

November 2012

# snowyhydro

## NEWS

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**ISSUE 18**





Murray 1 Power Station

# Reflecting on the year 2012, and what the New Year will bring

**Terry Charlton**  
Managing Director & CEO

As we race towards Christmas and after a year seemingly shorter than the last one, I would like to reflect on what has been a challenging year.



I know many people have felt the pain of an economy that has been slowing, a heightened uncertainty about the future especially in regards to household upward cost pressures, which are very real.

As I talk with people across the Snowy Mountains Region, in the street, the shops or in presentations to service clubs and Chambers of Commerce, I am often asked about electricity prices, about employment and about the swings and roundabouts of our governments. My frequent response is to look ahead and remain positive. I am very positive about Snowy Hydro and how we operate in our local communities.

In the towns across our region, I observe increasing enthusiasm for doing new things and for undertaking initiatives to improve local commerce and recreational amenity and tourism. In Tumut the annual business excellence awards are bigger and better each year, in Cooma the launch of the Cooma Tertiary Learning Centre is well advanced, the Snowy Hydro SouthCare Rescue helicopter service is getting wider support than in previous years and local festivals and events are enthusiastically supported. Releases into the Snowy River via flushing flows in Spring were fulfilled.

This all points to a very positive outlook for the region and we have had some good rains and a good snow season that has seen lake levels recover over the past 12 months.

Snowy Hydro continues to grow its business with the focus on the Snowy Scheme upgrade works and with building our water storages, helped by the arguably 1/500 year rainfall event in March.



Snowy River releases from Jindabyne cone valves

The National Electricity Market has been flat for most of the year with overall demand for electricity well down on previous years, reflecting the decline in manufacturing industry and the extra costs of electricity which is changing consumption demand patterns.

This pattern is likely to continue for some years but our business model will ensure good financial results and thus continued upgrade work for many years to come.

***Schools, distance learning opportunities, medical services and housing choice are all elements of the success story that we have to work on.***

Employment in Snowy Hydro across the Region has increased and we get many applicants for the positions we advertise, but we do have to continue to offer community and town attractions to get candidates to settle in our area.

Schools, distance learning opportunities, medical services and housing choice are all elements of the success story that we have to work on. Progress is being made. The Company is working well with the local communities and this will not change. We do get good, frank feedback and do our best to respond.

We are five months into the 2013 financial year, the financial outlook continues strong for the Company, and the benefits of continuous improvement across the business are evident. It is very rewarding even though there are challenges and, at times, frustrations, but this is evident whether you are in large or small business.

Snowy Hydro's commitment to safety is second to none and this commitment flows into our communities with the Snowy Hydro Young Driver Training Program that again this year involved over 300 students, and our ongoing support of the Snowy Hydro SouthCare rescue helicopter.

Please have a safe and joyous festive season; and to our contractors, employees, friends, business and community leaders, thank you for your support of our Company. We look forward to working with you in 2013.





Tumut 3 Power Station



# Snowy Hydro - A renewable energy company?

**Paul Smyth**

Executive Officer, Risk Management,  
Technology & Planning



This article addresses the following questions from the community: “Is Snowy Hydro a renewable energy company?” “Why isn’t Snowy Hydro investing in wind?”, and “Snowy must be doing well out of green power?”.

## Is Snowy Hydro a renewable energy company?

Almost all of the electricity produced by Snowy Hydro is renewable hydro power, generated by the Snowy Mountains Hydro-electric Scheme. Only a very small portion comes from Snowy Hydro’s two gas fired “peaking” power stations in Victoria.

The Snowy Scheme is the “powerhouse” of the Snowy Hydro business making us a “renewable energy company”. Our fuel is water.

However, the vast majority of Snowy Hydro’s revenue does not come from selling our hydro electricity, but instead from the electricity price protection, or ‘insurance’, contracts we sell to our various customers. These customers include the likes of Origin and AGL, but also households and businesses through Snowy Hydro’s electricity retail business, Red Energy.

