

November 2010

snowyhydro

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ISSUE 10



NSW Government Report confirms Cloud Seeding increases snowfall

John Denholm
Director, Cloud Seeding

A comprehensive 5 month independent scientific review of the Snowy Hydro cloud seeding trial has confirmed that cloud seeding increased snow falls by 14%.



The review of Snowy Hydro's Cloud Seeding trial, undertaken by the NSW Natural Resources Commission (NRC) has also reported no adverse downwind effects or negative environmental impacts. In particular, the key findings of the NRC report released this month are:

- > "Overall, the NRC confirms that the trial is being conducted in compliance with the Act, is of a high scientific standard and the evaluation plan is statistically sound";
- > "There is no evidence that cloud seeding operations have had adverse environmental impacts...";
- > "The monitoring results have detected no adverse impacts on rainfall in downwind areas..."; and

Science fact, not science fiction

- > Snowy Hydro has been conducting a scientific trial of cloud seeding in the Snowy Mountains since 2004.
- > Two independent evaluations of the trial and a lengthy five month review by the NSW NRC have confirmed that cloud seeding has had a positive effect in increasing snowfall.
- > Comprehensive monitoring and assessment shows no evidence of any significant adverse environmental impacts or downwind effects.

- > "...seeding has had a positive effect in increasing snowfall in the overall target area".

The Snowy Hydro cloud seeding trial is recognised as a world class research undertaking, with the Natural Resources Commissioner, Dr John Williams recently commenting in the media that "The quality of the actual engineering and meteorology behind the cloud seeding, which I've always said was of the highest order, so this is one of the – probably one of the best experiments that has been done to date. I think it's looking positive".



Snowy Hydro Managing Director, Terry Charlton, recently said: "Praise from the NRC is not lightly given, however this review holds no surprises for us. The Commission's findings support the conclusions reached earlier this year that cloud seeding increases snowfalls without negative impacts. There is now no plausible reason to further delay a move to an operational cloud seeding program. Continuing the program as an experimental trial means that more than 50% of the cloud seeding opportunities are missed, and this simply does not make sense."

“There is now no plausible reason to further delay a move to an operational cloud seeding program”

Mr Charlton added "We wrote to the Premier and local member, Minister Steve Whan in July this year asking that the Government then act urgently so arrangements can be made for cloud seeding operations to commence in full for 2011.

Stakeholders are urging a move to an operational cloud seeding program. Strong support for the project has been received from the local shire councils, tourism operators, the Australian Ski Areas Association, Ski field operators, Chambers of Commerce, irrigator groups and many hundreds of private individuals.

Provided the Government acts promptly, Snowy Hydro at its expense, will commence full operations next winter with the full benefits from such a program being delivered to all stakeholders. Snowy Hydro will also work with key stakeholders to review and update the environmental monitoring program to ensure that it is appropriate for an operational program.

The key findings of the Natural Resource Commission's report into Cloud Seeding are:

- > "Overall, the NRC confirms that the trial is being conducted in compliance with the Act, is of a high scientific standard and the evaluation plan is statistically sound";
- > "There is no evidence that cloud seeding operations have had adverse environmental impacts...";
- > "The monitoring results have detected no adverse impacts on rainfall in downwind areas..."; and
- > "...seeding has had a positive effect in increasing snowfall in the overall target area".

Snowy Hydro SouthCare completes 4000 life saving missions

Danielle Venables
Marketing Communications Advisor

On the evening of Saturday October 30th 2010, the Snowy Hydro SouthCare Rescue Helicopter completed its 4000th life saving mission.



The 4000th patient was an elderly male, transferred from Cooma, NSW with severe chest injuries.

"4000 missions is a huge milestone. It is also important to note that each mission is not just a mission, it's a personal story for somebody in our community. Every

mission has an impact on people's lives and those of their friends and families" says Steve Gregory, CEO of the Snowy Hydro SouthCare Trust.

Last month the Snowy Hydro SouthCare Rescue Helicopter also celebrated another milestone in reaching its 12th year of operation since October 1998.

"Snowy Hydro SouthCare performs, on average, two missions per day."

