

November 2017

snowyhydro

NEWS

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WE WELCOME YOUR FEEDBACK:

✉ communityfeedback@snowyhydro.com.au



1800 623 776

ISSUE 39

It's business as usual at Snowy Hydro



CEO, Paul Broad, provides an update on what has been happening at Snowy Hydro and a progress report on our Snowy 2.0 feasibility study...

What an interesting time it is at the moment to be part of the team at Snowy Hydro Limited. Not only are we continuing to operate and maintain our Snowy Scheme and other generation assets across NSW, Victoria and South Australia, but additionally our team has dived head first into the Snowy 2.0 feasibility study. I am proud to lead a team of professionals who are not only managing their 'business as usual' responsibilities, but are going above and beyond to ensure the feasibility study is delivered by the December deadline.

Before I update you on Snowy 2.0 I wanted to highlight some of the key projects and milestones that have been achieved over the past few months, many of them relate to our ongoing asset management program.

Firstly, upgrades to Murray 1 Power Station are going well and we've recently had the top cover for unit 1 arrive on site. This is just one milestone in what

is a six month overhaul for this unit. The works at Murray 1 have been underway since June 2017 and I am pleased to report that with more than 41,000 hours worked, zero injuries have been recorded, this is an excellent achievement. Safety is core to our business and credit should be shared across the Major Works Team, the Maintenance Support Team and to the specialised contractors involved.

Also on the Snowy-Murray side of the Scheme, the Guthega Power Station generator unit 1 project has been approved. It's worth sharing with you that this is the very first time anywhere across the Scheme that a generator has needed replacing. Guthega Power Station is the oldest in the Scheme commencing operations in 1955. After the replacement the unit will be 'better than new' as it will have a 10 megawatt (MW) higher design rating than it does now. Read more on this later in the update by Manager Major Outages, Mukul Bokil.

Finally, we have also commenced the Burrungubuggee Aqueduct maintenance project. This asset is a small weir that collects water and moves it underground through a vertical shaft, into the larger Eucumbene-Snowy tunnel. To assist with this project we're installing a winch system on site, this is almost complete so the repair works soon to be underway.

While the Snowy Scheme may have been built 70 years ago, many beyond the Snowy Mountains do not understand the critical role our business still plays today powering homes and businesses across the country. We maintain and upgrade our power stations and water infrastructure so that at times of peak energy demand we can generate energy quickly to keep the lights on.

Speaking of the Snowy Mountains, it has also been a very busy couple of months for the local community. I would like to welcome our new Councillors across the Snowy Monaro and Snowy Valleys Councils. Our Board of Directors and I, recently had the pleasure of meeting them at our annual Community Board Dinners in Cooma and Tumbarumba. These dinners are not only a great way of immersing our Board members in our area, but a great way for us all to get to know our local community leaders from government, business, education and industry. I was impressed with how both Councils have hit the ground running and look forward to working alongside them in the future.

From a Snowy 2.0 feasibility study perspective, we are on track and have achieved with SMEC's early geotechnical investigation works completed at Gooandra Hill. The inclined borehole was completed at 1,176 m depth. This is the deepest geotechnical hole advanced and tested by the drilling contractor to date. The completion of this technically challenging hole is significant for the project as it provides information on the rock conditions for one of the cavern location options.

The field team was composed of 26 people, including SMEC staff, Deepcore (drilling contractor from Victoria), various out of state specialist testing contractors as well as local contractors for survey, waste disposal and transport. Together the team overcame the harshest Australian winter weather, 24 hour operation, different layered rock formations through volcanic rock and technical requirements to deliver a stable, deep borehole without any lost time, injury or major environmental issues. The successful completion of this borehole will help continue the strong relationship Snowy Hydro has with National Parks and the local community. Well done to the team!

