"> <li>• Refer page 17</li> </ul>

# WHERE IS YOUR EVENT TAKING PLACE?

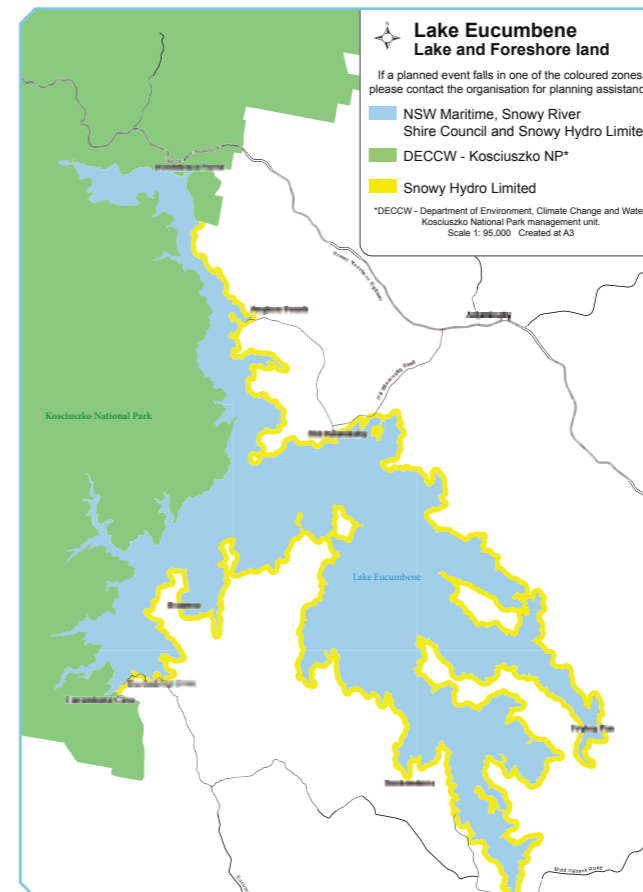
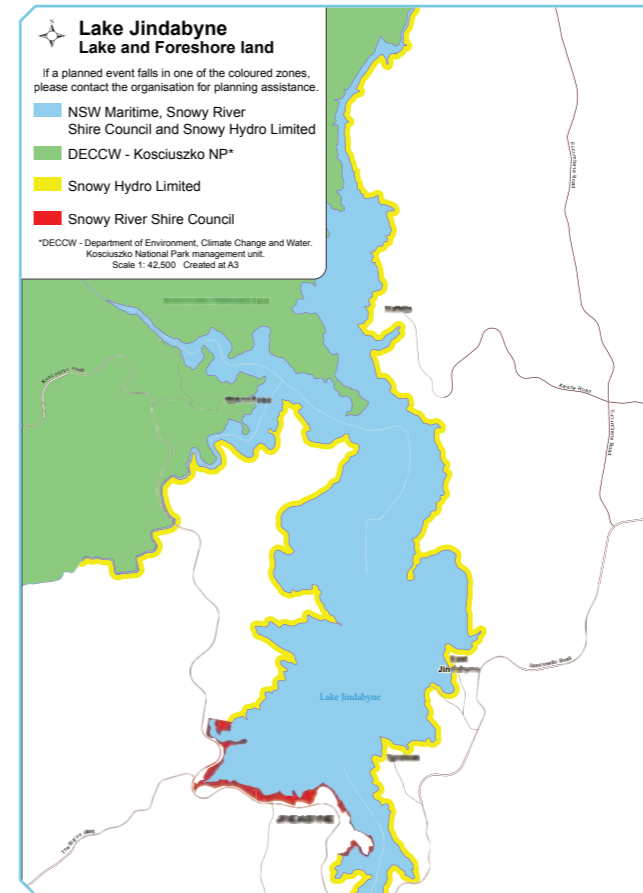
The Lakes of Jindabyne and Eucumbene are popular areas for a range of activities and events. These events provide an opportunity to promote the region and are an important part of local community life. Given the various land ownership arrangements, regulatory and licence obligations of each stakeholder, it is critical that all events and commercial activities are properly managed and importantly, legally conducted.

This step by step guide provides a clear overview of the specific needs dependant on the location or type of event or activity taking place. Using the below table, and referencing against the maps opposite, you can see the approvals required for running events and activities on Lake Jindabyne and Lake Eucumbene.