These contracts enable Snowy Hydro’s customers to ensure that the price of their electricity is known with certainty, especially at times of high electricity demand when electricity prices can “spike” to very high prices (hence the concept of price protection, or “insurance”). Snowy Hydro uses both our hydro and gas fired generators to support the delivery of our contract obligations.

Thus, from a commercial perspective, Snowy Hydro can be thought of as an electricity price insurance business, powered predominantly by a renewable form of electricity generation.

## What about Snowy Hydro benefiting from green power?

The rules for Australia’s mandatory renewable energy scheme, the biggest “green scheme” in Australia, are based on encouraging the construction of new renewable energy generation, such as wind farms.

Under the mandatory renewable scheme, electricity produced from renewable generators built after 1997 is eligible to receive renewable energy certificates (“REC’s”). REC’s can then be sold.

*...the Snowy Scheme is deemed to be “old” renewable energy, and is ineligible to receive REC’s...*

However, only a small fraction of electricity produced, from “old” renewable generators (those built before the renewable energy scheme commenced) is eligible to receive REC’s. Because of this, the vast majority of the electricity produced from the Snowy Scheme is deemed to be “old” renewable energy, and is ineligible to receive REC’s, hence we don’t earn “green” revenue.

This arrangement was put in place so that the program would strongly encourage the development of “new” renewables, but still provide “old” renewables with a small financial incentive to continue to maintain, and even improve, the “old” renewable generators.



Consistent with the intent of the mandatory renewable energy scheme, Snowy Hydro continues to make large, ongoing, investments in the upkeep, and the enhancement, of the renewable energy assets of the Snowy Mountains Scheme.

For example, increased renewable electricity production will come from the recent installation of new and more efficient turbines at Tumut 3 and Guthega power stations, and from new small hydro power stations at Jindabyne and Jounama dams.

Further small increases in electricity production will come from the installation of new and more efficient turbines at Tumut 1, Tumut 2 and Murray 1 power stations in the coming years.

Another important investment is the Snowy precipitation enhancement ("cloud seeding") program, which will increase the amount of water available for Snowy Scheme generation, and hence increase our production of renewable electricity.

### Why isn't Snowy Hydro investing in wind power?

Snowy Hydro has, for some time, been actively exploring opportunities to invest in wind and other emerging forms of renewable power, such as solar and geothermal.

Snowy Hydro produces sufficient "new" renewable energy from the Snowy Scheme to satisfy its own current internal need for REC's. This need arises mainly from obligations on Red Energy (our gas and electricity retailer) to buy "new" renewable energy to supply to its electricity customers.

## *...Snowy Hydro has not had any need to invest in wind generation ...*

This has meant that Snowy Hydro has not had any need to invest in wind generation to meet our own internal demand for REC's.

Competition in the renewable generation sector has been very high. Anticipating a new and growing market in renewable energy, many companies have pursued the development of wind farms,

but to an extent well in excess of need. And, more recently, various government incentives for household solar PV have resulted in the production of even more REC's.

This has created a persistent excess of supply over demand. In short, it's been unattractive for Snowy Hydro to invest large amounts of capital in wind farms.

It is also worth noting that even the largest of Australia's electricity companies, Origin Energy, AGL Energy and EnergyAustralia (formerly known as TRUenergy), are impacted by the same commercial forces as Snowy Hydro when it comes to the renewable energy market.

Notably, none of these companies has a strategy of building and owning all of their own renewable generation, in fact quite the opposite. For example, AGL Energy, which makes much of its renewable energy branding and leadership, is progressively selling the wind farms that it builds.

The continued successful growth of Red Energy, together with the gradual ramping up of the mandatory renewable energy target, means a steadily increasing quantity of REC's must be obtained by Snowy Hydro. At some point Snowy Hydro will need more REC's than it can produce from its own renewable generators.

Electricity production from intermittent forms of generation, such as wind and solar, is expected to grow over this decade. If this growth materialises, then there may be opportunities for Snowy Hydro to partner with or invest in, some of these projects and utilise its fast and flexible hydro, pumping and gas turbine assets to complement the intermittent electricity production from new renewables.