As our Snowy 2.0 feasibility study is gaining a lot of attention across the country, we are also hosting a number of important visitors to experience our Scheme first hand and understand the proposed project. Recently we had NSW Opposition Leader, Luke Foley, visit Snowy Hydro and go on a Scheme Tour; who was surprised at how quickly we can start our generators - while we tell visitors that our power stations are 'quick-start' seeing is believing. These site visits are a very valuable way for us to engage with key stakeholders across all levels and sides of government. It's important for policy makers to understand the critical role that the Snowy Scheme and our other assets play in the NEM.

The feasibility study is critical and it will look at how to design and construct Snowy 2.0 as well as analyse the economics of the project. It is not a done deal by any means. Like any of our business ventures, Snowy 2.0 will need to meet our stringent investment hurdles before it can proceed. The study is due for release in December, and then the decision to proceed to the next stage will be made by our independent Board of Directors. As always, we will continue to keep the community informed.

It is not a done deal by any means. Like any of our business ventures, Snowy 2.0 will need to meet our stringent investment hurdles before it can proceed...

Our highest power station to reach new heights!



Upgrade works at Guthega Power Station, the oldest power station in the Scheme, are about to commence. Manager Major Outages, **Mukul Bokil**, has more...

Snowy Hydro, working with Andritz Hydro, is about to commence detailed design work for the replacement of the generator in unit one at Guthega Power Station. After more than 60 years of reliable operation this is the first time any generator across the Snowy Scheme has needed to be replaced.

The generator is connected to the turbine and is the part of the machine that converts the power produced by the spinning turbine into electrical energy for consumers. The generator will be assembled from thousands of individual pieces and weighing in at 230 tonnes it will need specialised trucks and trailers to get it on site.

This \$13 million replacement project is the latest example of our strategic investment in the Snowy Scheme.

"It's not just Guthega Power Station we're investing in. We have a thorough asset maintenance and modernisation program that upgrades our power stations and the water infrastructure across the Snowy Scheme," said CEO, Paul Broad.

"We've undertaken asset improvements that have actually increased the Scheme's total generation capacity".

"We've also implemented new technologies that allow us to start our generators faster, respond more quickly to changing market conditions and run our power stations remotely through our central control centre."

The new generator will have a higher design rating (40 megawatts) than the existing unit to match the previously upgraded turbine. Every generator across the Scheme can be used independently and therefore each unit wears differently and is replaced based on its condition rather than age.

After undertaking a competitive tender process Snowy Hydro appointed Andritz Hydro to undertake the design, fabrication, install and commissioning of the generator. Andritz Hydro is a global supplier of electromechanical systems and services for hydropower plants and hydraulic power generation. The detailed design process and unit fabrication is expected to take around 12 months.

The Guthega Power Station houses two 30 megawatt hydro-electric generating units and was the first power station built with construction starting in 1951. It's on the Snowy River, just 12 kilometres from the summit of Mount Kosciuszko and sitting at 1330 metres above sea level, it is the highest power station in the Snowy Scheme.



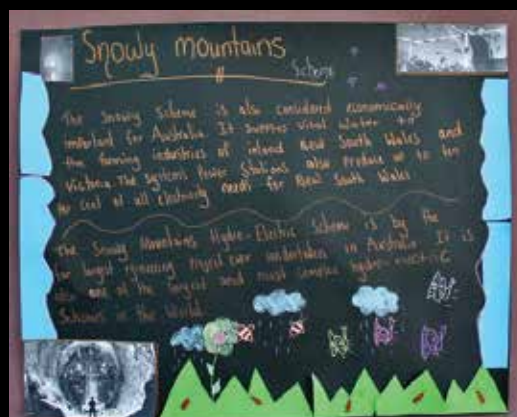


💡 national science week 2017

THE SCIENCE OF snowyhydro



L-R: The judging panel included Tumut radio personality David Eisenhower, Carolyn Ewart from the Country Universities Centre and the Hon Mike Kelly Member for Eden Monaro.



Hayley Bell, from Tumut's Franklin Public School, submitted this winning entry.