Snowy Hydro SouthCare performs, on average, two missions per day. The Rescue Helicopter travels in and around the ACT and Southern NSW and is on call 24 hours, 7-days a week ready to be tasked to 4 types of missions - Primary, Secondary, search and rescue, or bushfires.

An intensive care paramedic, doctor, pilot, and air crewman crew each mission. Snowy Hydro SouthCare is equipped to provide the highest standard of aero medical care.

Primary missions involve rapid response deployment of doctors and intensive care paramedics to the scene of an accident. Secondary missions focus on the retrieval of critically ill or injured patients for whom road transport is not an option. Non-medical missions include search and rescue operations and bush-fire assistance.

The Snowy Hydro SouthCare Rescue Helicopter could not exist without the financial support from naming rights partner Snowy Hydro Limited, its family of sponsors, community and service supporters, donors, payroll deductees and volunteers, plus both the ACT and NSW Governments.

2010 has been a year of milestones for the Snowy Hydro SouthCare Rescue Helicopter Service marking 10 years of support from Snowy Hydro Ltd as Major Sponsor and Naming rights partner.

Snowy Hydro's corporate sponsorship and support is the foundation of our community partnerships program delivering a real benefit to our local community. The Snowy Hydro SouthCare Rescue Helicopter completes a life saving mission on average twice a day highlighting that we need to improve our focus on safety at home, in the workplace, and when driving.

Mr Steve Whan, NSW Minister for Emergency Services and Member for Monaro recently said "The Snowy Hydro SouthCare Helicopter provides an extremely important service to critically ill and injured people in South-East NSW and the ACT. The NSW Government recognises how crucial the service is. I congratulate everyone at the Snowy Hydro SouthCare team for their hard work and dedication, and for the lives they have saved over the 4000 missions."



Snowy Hydro SouthCare



Winners - Australian Business Awards

Terry Charlton
Managing Director & CEO

Snowy Hydro is delighted to be the recipient of the 2010 Australian Business Award for Community Contribution.



The Australian Business Awards are a national awards program recognising the success, innovation and ethics of Australian companies and organisations across all industry sectors.

Conducted annually, the awards honour Australia's industry leaders through the acknowledgment of innovative business processes, product development, enterprise, sustainability and overall business success.

The awards also recognise the important social and environmental contributions made by organisations through excellence of service, commitment to their customers, philanthropic ideals, ethical behaviour and environmental sustainability.

Our company is extremely proud to have received the Award for Community Contribution, which recognises our contribution to the local community and for our professional contributions to the electricity and gas supply industry as a whole.



Cooma Monaro Shire Council Mayor, Dean Lynch, congratulates Terry Charlton on winning the Australian Business Award.

Snowy Hydro is proactive in its approach to working with its communities, employees, customers and other stakeholders to support and mutually enhance our social, environmental and commercial interests.

Each year, our company provides essential support to programs and services such as the Snowy Hydro SouthCare Rescue Helicopter and the Young Driver Practical Training program, as well as local festivals and events, cancer research and support and threatened species protection.

We see this commitment as a core part of our business and appreciate the recognition that this award brings.



Snowy Hydro - A future in Gas?

Paul Smyth
Executive Officer, Risk Management,
Technology & Planning

Everyone in the region knows that Snowy Hydro is the owner and operator of the Snowy Mountains Hydro-electric Scheme, but you may not realise that the company also has a significant investment in gas fired power generation.



Snowy Hydro owns and operates two fast start gas-fired power stations, the Laverton North Gas Power Station and Valley Power Gas Power Station, both located in Victoria. Snowy Hydro acquired the 300 megawatt (MW) Valley Power station in 2005 and built the 320MW Laverton North station in 2006.

The hydro assets of the Company currently have a total generating capacity of 3900MW and this is set to increase to 4200MW once the existing Scheme assets are upgraded under the current Scheme Modernisation Project.

Snowy Hydro's investment in fast start gas-fired power generation was a strategic business decision made to secure Snowy Hydro's long term future.

Gas fired plant is growing...

Snowy Mountains Scheme today	3,900MW
Snowy Mountains Scheme after Scheme Modernisation	4,200MW
Existing, under construction and peak gas capacity likely to be built by our competitors	12,000MW

The Scheme has already been replicated by gas. This could happen once, if not twice over again if all potential gas plant are built by our competitors.