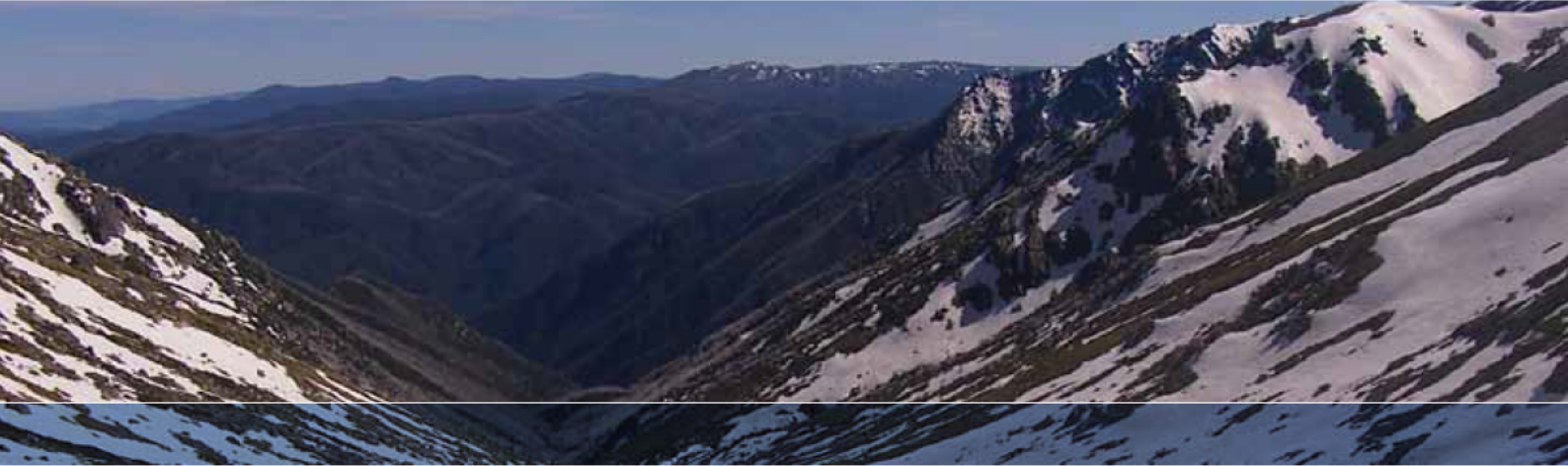
Wind and other forms of renewable generation are very expensive to build, and Snowy Hydro has limited capital funding capability under its current ownership arrangements. This means that Snowy Hydro must give careful consideration to the availability and prioritisation of capital for investing in wind, or other forms of renewable generation. There may be other, more attractive, investment options that utilise Snowy Hydro's limited available capital, such as upgrading existing plant and equipment.

All of the options and factors will continue to be considered, including buying the REC's from others. Snowy Hydro will do whatever most effectively meets the needs and expectations of Snowy Hydro's customers and our shareholders.









# The history of Cloud Seeding in the Snowy Mountains

**Loredana Warren**

Manager, Scientific Services

The potential for cloud seeding in the Snowy Mountains was recognised more than 50 years ago, with the CSIRO conducting experiments in the region over the period 1955-59.



The outcomes of the research reported a 19% increase in snowfalls, however these were later regarded as inconclusive because of perceived shortcomings in the design of the experiment.

Further studies to assess the potential for cloud seeding were undertaken in subsequent decades; however no cloud seeding experiments were undertaken.

An extended period of drought during the second half of the 1990's prompted Snowy Hydro to further investigate and confirm the effectiveness of cloud seeding for enhancing snowfalls. During 2003, company representatives gave evidence to the House of Representatives Standing Committee on Agriculture, Fisheries and Forestry Inquiry into "Future water supplies for Australia's rural industries and communities", outlining a proposed cloud seeding research trial. The Committee subsequently found that cloud seeding should be considered as "...a potential generator of additional water".

During the second half of 2003, a comprehensive review by an independent Expert Panel comprising 11 scientific experts concluded that cloud seeding over the Snowy Mountains region would be likely to increase snowfalls, and very unlikely to have an significant adverse environmental impacts or effects on rainfall downwind of the target area.