The judging panel was greatly impressed with the standard of the over 40 entries.



Batlow Technology School's winning entry.

Curious minds win 'Science of the Snowy' Competition



We had a great response to our first National Science Week Competition! Corporate Affairs Officer, Madeleine Lewis, announces the winners...

After much deliberation from the judging panel, ten winners of the 'Science of the Snowy' competition were announced in early November.

The winners came from schools across the Snowy Mountains. The calibre and creativity of entries greatly impressed the judging panel which included the Hon Mike Kelly Member for Eden Monaro, Carolyn Ewart, from Country Universities Centre, and Tumut radio personality David Eisenhower.

Chief Executive Officer, Paul Broad, said it was fantastic to see local children so engaged in science and technology. With more than 40 entries from Batlow to Bombala, the judges had a very tough job selecting the winners.

"Snowy Hydro is a modern and growing business. While some parts of the Scheme are more than 60 years old, we're constantly upgrading our assets and integrating the latest technology into our operations.

"The level of research and effort that went into the entries shows we have many budding scientists and engineers in our local community.

"It's great to see curious, young minds and I hope to see some of their names pop up on applications for jobs at Snowy Hydro in the years to come", Mr Broad said.

Recognition and thanks must go to our judging panel and all the teachers and parents that encouraged their students to enter the competition.

Competition winners: Jamie Jessup, Jackson Trellis, Ashley Lloyd, Dakota Simpson, Hayley Bell, Sophie Wood, Courtney Bennett, Bridie Hampshire and Tye Gulliford.

Along with the 9 students, the judges also selected the entry from the Batlow Technology School to round out the winners.

Highly commended entries Brandy Cotty, Luke Jones, Taya Douch, Lily Edgecombe, Jemima Merritt, Finn Sullivan and Rachael Babidge.

The 'Science of the Snowy Competition' was launched as part of Snowy Hydro's National Science Week Celebrations. To enter students in years 3-6 in the Snowy Mountains area shared their favorite favourite science, engineering, or technology fact about the Snowy Scheme.

The winners will receive a behind the scenes tour of the Snowy Scheme. Both winning and highly commended entries will be displayed in the Snowy Hydro Discovery Centre in Cooma.

Mythbusting - Snowy 2.0

With our Snowy 2.0 project gaining national attention at the moment, there is a lot of information flowing around the project and what it will mean for the Scheme and the region.

To keep the community informed, in each coming edition of Snowy Hydro NEWS we will the most commonly asked questions and keep you up to date on this exciting project.

What is a feasibility study?

Feasibility is about understanding the economic, engineering and environmental aspects of Snowy 2.0 to determine whether we can build it, and if it stacks up commercially for Snowy Hydro. Our Snowy 2.0 feasibility study will provide the basis for our independent board of directors to make a decision about whether it is viable for the project to proceed.

What are the decision points?

There are three major decisions points for whether Snowy 2.0 proceeds.

1. In December, Snowy Hydro's independent Board of Directors will make a decision (based on the feasibility study) about whether we proceed to the next stage of technical work and procurement.
2. If we do proceed, the next 'gate' would be to apply for planning approval from the NSW and Australian Government. This is supported by an Environmental Impact Statement (EIS).
3. If we get planning approval and the technical work is completed successfully, the Board will make a decision whether or not to commit funds to the project.

Why now for Snowy 2.0?

You may be interested to know that we've looked at the project on and off since the 1960s but the market conditions weren't right to proceed. In the future with more renewable energy coming into market we know we'll need large-scale storage, so it's time to look at this 'giant battery' project again.

This is a Snowy Hydro project, (while we're grateful for the political support) we are driving this project and our Independent Board of Directors will make the decision on whether we will proceed to the next gate in December.

Why do we need Snowy 2.0?