Fast start gas power generation is essential to our future direction and ongoing business growth.

One of the very valuable features of the Snowy Scheme hydro-electric generators is their ability to rapidly start and quickly provide power into the electricity grid. Snowy Hydro's gas assets also offer this quick response feature and are capable of coming on line and providing power at almost the same speed as the hydro assets.

A further benefit of Snowy Hydro's gas power generation assets is their ability to generate more electricity to meet customer needs if water for the Snowy Scheme is scarce.

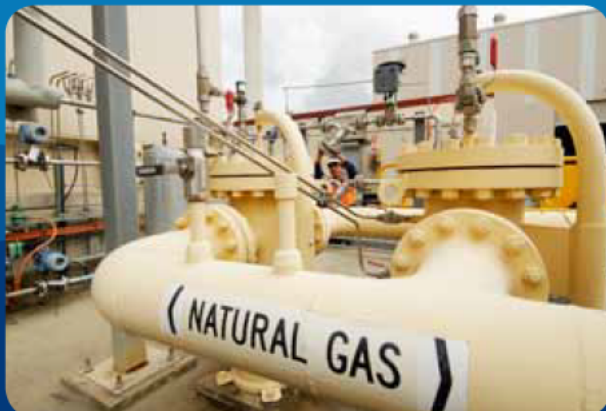
This has been of particular importance over recent years as the supply of water in the Scheme's storages has been at unprecedented low levels with the extended drought in the region, and has enabled Snowy Hydro to meet its customers needs despite having little water in our storages. Unlike the unpredictable variations in water available for generating electricity in the Snowy Scheme, the supply of gas to Snowy Hydro's fast start gas generation is available virtually all of the time.

Gas-fired power generation is growing rapidly and currently one fifth, or 8500MW, of the generating capacity in the National Electricity Market (NEM) is gas-fired.

Over 4000MW of new gas-fired power generation has been built in the NEM, which is equivalent to the entire generating capacity of the Scheme

In the last four years alone, over 4000 MW of new gas-fired power generation has been built in the NEM, which is equivalent to the entire generating capacity of the Scheme, and more is in future expected to be built by our competitors.

Snowy Hydro will continue to invest in its existing Snowy Scheme hydro-electric assets and gas power generation assets to maintain and improve their performance. We will also continue to explore opportunities to invest in gas-fired power generation with the overall objective of securing the long-term viability of the Company.



Valley Power, Traralgon VIC

Everything you need to know about water

Andrew Nolan
Manager, Water

Snowy Hydro has recently released its third annual Water Operations Report, which is written and widely distributed for the benefit of our company's stakeholders and those local communities associated with the Snowy Scheme.



The report describes how the Snowy Scheme operates, our water operations during the 2009-10 water year (1 May 2009 - 30 April 2010) and how Snowy Hydro met its obligations under the Snowy Water Licence.

Snowy Hydro is pleased to report that we have once again complied with the requirements of the Snowy Water Licence during the 2009-10 water year. During the 2009-10 water year, we complied with each target relating to:

- > the Required Annual Release to the River Murray catchment
- > the Required Annual Release to the Murrumbidgee River catchment
- > environmental releases into the Snowy River from Jindabyne Dam
- > environmental releases from Tantangara Dam.

We take pride in being able to meet both our water and electricity obligations during this 12-year period of prolonged drought.

Snowy Hydro is committed to improving public understanding and appreciation of the many responsibilities and obligations that we have with regard to the water resources of the Snowy Scheme. It is, therefore, our hope that each of our stakeholders and the people of our local communities read this report. Copies of this report are available from the Snowy Hydro Discovery Centre in Cooma and Murray 1 Power Station Visitors Centre near Khancoban, or you can download a copy online at www.snowyhydro.com.au





Snowy Hydro hosts 14th International Engineering Exchange

Serdan Bircan
Project Engineer

Alexandra Korsch
Graduate Engineer

Around 80 engineers gathered in the Jindabyne during October for the 14th Hydro Power Engineering Exchange.