On 25 February 2004 the NSW Minister for Agriculture and Fisheries announced that after careful consideration of the Expert Panel Report, the NSW Government would make the necessary legislative arrangements for a six year cloud seeding trial to be undertaken. The Snowy Mountains Cloud Seeding Trial Act 2004 (NSW) (the "Act") was subsequently proclaimed on 7 April 2004.

Amongst other things, the Act established the role of the NSW Natural Resources Commission ("NRC") to "supervise authorised cloud seeding operations and report on the environmental impact of those operations to the relevant Ministers".

In planning the project, Snowy Hydro consulted extensively with international and Australian scientists, and collaborated closely with local stakeholders to ensure the development of a robust experimental design and comprehensive environmental management plan ("EMP") for the project. Under the EMP, environmental monitoring outcomes and operational data (for example, the times that cloud seeding experiments were undertaken, and the amount of cloud seeding agents used) were required to be reported to the NSW government every year of the trial.





Guthega Dam

The Snowy Precipitation Enhancement Research Project commenced in the winter of 2004, with all suitable storms seeded during this start-up year. All of the necessary infrastructure, instrumentation, experimental and operational procedures were developed and tested during the winter of 2004. Cloud seeding experiments commenced during the winter of 2005.

In late 2006, the outstanding scientific merit and national benefit potential of the trial was recognised by the Commonwealth government, and Snowy Hydro was awarded a grant of \$4.02 million under the Renewable Energy Development Initiative to support the research.

With protracted drought conditions persisting in south eastern Australia, by late 2006 stakeholders commenced vigorous lobbying of the NSW government to increase the size of the cloud seeding target area, and to extend the duration of the trial.

Interim results from the trial were found to be very promising, and comprehensive environmental monitoring undertaken since the commencement of the trial had shown no evidence of any adverse environmental impacts. On this basis the NSW government passed amending legislation in May 2008, increasing the size of the target area to around 2000 square kilometres, and extending the duration of the trial until 2014.

By the early winter of 2009, sufficient cloud seeding experiments had been undertaken to allow for a robust independent scientific evaluation of the trial to be undertaken. That evaluation found cloud seeding increased precipitation by an average of 14%, and that there were no adverse impacts on rainfall downwind of the target area. Two separate, independent scientific peer reviews supported this result, with the research subsequently published in the peer-reviewed Journal of Applied Meteorology. It is interesting to note that the results are similar to those reported by the CSIRO study undertaken during the 1950's.

The NRC also conducted its own independent peer review, consulting extensively with stakeholders and engaging further independent experts to assess both the outcomes of the experiment and environmental monitoring. The NRC review concluded the trial "...is of a high scientific standard and the evaluation plan is statistically sound" and "...we consider that overall there is acceptable evidence that cloud seeding has increased snowfall in the overall target area under defined weather and operating conditions".