Projects like the proposed Snowy 2.0 are critical if Australian businesses and households want reliable, stable and affordable energy in the future. As the economy decarbonises, we are seeing more intermittent sources of electricity generation (like wind and solar) added to the energy mix, as coal fired generation retires.

As we become more reliant on intermittent energy generation, the need for quick start dispatchable energy like hydro-power and large energy storages will become more critical. At times of high demand when the wind isn't blowing or the sun isn't shining, Snowy 2. could provide much needed energy to the market.

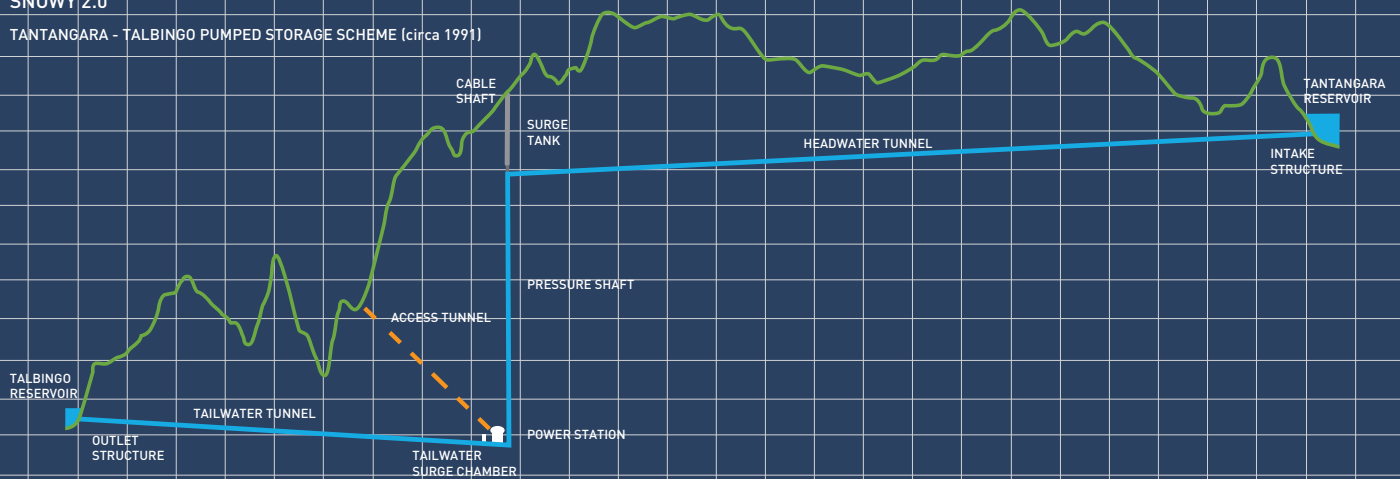
While domestic batteries may play a role in small-scale energy storage, when it comes to capacity, cost, location and longevity Snowy 2.0 is the most credible option. At full capacity, Snowy 2.0 could power three million average homes for about a week.

How is Snowy 2.0 a 'battery' - it doesn't look like one?

The ability to pump and store water would see Snowy 2.0 act exactly like a battery in the sense of absorbing, storing and dispatching energy. Snowy 2.0 will pump water using electricity at times of low

SNOWY 2.0

TANTANGARA - TALBINGO PUMPED STORAGE SCHEME (circa 1991)



demand and store it in our dam. Then, when energy is needed most, our stored water will be used to generate and dispatch electricity just like a battery would.

Pumping water at times of low demand means we are able to generate energy at times when consumers need it most. For example, if the wind is blowing in the middle of the night when consumers are asleep we'll use the wind energy to pump our water into storage and when they wake up and need electricity we are able to generate energy.

When it comes to batteries or other forms of storage technology nothing can compete with Snowy 2.0 when it comes to scale, value for money or capacity.

While Snowy 2.0 would use of cutting edge technology and the latest engineering techniques, pumped-hydro itself is a proven form of energy generation and storage.

How can we give our feedback?