The Hydro Power Engineering Exchange (HPEE) is a forum for hydropower professionals employed within the power industry and who have responsibilities for the operation, maintenance and development of hydro power assets.

This year participants attended representing 16 businesses from Australia, New Zealand, Papua New Guinea, Philippines and Sabah/Malaysia.

The conference has two main objectives; to promote open and frank discussions and interactions on engineering issues through the presentation of papers and interactive open forum sessions; and to provide the opportunity to visit hydro power sites where delegates can experience the different setup, asset management practices and technology first hand.

The official opening of the Exchange was given by Terry Charlton where in an inspiring address he relayed his

vision for Snowy Hydro and challenged the participants to use Continuous Improvement to incrementally improve the performance of their existing assets.

Throughout the week there were 30 technical presentations given by participants on a range of different aspects of hydro power, from interesting and sometime tough upgrade projects, to on the fly repair work and many intriguing investigations. Open forums also provided participants with an opportunity share their technical standards, experiences and issues.

Site visits to Tumut 3 Power Station and Guthega Power Station gave an opportunity for participants to look at upgraded units as part of Scheme Modernisation and Snowy Hydro's new renewable energy asset Jounama Small Hydro Power Station. Participants also visited Talbingo and Jindabyne Dams

HPEE, was established through joint initiative between Snowy Hydro and Electricity Corporation of New Zealand in 1990 to create an open forum for information exchange amongst hydropower professionals.

The Exchange is held every two years and rotates between the Snowy Mountains, North Island of New Zealand, Tasmania and South Island of Hydro New Zealand.

HPEE continues to gain increased interest and participation. The conference is now recognised worldwide and is endorsed by the International Hydropower Association.



HPEE participants at Tumut 3 Power Station

Thank you for your feedback

David Hogan

Manager, Community Relations & Internal Communications

Snowy Hydro would like to thank the communities of the Snowy Mountains for participating in our 3rd bi-annual Community Feedback project.



Our aim of this project is to further improve our company communications and to strengthen our relationship with our local communities.

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.

We again engaged independent specialists to undertake this review on behalf of Snowy Hydro, which included one-on-one interviews with members of the community and phone surveying of 500 households, all selected randomly, from across the region.

All data has now been collated and we look forward to further improving our relationships and communications with the local community in which we work and live.



Jindabyne

Improving telecommunications at Cabramurra

Robert Evans

Manager, ICS Business Continuity



Snowy Hydro is continuing to support the provision of services to its employees, their families and local communities, with the recent investment in new telecommunications infrastructure for Cabramurra. In partnership with Telstra, Snowy Hydro has

been able to secure mobile telephone coverage for the township as well as for people visiting or working in the surrounding area.

The new mobile phone cell means Snowy employees, contractors, residents and visitors to the region are now able to use their Telstra NextG mobiles for work, lifestyle or – most importantly – in an emergency.

As an added benefit, there is some spillage of signal beyond the immediate location of Cabramurra to some of the more isolated roads. This includes coverage in the vicinity of Tumut 2 Power Station which further enhances safety along these roads.

Snowy Hydro is aware of the challenges of working and living in the mountains and this improved service is one way we have been able to assist.

Cabramurra resident and Snowy Hydro employee Justin Mackay says everyone is really pleased with the new coverage. 'It has reduced the isolation factor, improved communication and obviously there is a huge improvement in terms of safety and emergency situations.'

Having mobile coverage in these areas also gives Snowy Hydro improved accident and emergency response capabilities, a greater capacity to manage our projects and means we can more easily coordinate maintenance of our assets.

In addition to contributing to the funding of the mobile phone cell, Snowy Hydro staff assisted Telstra work teams on a number of levels with the installation, including providing the electrical connection for the site, building issues and provided support for the project access and safety requirements.

Snowy Hydro announces \$300,000 support to Snowy Ride and Children's Cancer Research

Terry Charlton
Managing Director & CEO



On Friday 5th November I had the great pleasure of being in Thredbo as part of a large crowd to meet the Around Australia "Snowy Riders" as they completed their Around Australia Fundraising Ride.

