

snowyhydro

NEWS

ISSUE 46 • SPRING 2019

CELEBRATING 70 YEARS

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- ▶ Apprentices – the faces of Snowy's future
- ▶ New renewable energy deals
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70 YEARS OF
SNOWY
1949 - 2019

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CEO UPDATE

CEO Paul Broad gives an update on our key activities.

I'm proud to lead a great company with a long and exceptional history of vision, innovation and nation-building expertise. With the mighty Snowy Scheme turning 70, we remain inspired by the legacy of those who came before us and dreamed big.

The concept for the Snowy Scheme came about in the 1800s. The regions west of the mountains were becoming vital agricultural areas needed to feed a growing population. During recurrent droughts, the idea to harness the mountains' abundant melting snow and rainfall, by diverting the powerful Snowy River inland, came about.

Turning the idea into a reality saw 25 years of incredible and difficult construction and engineering. The grit and determination of more than 100,000 men and women, who came from many post-war nations to build the Scheme, helped shape the multicultural society we have today.

I enjoy listening to the stories told by former workers and their families – it's incredibly special and I hope to hear more tales when we come together as a community to celebrate the Snowy Scheme's 70th celebrations.

Snowy 2.0, of course, is the next exciting and important chapter in our Snowy story. You may not know this, but when we started planning for Snowy 2.0 the engineers looked at the original Scheme plans.

These plans identified a number of sites suitable for hydro power which were not pursued at the time. Many decades later it's incredible to be building Snowy 2.0 along one of the alignments that were identified by our predecessors.

Road upgrades and site access works for Snowy 2.0 are progressing well at Lobs Hole and we are aiming to have the first tunnelling underway by the end of the year. You may have also started seeing the Future Generation team around town. They're the principal contractors building Snowy 2.0 on behalf of Snowy Hydro.

I'd also like to thank the 100-plus local businesses which have provided their expertise, services and products to the project to date.

As always, there is plenty to do on the existing Scheme. Underway is replacement of the control systems at Murray 2 after 50 years of reliable service, construction of an access bridge between the Jounama Power Station and the Jounama dam and a major upgrade of the spillway gate control systems at Island Bend dam.

Red Energy, Snowy Hydro's retail brand, continues to deliver award-winning customer service and is thrilled to have signed Thredbo Ski Resort up to a new 100% renewable energy deal. By combining our contracted wind and solar energy with on-demand hydro we can provide 'firm' reliable, renewable energy to commercial customers, providing an exciting new growth opportunity for the business. It's fantastic to see this development given the turbulent times facing the energy industry. With the rapid changes occurring in the energy market, our role of keeping the lights on is more important than ever.

As I'm sure you're aware, the east coast is still in the midst of a drought. We are keeping our fingers crossed for more snow and, later in the spring, we also need some rain to help boost inflows. With dry conditions expected to continue, we are strategically managing our water resources to ensure our water release obligations are met for downstream users.

It's a very busy and exciting time at Snowy and I look forward to keeping you updated.



For more information please visit our website [snowyhydro.com.au](https://www.snowyhydro.com.au) or follow us on Facebook.

Contact us:

📞 1800 623 776

📧 communityfeedback@snowyhydro.com.au



70TH CELEBRATIONS

In October, Snowy Hydro is celebrating 70 years of the mighty Snowy Scheme.

Seven decades ago, in October 1949, the ceremonial first blast was fired at Adaminaby to mark the commencement of a hydro-electric construction project that would become known as one of the world's modern engineering marvels.

This historic milestone will be recognised with events in Cooma, Khancoban and Talbingo this spring. The events will focus on celebrating the incredible achievements of the construction era and many decades of successful operations.

It's also a great opportunity for Snowy workers from over the decades to reconnect and share stories of their Snowy life and experiences with each other and current Snowy staff.

A community celebration and main reunion event will be held on **Saturday 19 October 2019** from 11am - 3pm in Cooma and everyone is welcome to attend.

The event will be held on the lawns outside the Snowy Hydro head office in Cooma North.

The festivities on the lawn will include speeches, live music from local performers, delicious food and more.

People can move between the lawns, the Snowy Hydro Discovery Centre and the main office building, which will be open for tours during the event.

The Snowy Hydro Discovery Centre will be open throughout the weekend. Visitors will be able to experience our brand new, state-of-the-art immersive theatre and the proud history, engineering prowess, mateship and vision of the mighty Snowy Scheme.

A massive screen measuring 14m wide and 4m high will welcome visitors and take them on a fly-over across the Snowy Mountains, showcasing our past, present and future - a behind-the-scenes tour of one of the greatest civil engineering projects the world has ever seen.

A series of 'Snowy talks' will be held throughout the day in the main office for the community and ex-workers to hear about how Snowy Hydro is operating in today's rapidly-changing energy market and the critical role the business will continue to play in underpinning Australia's renewable energy future.