Irrespective of whether Snowy 2.0 proceeds or not, Snowy Hydro is and will continue to be part of our local community. As such, Snowy Hydro is committed to engaging with community stakeholders about Snowy 2.0 and getting your views about our project.

To give us your feedback, complete our short online survey by going to: www.snowyhydro.com.au/our-scheme/snowy20/feedback-survey

We would like to use your feedback to best inform our work on the feasibility study, especially impacts on the region if the project proceeds. If the feasibility study is approved by our Board in December, then we will invite you to provide more detailed feedback as part of the environmental impact assessment for our planning approvals. At this stage, we expect this to happen around early to mid 2018.

FOR MORE INFORMATION & INQUIRIES:

Snowy Hydro will keep the community up to date on the study as it proceeds. Community inquiries can be addressed to community@snowyhydro.com.au.

For more information on the project, visit our website at:

www.snowyhydro.com.au/our-scheme/snowy20



Red supports the Snowies



Cooma Community & Sporting Bus

Every weekend through the winter months the Red Energy Cooma Community and Sporting Bus picks up girls and boys from local junior rugby league, rugby union and soccer clubs, often completing a 300km round trip to ensure these children make it to their games.

"The Red Energy bus has become part of our local social fabric and has filled a huge gap in our community" explains Brian Coyte local businessman and Community Bus Manager. "I know of families who couldn't afford to have their kids participate in local sport without the service this bus provides".

When its not being used to get Cooma's kids as far as Goulburn, Newcastle and Wollongong to compete in regional sport, the bus is used for various trips including garden club groups to the Southern Highlands and local school groups all the way to Sydney for cultural school excursions.

Iain Graham, CEO of Red Energy said sponsoring the Community Bus is just one way we can show our appreciation of the support we've received as a business from the people of the Snowy region. "What a wonderful initiative to be involved in. Sport is so important for both health and wellbeing and if we

can help children stay involved in their club sport by providing the transport they need to travel to their games then pardon the pun it really is a "win" for everyone".

Red sponsors the Tumbarumba Rodeo!

For the past 73 years the Tumbarumba Rodeo has attracted riders and spectators from across the country and this year Red Energy is very proud to sponsor the rodeo's first bull-ride chute out to be held on New Year's Day 2018.

Mellisa Meli, Secretary for the Tumbarumba Rodeo says that without the support of sponsors and volunteers the event would not have survived more than seven decades. "We have some very worthy prize money up for grabs for one of the twelve riders brave enough to test their riding skills on our bull-ride chute out event. We want to thank Red Energy for their support".

The rodeo club has been inducted into the Rodeo Hall of Fame in Warwick in recognition of its contribution to the rodeo community and the event itself is a highlight for local families in the region with barrel racing, bronc riding, rodeo clowns, great food, clothing stalls and show bags and rides for the kids.

An enduring partnership of 17 years



November in the region was full of events, one being the annual Snowy Ride. **Executive Officer, Safety People & Services, Gabrielle Curtin**, gives a run down of the event...

One of our major, long-term partnerships that we are particularly proud of is the Steven Walter Children's Cancer Foundation (SWCCF) and the annual Snowy Ride, which took place in early November.

Since 2001, Snowy Hydro has partnered with the SWCCF, providing funds for research as well as the Snowy Hydro Family Program since its inception in 2005, which hosts families with a child enduring treatment for cancer in Thredbo for the weekend of the Snowy Ride, giving them a break from their hospital routines. The entire family is invited for a relaxing, getaway from the serious business of a cancer treatment. This year, the Snowy Hydro Family Program hosted seven families (32 mums, dads and children) from Sydney Children's Hospital to escape and enjoy fun-filled activities around the region.

I had the privilege of attending this year's event and in presenting our \$100,000 partnership to the crowd, I was able to communicate how we at Snowy Hydro truly value the sense of community the Snowy Ride brings and how we're proud of our 17 year involvement with the event and the SWCCF.