LAND ONLY (in pink only)	LAND ONLY (not in pink only)	INVOLVES ANY WATER
Obtain an event application pack from Snowy River Shire Council Environmental Services Department Jindabyne 02 6451 1550 <a href="http://www.snowyriver.nsw.gov.au">www.snowyriver.nsw.gov.au</a>		
Submit Development Application to Snowy River Shire Council	Submit Development Application to Snowy River Shire Council	Contact NSW Maritime to obtain Aquatic Licence information ph: 13 12 56
	Obtain a licence from Snowy Hydro. Contact <a href="mailto:lands.team@snowyhydro.com.au">lands.team@snowyhydro.com.au</a>	
	Snowy Hydro required to sign Development Application (land owners consent)	
	Submit Development Application and Snowy Hydro licence to Snowy River Shire Council	
Development Application Approved (subject to Council determination)		
		Submit Aquatic Licence application to NSW Maritime with a copy of Council Approval
		Aquatic Licence Approved (subject to NSW Maritime determination)

- Approval timeframes for larger events may be up to three months.
- Separate approvals from Department of Environment Climate Change and Water (DECCW) will be required if your event takes place in any part of Kosciuszko National Park.
- Some community events are exempt from this process.

- Land only (in pink only)
- Land only (not in pink only)
- Involves any water
- Involves all 3
- Land only (not in pink) and involves any water



## CAMPING NOT PERMITTED ON LAKE FORESHORES

Camping is not permitted on lake foreshores except for in established caravan park areas and NPWS areas such as Denison at Lake Eucumbene.

Snowy Hydro cares for over 24,000 hectares of land outside Kosciuszko National Park, approximately 600km of this is foreshore around water storages like Jindabyne, Eucumbene, Khancoban and Talbingo/Jounama, as well as numerous smaller lakes.

These foreshores play a crucial role on the edge of storages holding the water in the Scheme, but they also provide opportunities for a variety of recreational and community activities. This creates the enormous challenge in keeping foreshores safe and free from rubbish and human waste. The scale of the area and the fact that visitors are welcome to access most of the foreshore any time, makes this a big challenge. Snowy Hydro is committed to the task, but frankly cannot do it without the active contribution of everyone who enjoys and benefits from the use of these areas, from farmers to fishermen, local tourism businesses and Councils.

Everyone can contribute to helping with these challenges by

- keeping to the existing tracks,
- taking rubbish with you,
- using toilets provided; and
- camping only in designated areas and caravan parks. You can also report antisocial or dangerous behaviour to the local police when you see it.

The long term plan for these foreshores is to maintain them as safe and environmentally healthy edges to the hydro storages, which in turn will ensure that their recreational value is not impacted over time. We ask that everyone who enjoys use of these areas to support us in working together to make this happen.

**VERIFICATION STATEMENT**

Snowy Hydro Limited commissioned BSI to independently verify compliance against its EPA operational licences (Environmental Protection and Waste Discharge) conditions relating to its Water Operations and its Gas-fired Power Station Operations, respectively, for the 2013-2014 Water Year.

**Responsibilities of the Verifier:**

The audit was conducted using recognised assessment techniques based on ISO19011 with the 2013-2014 Water Operations Report as the core reference. The audit reviewed Snowy Hydro Limited's annual Environmental Performance Statements, results of compliance monitoring programs, documented procedures and interviews with operational staff.

**Scope:**

Numerical values for EPA compliance monitoring programs reported in the 2013-2014 Water Operations Report were compared against all licence conditions including concentration limits of pollutants stipulated in each of Snowy Hydro's four EPL's. These are:

- EPL 10397 (Cabramurra Town Sewage Treatment Plant, NSW)
- EPL 10515 (Snowy Mountains Hydro-Electric Scheme, Kosciuszko NP, NSW)
- EA 62044 (Laverton Power Station, VIC)
- LA 48018 (Valley Power, LaTrobe Valley, VIC)

Records of EPL sampling results for the year 2013-2014, as well as routine infrastructure maintenance and inspections and calibration of monitoring equipment, were also reviewed.

**Verification Statement:**

Based on the review process applied during the audit, there is sufficient evidence to support that the Water Operations Report for the 2013-2014 Water Year pertaining to Snowy Hydro Limited's compliance to EPA operational licence conditions is materially correct and is a fair representation of a commitment to its environmental responsibilities.

Dr David Holliday  
Environmental Auditor  
RABQSA Certificate no. 7947694-116404  
20 June 2014

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**WHERE TO  
GET MORE  
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