The talks will also cover the company's future plans with Snowy 2.0, our new major pumped-hydro expansion of the Snowy Scheme.

The events in Khancoban and Talbingo will bring the 70th celebrations to these local communities. There will be a rare opportunity to see inside Talbingo's Tumut 3 Power Station from the viewing gallery and enjoy a barbecue lunch with proceeds to be donated to a local charity. In Khancoban there will be a community picnic at the Lady Hudson Rose Garden.

For information and to keep up-to-date with activities, please register at snowyhydro.com.au



Tractor maintenance men at the Three Mile barracks near Kiandra, 1950

TOWN	DATE	VENUE
Cooma	Saturday 19 October 2019	Community celebration event on the Snowy Hydro office lawns
Khancoban	Saturday 26 October 2019	Picnic at Lady Hudson Rose Garden
Talbingo	Sunday 10 November 2019	Access to the Tumut 3 Power Station viewing gallery and charity barbecue.

LOCAL BUSINESSES POWERING SNOWY 2.0



For Snowy Hydro, the excitement of Snowy 2.0 being underway is matched only by the buzz around the Snowy Mountains communities and local businesses powering the project.



Already tens of millions of dollars have been spent, with more than 100 local businesses directly involved in Snowy 2.0 or supplying goods and services across a wide range of industries including professional and technical services, machinery and construction materials, safety equipment, hospitality and accommodation.

The contribution of local businesses to the project has been invaluable, as well as boosting the regional economy.

Andrew Downing, from Jindabyne Landscaping, says Snowy 2.0 has been a great experience so far. "It's enabled us to provide 6-8 jobs outside of our normal operations and we've also been able to buy new equipment to service the landscaping works we've been doing," Andrew said.

"There's also been a lot of spin-offs to other local businesses providing us with mechanical repairs, servicing, small plant providers and equipment that we've purchased locally."

Roger Withers has more than doubled his Tumut-based Withers Earthmoving workforce in the last 12 months as a direct result of the Snowy 2.0 project.

"Twelve months ago we only employed eight people to run our quarry and our trucks. Now we're up to 20 and within the next 12 months we will be up to around 30, probably even 35 people, just to cater for the Snowy 2.0 project," he said.

"It will be really good for Tumut I think. It will have a big flow-on effect to all the businesses around town like the hotels, motels supermarkets and increased employment."

At the Adaminaby Bakehouse, where wholesale bread supplies for Cabramurra have significantly increased and contractors have been purchasing coffees and lunches, co-owner Linda Squire says her business has been a lot busier.

"We've had to increase machinery, purchase bigger machinery for Glen, our baker, for bread production," Linda said. "[Snowy 2.0] is great for our town, great for our business obviously - we need more staff! It's going to be great for the whole of this area."

Both Snowy Hydro and our principal contractor Future Generation are committed to providing jobs and business opportunities for locals, and the work to date is only the beginning.

Future Generation, which is managing the Snowy 2.0 workforce, is already advertising for a number of Snowy 2.0 Exploratory Works roles (search 'Snowy' on the SEEK website), with job opportunities set to ramp up through the project Main Works.

Snowy Hydro is also looking to establish a precast factory at Polo Flat in Cooma to manufacture the concrete tunnel lining segments for Snowy 2.0. Subject to planning approvals, this factory would employ a mostly local workforce of about 125 people.

Snowy 2.0 is great news for local communities. Anyone keen to be involved should visit the Future Generation website futuregenerationjv.com.au to see what opportunities are available now and in the future.

For more information on Snowy 2.0 visit snowyhydro.com.au

Some examples of local business involvement so far include:

- 6,000 hours of traffic management services
- 5,000 hours of surveying services to mark out the Exploratory Works project area
- 2,300 hours of feasibility study surveying services
- 16,500 star pickets to line the project's exclusion zones
- More than 10,000 nights in local accommodation and meals eaten in towns
- 3,800 hours of earthmoving and bridge works at Lobs Hole
- 100s of items of high-vis workwear and boots for project staff
- 19,000 hours of geotechnical investigation drilling
- 160 hand-held radios for the workforce
- 20,000 tonnes of quarried products for the new roads and haulage to site
- 10 new light vehicles and aftermarket accessories

SNOWY 2.0: PROJECT UPDATE



Snowy 2.0 Exploratory Works are progressing well and it's great to see the project really coming to life.

Roads contractor Leed Engineering and Construction has forged ahead with upgrades to Lobs Hole Ravine Road, despite some periods of wild winter weather, and these are due to be completed by the end of the year. A temporary pedestrian bridge is also being installed across Wallace Creek to enable our principal contractor Future Generation access to the exploratory tunnel portal site. When access is completed, the first tunnel construction will get underway with drill and blast methodology.