We also met many of the kids and families who had come to

visit the mountains as part of the Snowy Ride Special Kids Weekend which is supported by Snowy Hydro in partnership with the National Parks Service. These children who are battling cancer, along with their families are treated to the best hospitality and activities the Snowy Mountains has to offer.

At the 2010 Snowy Ride we announced a three year \$100,000 per annum sponsorship of the Steven Walter Foundation.

At the 2010 Snowy Ride we announced a three year \$100,000 per annum sponsorship of the Steven Walter Foundation. This agreement provides \$50,000 per annum 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 Steven Walter Foundation Snowy Ride "Special Kids Weekend in the Mountains" Program.



Terry Charlton presenting the cheque to the Snowy Ride.



Some of the riders arriving in Thredbo.

Snowy Hydro has been a sponsor and supporter of the Snowy Ride since its inception 10 years ago and this \$100,000 per annum sponsorship extends the existing partnership with the Steven Walter Foundation and Snowy Ride which is a major event in the local region.

The Snowy Ride concept is a winning formula for not only raising awareness and much needed research funding but is an event that brings the local community together. It is something our company and our staff are proud to support and we look forward to a long association with the event in the region and believe our financial support will further assist finding a cure for childhood cancer.

Forty years ago childhood cancer was virtually incurable but today, with ongoing research and support, more than 80% of children can be cured. We look forward to our support assisting research that may one day close this gap where all children diagnosed with Cancer can be cured.

On a personal note, a big thanks to all those who gave freely of their time, and volunteered or assisted in some way with the children and their families who came to the region.

Their visit highlighted to us all exactly why we need to keep raising funds and awareness, something the Snowy Ride has successfully done now for more than 10 years and we hope continues until a cure is found.



Supporting our local festivals

Heath Redstone

Visitor Centres Coordinator

Each year Snowy Hydro supports the major festivals and events around the Snowy Mountains.



These festivals and events bring the local community together and provide a great experience of what the community and the region has to offer.

Each year Snowy Hydro attends the Festival of the Falling Leaf in Tumut, TumbaFest in

Tumbarumba, The Flowing Festival at Jindabyne, Cooma Show and the Man from Snowy River Festival – Corryong.

These events provide an ideal opportunity for the community to come and speak with some of the staff at Snowy Hydro and get the latest information. We are able to answer your questions personally and listen to your feedback.

Look out for the Snowy Hydro Marquee and don't hesitate to call in. There is information about the company, our new water report, information about how the Scheme works and the National Electricity Market. There are also fact sheets about Cloud Seeding, Water Operations Reports, Snow Depth Charts and the latest lake level information along with details on where you can see and experience the Scheme.

Snowy Hydro encourages the local community to participate in your local festival or event and we look forward to seeing you there. You can find out what events are on in your town by visiting www.snowymountains.com.au

Visit Snowy Hydro's Marquee at:

Jindabyne	20 February 2011
Tumbarumba	26 & 27 February 2011
Corryong	2 & 3 March 2011
Cooma	12 March 2011
Tumut	30 April & 1 May 2011



TumbaFest



Red Energy's brand evolution

Paul Johnson

Manager, Corporate Marketing, Communications & Public Relations



You may have noticed that Red Energy looks a bit different these days.

The Red brand and imagery has recently evolved to highlight some of the unique attributes that the Red business has.

- > Australian – we are owned and operated right here in Australia employing locally and contributing to our economy;
- > Customer Experience – we pride ourselves on being decent. We value our customers and we have real people who really care about providing a genuine service;



- > Value – we are committed to providing offers for customers going beyond just affordable energy at a fair price;
- > Community – we appreciate we don't have a right to be here and jump at the opportunity to offer something more. We are in the market to make a difference to everyday Australian's and their families.

As we look to the future we will reinforce this position alongside our products when competing for customers in NSW and Victoria. All our collateral and material has been updated to reflect this step in Red's brand evolution.

For further details check out our redesigned website at www.redenergy.com.au



Red believes in living energy

Red Energy entered the market in 2004 to shake things up, and that's what we've been doing ever since. We're all about providing you and your community with something better. Unusual for an energy company, we know. But Red is not your normal energy company. We're completely owned by Snowy Hydro Limited for starters, so we're 100% Australian – with a Customer Solutions Team based right here in Australia.