Since 2005, in excess of 100 families have taken part in the Snowy Hydro Family Program enjoying helicopter rides courtesy of the Royal Australian Navy, motorcycle rides thanks to the Australian Goldwing Association, fireworks thanks to Thredbo and plenty of other great activities - including a lunch stop at our very own Discovery Centre in Cooma.

"This year there were 2095 registered riders and the Snowy Ride event has raised over \$200,000 which will fund further research into a cure for childhood cancer and our goal of 100% survival for all children with cancer," said Brian Coyte, Snowy Ride Local Event Coordinator.

For me personally, one of the biggest takeaways from this event was being proud of a small group of locals who make sure this event runs smoothly every year. This event would not be possible without a team of dedicated volunteers, led by Cooma locals Brian and Dale Coyte, who devote their time to ensuring these families have an incredible time. Much credit to you all.



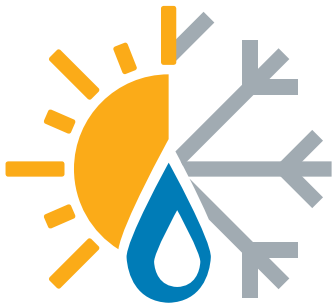
ROAD SAFETY

IN THE SNOWY MOUNTAINS



ENJOY YOUR DRIVE

THROUGH THE SNOWY MOUNTAINS



**DRIVE TO
CONDITIONS**



**FOLLOW
ROAD SIGNS**

Watch for cyclists
and motor bikes



**SHARE
THE ROAD**

A Snowy Hydro and Kosciuszko
National Park joint safety initiative

snowyhydro





Roads in the Snowy Mountains region cross high altitudes and travel through remote country. Environmental Advisor, Sander van Tol, reminds us to be safe on our roads...

Locals and visitors alike need to be aware of wildlife, narrow roads and changing conditions. Accidents and near misses over the years have motivated Snowy Hydro and Kosciuszko National Park (KNP) to create a joint initiative promoting road safety.

The road safety initiative includes improving roads and signs, maintaining staff alertness and building visitor awareness. With the Snowy 2.0 feasibility study underway, road users may also see an increase in vehicles on the roads in and around the northern portion of the Kosciuszko National Park.

This year, there is an added focus on sharing the roads with cyclists and motorbikes. Events such as the Snowy Ride and the L'Etape highlight the increasing popularity of riding motorbikes and bicycles through the Snowy Region. With over \$6 million raised for charity through the motorbike event since 2001, and nearly 3000 cyclists participating in the L'Etape last year, roads in the Snowy Mountains are seeing a lot of two-wheeled action!

KNP are continuing their support of road safety through improved signage, line marking and road upgrades.

Snowy Hydro has released an awareness campaign that includes visitor centre signage and radio ads for the general public.

Internally, Snowy Hydro has systems in place to keep awareness of bicycle, motorbike, car and caravan traffic at the front of people's mind. These systems are designed to remind staff they are sharing the road with visitors to the region and include road safety conversations, job planning and radio communication to alert staff to traffic conditions.

The take home message is for drivers to pay attention, be aware of changing road conditions, be alert for wildlife and other vehicles and be prepared for the unexpected.

Please remember to take care on the roads and enjoy your drive through the Snowy Mountains.



Pay attention, be aware of changing conditions, be alert for wildlife and other vehicles and be prepared for the unexpected...

Visit the Scheme this summer



Snowy Hydro offers facilities for people to come and visit the Snowy Mountains and experience our Snowy Scheme first hand. Team Leader of our Discovery Centre, **Luke Judd, invites you to visit this summer...**

We are lucky to have access to all year round activities in the Snowy Mountains from skiing in the winter through to fishing, kayaking bushwalking and water sports in the summer months. However, a visit to the Snowy Mountains Scheme is a must for those wanting to experience the best of our region no matter what time of the year it is.