This exploratory tunnel will allow further geological investigations to be carried out at the underground cavern location, with horizontal core hole drilling conducted in-situ. This work is very important as it provides us with information needed to finalise the technical design of the power station cavern, which will be located about 700 metres below ground.

Construction of the first workers' accommodation camp is due to start in coming months and should be finished early next year. Initially, during the Exploratory Works phase, the accommodation units will be home to around 150 people. Each single bedroom unit will contain an ensuite, bed, desk, television, small refrigerator and reverse-cycle air conditioner. The Exploratory Camp will also have a gym, recreational facilities, dining area and kitchen.

Given the project's location in the Snowy Mountains, all of these buildings are built to withstand up to three metres of snow!

Snowy Hydro hosted its latest round of community consultations in July and August, with staff from Future Generation also attending. These sessions in Cooma, Adaminaby, Tumut, Talbingo, Tumbarumba and Shannons Flat were focused on providing information to the community as part of the Environmental Impact Statement process for Snowy 2.0 Main Works

and the Polo Flat precast factory. The events were well-attended, with more than 400 people taking the opportunity to ask questions, learn more about the projects and speak directly to the project team.

The most common topics raised by the local community included local jobs and business opportunities, traffic and noise impacts, road safety and road upgrades.

Future Generation is busy establishing a presence in the local community, with team members already moving into the old SMEC offices in Cooma. This will soon become the Future Generation headquarters for the project and will house 80-100 staff, generating further economic activity for the area. SMEC staff working on the project have moved into the Snowy Hydro office in Cooma in their role as the owners' engineers.



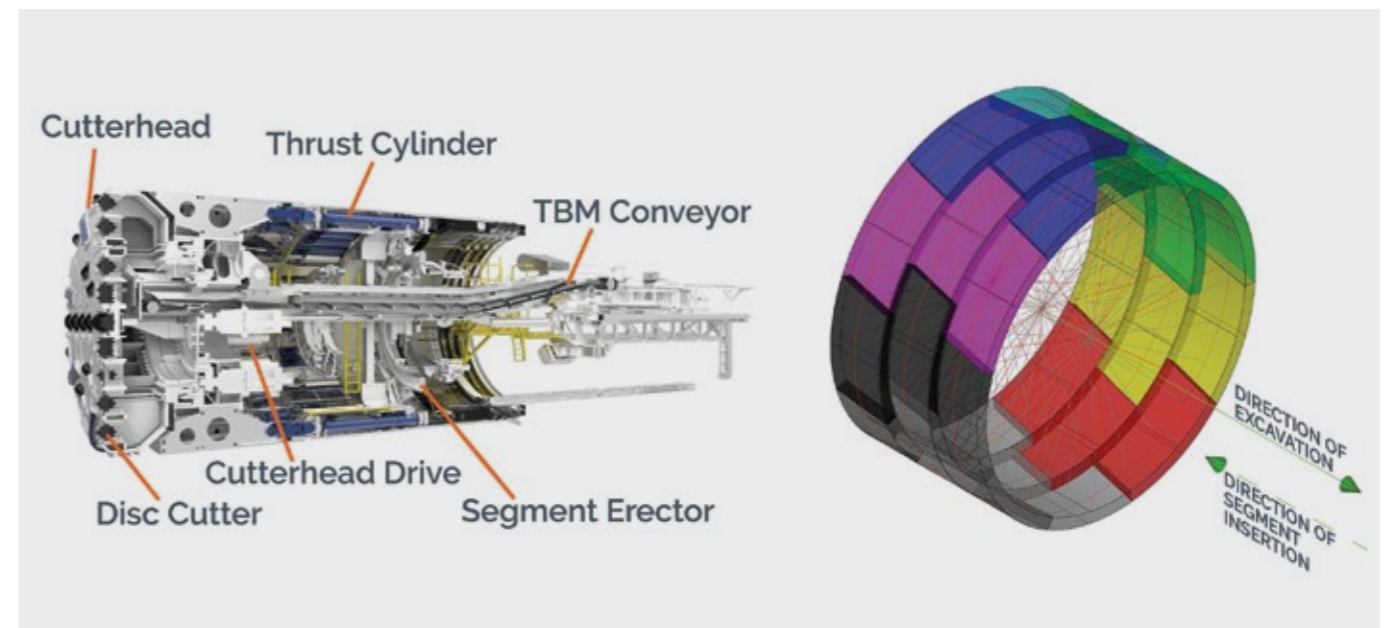
Community consultation session at Polo Flat

Tunnel boring machines

Tunnel boring machines (TBM) have a circular cutter head and are used to excavate tunnels through rock and soil. They provide a faster and more efficient method of excavation than traditional drill and blast.