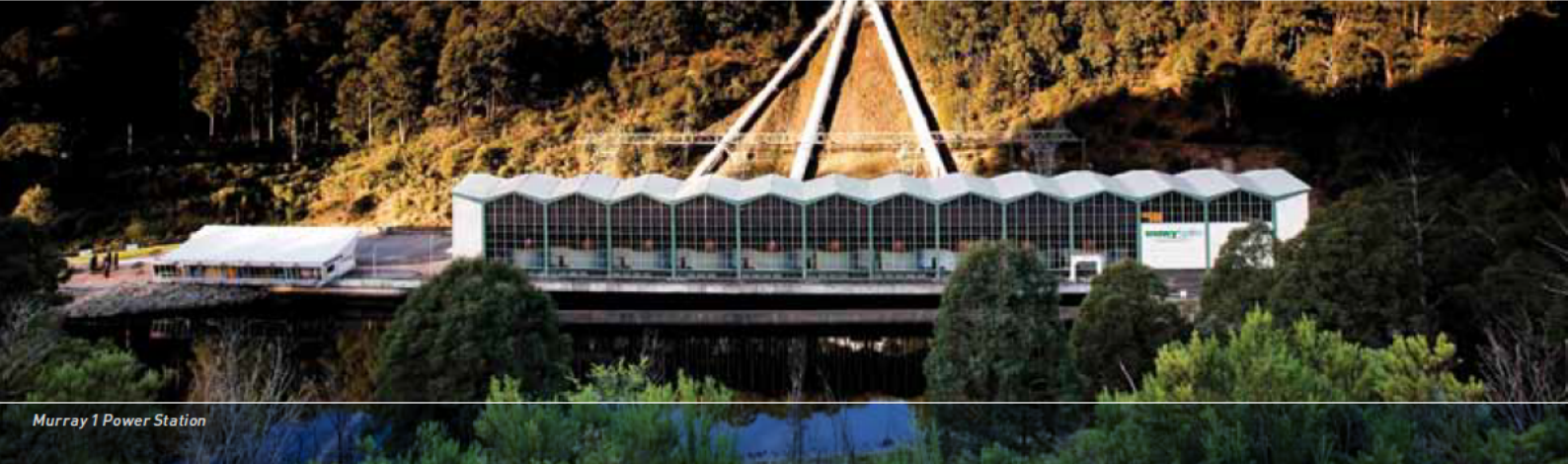
A separate comprehensive assessment of environmental monitoring found no evidence of any adverse environmental impacts associated with the cloud seeding trial. The NRC reported to government there is "...no evidence that cloud seeding operations have had adverse environmental impacts...".

## *...ongoing, operational cloud seeding program to commence from the winter of 2013.*

Snowy Hydro continued cloud seeding experiments from 2009, pending a decision by the NSW government on the future of cloud seeding in NSW. The exceptional scientific merit of the program and absence of adverse environmental impacts have been sufficiently compelling for the government to announce that it will now pass the necessary legislation for an ongoing, operational cloud seeding program to commence from the winter of 2013.

This means that cloud seeding over the Snowy Mountains will continue to bring significant benefits both locally and nationally well into the future.





Murray 1 Power Station

# Contract signed for new runners for Murray 1 Power Station

**David Britton**

Corporate Lawyer, Construction Projects

Scheme Modernisation planning is well on track with the recent signing of the design and supply contracts for the runners of Murray 1 Power Station.



In September, CEO Terry Charlton met with Koichi Yanabe, Managing Director, and Matt Proctor, General Manager – Power Systems & Services, from Toshiba International Corporation, to execute the Contract for the Murray 1 runners.

The delivery of the runners will occur from 2015 to 2017. This \$11.3million Contract is the last in a series of contracts between Snowy Hydro and Toshiba for supply of runners across the Scheme. Toshiba has previously supplied runners for Murray 2, Tumut 3, Tumut 2, Tumut 1 and Guthega Power Stations.

Mr Yanabe, who has been with Toshiba for 22 years and in Australia for 3 months, said: "When I was being briefed on my assignment in Australia, I was told that Snowy Hydro was one of the most important hydro customers for Toshiba in the world. I am pleased to be signing the contract for the last major runner upgrade in the Scheme."

"We believe that our work with Snowy Hydro can be used as a showcase for our global business."

Mr Proctor, who has been with Toshiba for seven years and has been involved in the negotiations for all the runner upgrade Contracts said: "It has been a pleasure to work with Snowy Hydro on these projects. We have a strong working relationship and this has allowed us to develop the best engineering solutions for the benefit of the Scheme."

On the same day, Terry also signed the Contract for the Geehi Aqueduct Refurbishment with Leed Engineering. This \$13.3million contract forms part of a \$20million investment by Snowy Hydro in refurbishing and upgrading this aqueduct. Work commenced in September with completion in March 2013.



CEO Terry Charlton and Mr Koichi Yanabe after signing the contracts.

# Water operations for 2011-12 outlined in latest report

Andrew Nolan  
Manager, Water & Environment

Snowy Hydro's 2011-12 Water Operations Report is now available.



As with the previous four reports, this report is widely distributed to our company's stakeholders and the local communities and businesses associated with the Snowy Scheme, both in hard copy and online.