As we head into summer it is a perfect opportunity to pay a visit to our Snowy Hydro Visitor Centres. Learn more about Snowy Hydro operations, Snowy 2.0 feasibility study or the history of our iconic Snowy Scheme.

Recently we have been introducing some new features to our centres which we hope will even further improve the experience of our visitors!

New merchandise

All our centres have a range of merchandise to choose a souvenir for your trip from educational science kit for the budding young scientists to books, clothing and gifts.

New food options

Stop in for a coffee and refreshments while you visit. Across our facilities we offer pies, sausage rolls, sandwiches, wraps, fillos and rolls - as well as a selection of cakes and treats. Our centres will make sure you don't leave hungry on the next leg of your travels.

Murray 2

If you are interested in seeing the inner workings of a power station then Murray 2 Power Station is a must. With inspections running at 11am and 2pm daily through summer you can find out more about Snowy Hydro operations from our knowledgeable staff and see first hand the scale of hydro electric generation.

Cabramurra

Cabramurra is Australia's highest town and an important location in the Snowy Scheme. Located in the middle of the Kosciuszko National Park, it boasts beautiful views at the town look out, a great stop for lunch at cafe or Bistro 1488. Our team at the visitor centre can run you through the real time screens to explain how the Scheme works or discover more about this history with great historical photographs of the area during the construction days.

Plan your visit

There are a number of ways you can plan your visit to the Scheme. Why not visit our website at snowyhydro.com.au/our-scheme and look at what we have on offer. You can download our drive guide online to help plan your trip, it has one or two day drive itineraries that can help you make the most of your time visiting the Scheme. Alternatively, call our friendly team on 1800 623 776 and we will be able to help you!

DISCOVER

THE

Snowy Scheme

A visit to the Snowy Mountains Scheme is a must for those wanting to experience the best of the region. Snowy Hydro owns and operates the Snowy Scheme and provides a range of facilities around the Snowy Mountains for people to see and experience the Scheme.

Talbingo



Talbingo Visitor Display Centre
Talbingo Shopping Centre
Whitty St, Talbingo

OPEN
7 DAYS

8AM - 4PM Mon to Sun

CLOSED

Christmas Day



**Cabramurra Visitors Centre,
Coffee Shop and Scheme Display**
Cabramurra Township, Cabramurra

OPEN
7 DAYS

9AM - 5PM Mon to Fri
10AM - 3PM Sat, Sun and Public Holidays

CLOSED

Christmas Day



**Snowy Hydro Discovery Centre
Coffee Shop and Scheme Display**
Monaro Highway, Cooma

OPEN
7 DAYS

8AM - 5PM Mon to Fri
9AM - 2PM Sat, Sun and Public Holidays

CLOSED

Christmas Day and Anzac Day

Khancoban



**Murray 2 Power Station and
Temporary Visitors Centre**
Power Station Road, Khancoban
Power Station Inspections: 11am and 2pm

OPEN
7 DAYS

OCT - APR: 9AM - 4PM Mon to Fri
10AM - 4PM Sat, Sun and Public Holidays

CLOSED

Christmas Day, Anzac Day
and Winter weekends

Cooma

Mt Kosciuszko

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snowyhydro
renewable energy



snowyhydro

Kent, Snowy Hydro Employee

Moving mountains.
It was all in a day's work back then.
9,125 days to be precise.
Proud to be a part of it today.
That's 110% Australian.

It took over 100,000 workers twenty-five years of hard slog in the worst possible conditions to build the mighty Snowy Scheme. That much we know. But to hollow out mountains of granite took a fair bit more than that. It took 110%. And we believe that's as important today as it was then. That's why at Red Energy, an all-Australian company owned by Snowy Hydro, we think the people of the Snowy Region deserve fair prices, genuine discounts and local award winning customer service.



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snowyhydro

For 110% Australian Electricity & Gas
call 131 806 or visit www.redenergy.com.au