For affordable energy and great Pay on Time™ discounts, call us on **131 806** or visit redenergy.com.au





Jounama Small Hydro under water

Peter Hill
Senior Project Manager



Over the last four months Blowering Reservoir water level has steadily risen 29m in height to reach just 40mm short of its Full Supply Level (FSL).

The top of the 31m high silo structure of the Jounama power house is now only 3.6m above

Blowering FSL. The height of the silo was designed to be above the water level of a one in 5000 year flood event, assuming Blowering is at FSL, with a further one metre clearance for any local wave action generated from either Jounama spillway releases or high winds.

It is now very obvious why this very tall silo structure was constructed for the power station, but what you may not be aware of is the magnitude of the buoyancy forces acting on this structure.

The buoyancy forces are so great, nearly 48,000 kilo newtons, that there are 29 steel anchors of 20m length holding the structure in place. These anchors have been drilled into the local rock, with 10m of the anchor bonded to this rock and the remaining 10m put under tension to hold the structure down. Without these anchors, the power house would literally pop-up to the surface like a cork.

As the structure is now submersed to its normal operating range, it has provided the opportunity to assess the amount of leakage water coming into the station through the various mechanical seals such as the lower access door, turbine maintenance hatch and turbine pipework. Overall the amount of leakage is quite low and within design parameters and can be easily handled by the normal station dewatering pumps. As a waterproofing agent was added to the concrete mixture for all external walls, this additive is activated by water and in time will slowly plug the minor leaks in the concrete which will reduce the overall leakage rate.

With the current Blowering level the Jounama power station has been limited to operating only when Jounama pondage is very full, as a minimum height difference of 12m between the two bodies of water is required to generate enough water flow to produce power. At this minimum height difference, the power station can generate a bit over a third of its full rating of 14.4MW.

Final Stage of Jindabyne Dam Upgrade Project

Michael Thornton
Project Manager, Civil & Mechanical

Work will commence early next year on a \$10m service spillway at Jindabyne Dam.



This represents the final phase of the major upgrade works that commenced in 2004.

Works include a concrete apron and training walls to connect the existing spillway to the new outlet works.

Tenders for construction have been released to the market. It is estimated that more than 100 contracting staff will be involved with the project, which is expected to be completed in July - August 2011.

The project will see approximately 4000 cubic meters of concrete placed, 500 plus rock anchors installed and 400 tonnes of reinforcing steel placed.

The works will have no impact on environmental flows from the dam, however there will be increase in heavy traffic movement in the area during construction and minimal delays are expected on Kosciuszko Road.

Snowy Hydro will continue to keep the community updated on the project.



A concrete apron and training walls will connect the existing spillway to the new outlet works.



machines, and the role the project played in the development of the modern Australian nation.

By showcasing what is considered to be the greatest engineering project ever undertaken in Australia, this collection will create a multi-dimensional insight into the Snowy Scheme and its legacy.

Snowy Hydro has generously provided donations of the equipment and significant in-kind support to the museum.

Snowy Hydro has also agreed to promote the museum by including details of its educational benefits and brochure distribution through its visitor centres.

The museum committee is still looking for equipment with Snowy Scheme provenance, stories and memorabilia about the more than 100 000 people, many from overseas, who worked during the construction stage of the project. The committee would also like to invite anybody who would like to become involved with the museum.

Further information about the museum can be found on the museums website

www.snowyschemecollection.com.au.

Adaminaby Snowy Scheme Collection Museum nearing completion

David Hogan
Manager, Community Relations
& Internal Communications



The Adaminaby Snowy Scheme Collection Museum is well underway.

With the building construction phase now complete the museum has commenced the installation of the collection, exhibits and interpretative

material to make this landmark project come to life. It is planned that the museum will be ready to open its doors in early 2011.

The museum will be permanent reminder of the impact on the nation of the construction of the Snowy Mountains Scheme, highlighting the achievements of the engineers, the builders, the



The buildings of the Adaminaby Snowy Scheme Collection Museum

snowyhydro

To give us your feedback email
communityfeedback@snowyhydro.com.au
or for more information go to
www.snowyhydro.com.au