This Water Operations Report describes how the Snowy Scheme operates, Snowy Hydro's water operations in the 2011-12 water year (1 May 2011 - 30 April 2012) and how Snowy Hydro met its obligations under the Snowy Water Licence during that water year. The report is independently audited and verified by the leading 3rd party auditing, assurance, and certification organisation, NCS International.

This year's report outlines a range of highlights including the management of the unprecedented high inflows and flood events that occurred in March this year.

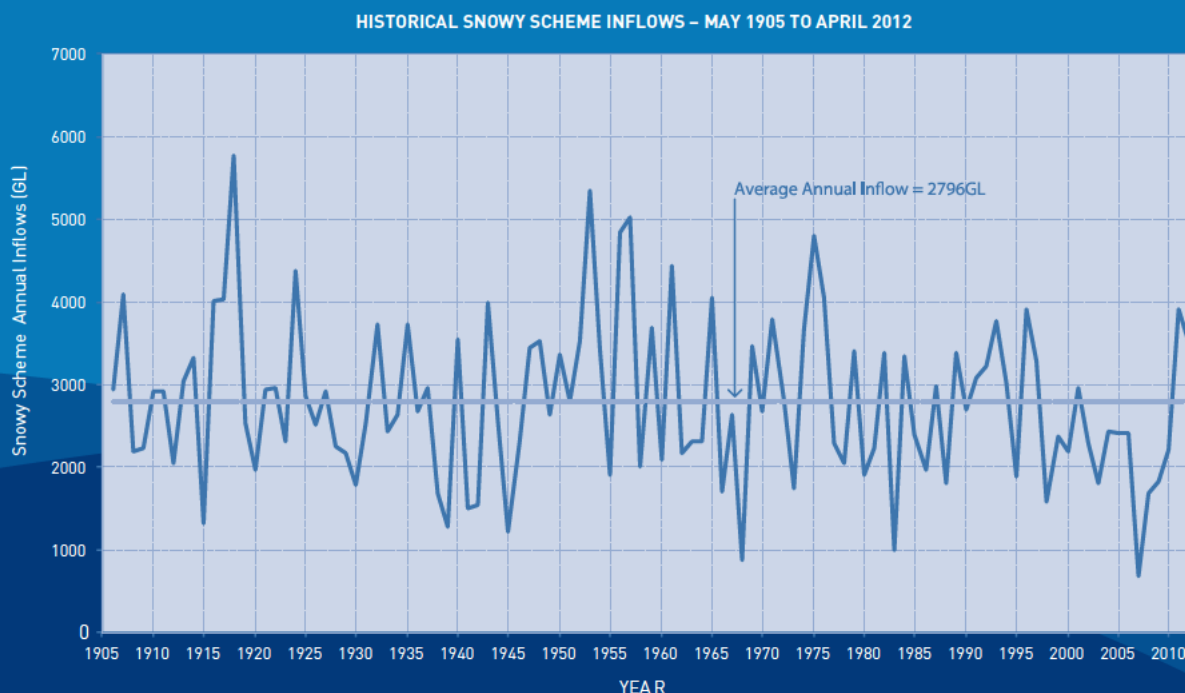
Other highlights also include:

- Ongoing recovery of inflows
- Delivery of the first 'Flushing Flow' into the Snowy River
- The March pre-release from Lake Jindabyne; as well as
- the amendments to the Snowy Water Licence.

Inflows into the Snowy Scheme for 2011-12 were 3,494 gigalitres (GL), which is about 125% of the long-term average of 2,796GL. At the end of the water year, the Scheme's active storage was 3,054GL, which is 57.6% of the active storage capacity.

Snowy Hydro is committed to improving stakeholder understanding and appreciation of the many responsibilities and stringent obligations that our company has to comply with in relation to the water resources of the Scheme.

Go to [www.snowyhydro.com.au](http://www.snowyhydro.com.au) to download a copy of the full report, or visit the Snowy Hydro Discovery Centre in Cooma, Murray 1 Visitors Centre near Khancoban or Cabramurra General Store & Coffee Shop to collect a copy.





# Learning Centre project well underway

**Richard Clarke**  
Project Manager

Works are progressing well on the Tertiary Learning Centre in Cooma.



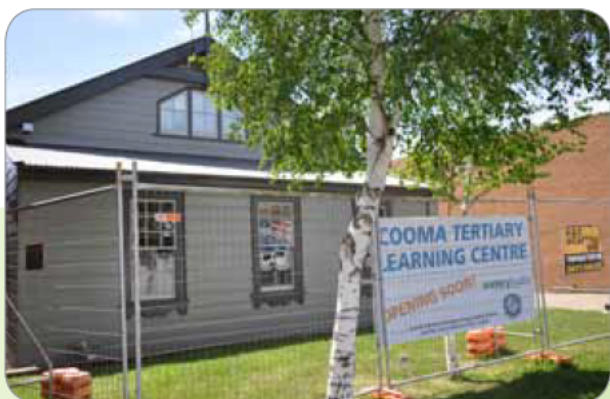
Repainting of the building has been completed and internal fit out works well advanced. Local contractors are installing data and communications hardware to enable high speed data and communications connections for students with their university.

Study areas and group study rooms, along with a state of the art student audio-visual room to enable live streaming to tutorials and lectures are almost completed.

The community open day for interested community members, local high school students and potential university students saw first hand how the building has been transitioned from the former BEC to this new state of the art tertiary learning facility.

Discussions with potential university partners are progressing well and Snowy Hydro will be commencing recruitment of a Centre Coordinator in coming weeks.

A university expo and official opening will be held in early February 2013 and the facility will be ready to host distance education university students from the beginning of first semester 2013.



## Calling all local businesses!

**Tracy Crowe**  
Education & Community Liaison Officer

There is a great new opportunity for local businesses to support your local rescue helicopter, Snowy Hydro SouthCare.



The Snowy Hydro SouthCare 'Regional Supporters' Program provides an ideal opportunity for local businesses to partner with the rescue helicopter service. Your involvement in the 'Regional Supporters' Program will allow your business:

- to be acknowledged as a sponsor of the service,
- the opportunity to promote your business across the region through Snowy Hydro SouthCare website, events and newsletters.
- discounts on Snowy Hydro SouthCare event tickets; and
- Invitations to business functions hosted by the rescue helicopter team.

There is no better way to demonstrate your support to your local community than supporting the Snowy Hydro SouthCare rescue helicopter.

To find out more on how you can become a Regional Supporter of your rescue helicopter services, call Matthew Turner at Snowy Hydro SouthCare on (02) 6205 5236 or email [mtturner@snowyhydrosouthcare.com.au](mailto:mtturner@snowyhydrosouthcare.com.au)



# Former Scheme workers attend annual briefing

**Ken Lister**

Executive Officer, Engineering & Projects



Snowy Hydro recently hosted the annual briefing to former Snowy Scheme workers. CEO Terry Charlton and some of the executive team met with more than 70 former Scheme workers at the Discovery Centre in Cooma.

The two hour briefing included detailed discussions from Terry Charlton about the business today, while Executive Officer, Ian Cooke, gave a detailed briefing at how technology and innovation is being implemented across the Scheme and the rest of the company.

I also gave an overview of the \$400million Scheme Modernisation project focussing on how we are upgrading and maintaining the Scheme and why plant reliability is critical to our business performance in the market.

Some former workers had travelled from Sydney and interstate to attend the briefing. Snowy Hydro provided a luncheon at the end of proceedings allowing many former worker to renew old acquaintances and recall their association with the Scheme during its construction period.

We would like to thank Mr Wally Mills, Chairman of the Snowy Scheme Association, for helping to coordinate the gathering and to all who attended for their ongoing interest and support of Snowy Hydro today.



# Thank you for your feedback!

**David Hogan**

Manager Public Relations & Community Affairs

Snowy Hydro would like to thank the communities of the Snowy Mountains for participating in our 4th bi-annual Community Feedback project.



With the aim of continuing to improve our company communications and to strengthen our partnerships with our local communities, it is essential that we get honest and direct feedback through this process.

We again wanted to know what you think regarding our community communications, our community partnership program, our relationships across the local region and your understanding of our business; how it operates and what it needs to prosper in a very competitive industry.

Independent specialists undertook this process on behalf of Snowy Hydro and included one-on-one interviews with members of the community and phone surveying of 500 households, all selected randomly, from across the region.

We thank you sincerely for your feedback for those who participated in the process. As we have seen from previous years I am confident your feedback will again result in further improvements to our community engagement partnerships, and mutual understanding.





Brian Coyte and Madeleine leading the mass ride into Thredbo



# Snowy Ride - raising essential funds for childhood cancer research

**Danielle Venables**

Marketing Communications Advisor



The Snowy Mountains Region rumbled with the sound of almost 3000 motorcyclists riding into town in early November for the Snowy Ride.

The Snowy Ride event occurs annually with the aim of involving motorcycle riders from all over Australia to raise money for Childhood Cancer Research. It is also an opportunity for riders to enjoy a weekend away with their friends and family and to ride some of Australia's best and most picturesque roads in our region.

Snowy Hydro is a major supporter of the Snowy Ride - this being our 12th year involved with this fantastic community event and children's cancer fundraising initiative.

At the annual visit to Charlottes Pass, Snowy Hydro CEO, Terry Charlton, presented \$100,000 to the Snowy Ride and Steven Walter Foundation's Sue Walter and Alan McGuirk. This sponsorship provides \$50,000 per annum direct to the Steven Walter Foundation for ongoing research at the Children's Cancer Institute of Australia. The other \$50,000 per annum goes to the Snowy Ride event, particularly the "Snowy Hydro Family Program" where families who have a child currently battling cancer enjoy a weekend away with the best the Snowy Mountains has to offer.



The total amount raised is being counted for the 2012 Snowy Ride but it will add to the millions already raised over more than a decade.

This successful event would not be possible without the ongoing dedication and support of the local organisers such as Brian and Dale Coyte, as well as many others who donate their time for this event and in hosting those special Snowy Ride families who are in need of a break.

## ***The essence of the Snowy Ride...***

"I was asked to lead the 'Snowy Ride' mass ride into Thredbo last Saturday afternoon with Madeleine, the guest speaker for the main presentation.

Things didn't look so good for Madeleine three years ago but she has now got her two-year clearance after a bone marrow transfer.

Not so many survive a relapse, but she has, and is now just a gorgeous 17 year old.

Madeleine told her story of survival at the main Snowy Ride presentation to the 2000 strong crowd, thanking the riders for continuing to support childhood cancer research. There was not a dry eye in the house!"

*Brian Coyte*

*Regional Snowy Ride Coordinator*

# What's on in the region...

In future editions of Snowy Hydro NEWS we will be including a calendar of local events to help outline upcoming community initiatives and events.

If you have an initiative or event that you would like included, email us a short outline of what is happening and the date to [communityfeedback@snowyhydro.com.au](mailto:communityfeedback@snowyhydro.com.au)

## December



DATE	14 December	Adelong Carols by Candlelight - Adelong Showground
	29-31 December	Snowy Mountains Muster - Station Resort, Jindabyne

## January 2013

DATE	1 January	Tumbarumba Rodeo - <a href="http://www.visittumbarumba.com.au">www.visittumbarumba.com.au</a>
	2-5 January	Snowy Mountains Showjumping Festival, Cooma Showground
	12 January	Tumut Cup - Race Day, <a href="http://www.tumutraces.com.au">www.tumutraces.com.au</a>
	18-20 January	Thredbo Blues Festival - <a href="http://www.thredbo blues.net.au">www.thredbo blues.net.au</a>
	25-28 January	Jindabyne Irish Festival - <a href="http://www.jindabyneirishfestival.com">www.jindabyneirishfestival.com</a>

## February 2013

DATE	3 February	Dine in the Vines, Tumbarumba - <a href="http://www.mannuswines.com.au">www.mannuswines.com.au</a>
	23-24 February	Tumbafest, Tumbarumba - <a href="http://www.tumbafest.com.au">www.tumbafest.com.au</a>

**Remember - if you would like your community event advertised for free in "What's on in the region" email the details to:**  
**[communityfeedback@snowyhydro.com.au](mailto:communityfeedback@snowyhydro.com.au)**