There will be three TBMs used for Snowy 2.0, each with a 10.9m diameter cutter head and 14 engines producing 5,000 kilowatts of power. It takes 25 people to run each TBM including support facilities at the tunnel portal.

A TBM not only removes excavated material but can install pre-fabricated concrete segments to line the new tunnel. For Snowy 2.0, each concrete segment will weigh 6.5 tonnes and there are nine segments in each ring. With 27km of waterway tunnels, Snowy 2.0 will use more than 130,000 concrete segments!



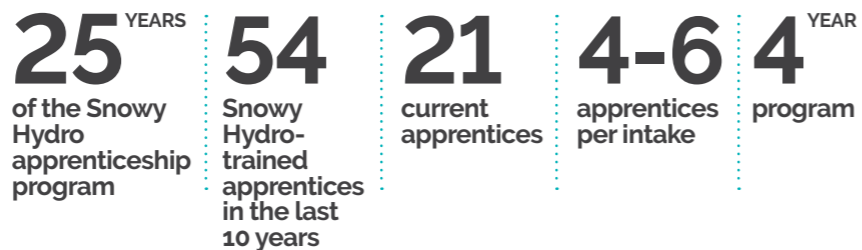
A typical tunnel boring machine



APPRENTICES

The faces of Snowy's future

By the numbers



Every day, across the Snowy Scheme and throughout the Snowy Hydro business, there are skilled tradespeople working to maintain and fine-tune our generation assets to help keep your lights on at times of peak energy demand.

All of these mechanical fitters, electricians, machine fabricators, maintenance technicians and site supervisors started their careers as apprentices, many of them at Snowy Hydro.

We are proud of our apprenticeship program and appreciate the incredible value that apprentices bring to the business. The program develops and nurtures the abilities of local young people through high quality trades training, along with support and mentoring from the apprenticeship management team.

Our apprentices are critical to our future and deliver the pipeline of skills we will always need. They become the vital tradespeople providing the hands-on skills that keep our turbines spinning, electrical systems safe and plant maintenance on-track.

Apprentices bring ideas, innovation and enthusiasm for new projects and future upgrades. The contribution of tradespeople to our business is never underestimated.

Snowy Hydro accepts apprentices across the mechanical and electrical trades each year, and looks to hire people as much as possible from the Snowy Mountains region.

All apprentices rotate through regional operation areas and have the opportunity to gain permanent positions at Snowy at the end of their apprenticeships. Some go on to train in a second trade, providing the business with extra, hugely valuable skills.

? **DID YOU KNOW THE 2018 AUSTRALIAN APPRENTICE OF THE YEAR WAS SNOWY HYDRO'S MICK EDWARDS?**

A qualified motor mechanic and mature-aged tradesman, Mick took on a second apprenticeship as an electrician and was so successful he won the national award.

Mick's commitment to apprentices, their training and mentoring is second-to-none. He is the company's Apprentice Coordinator and is passionate about producing excellent tradespeople and well-rounded individuals.

i **The next application period for a Snowy Hydro apprenticeship will open in mid-2020.**

So if you or your high school-aged son or daughter is keen to kick start their career with a trade and is interested in science, technology, engineering and maths, they should start preparing now!

NEW RENEWABLE ENERGY CONTRACTS

Did you know Snowy Hydro's retailer Red Energy is now powering all of Thredbo's major resort operations with clean, renewable energy?

This is just one of several landmark contracts Snowy Hydro has signed with commercial customers to supply reliable, round-the-clock energy from 100% renewable sources like wind, solar and hydro.

To provide energy on-demand, when a customer needs it, Snowy uses its hydro power station assets in combination with intermittent wind and solar to create 'firm' reliable energy.

This firmed, on-demand renewable energy is vital for the rapidly-changing National Electricity Market to meet current and future energy demands at the lowest cost.

This new offering from our suite of firming products is a fast-growing part of Snowy Hydro's business and one which holds significant promise given our unique fast-start hydro assets and integrated portfolio of renewable energy sources.

With more customers seeking renewable energy to power their operations, there is significant interest in Snowy's energy products.

New contracts signed with commercial and industrial customers will be underpinned by renewable energy produced from the eight wind and solar projects

built under long-term offtake contracts from Snowy Hydro's successful 2018 Renewable Energy Procurement Program (REP-P).

The REP-P secured 888 megawatts of wind and solar projects across New South Wales and Victoria with offtake contracts of up to 15 years. This new energy allows Snowy Hydro to offer very competitive, firm, renewable energy prices to customers.

The Snowy 2.0 pumped-hydro project will further strengthen Snowy's existing ability to firm vast amounts of renewable energy.

Snowy Hydro can release water to generate at times of peak demand and use excess energy for pumping to top up water supplies - for example, when the sun is shining in the middle of the day producing solar energy at a time when energy demand across the system is relatively low.


Aside from Thredbo Ski Resort, Snowy has also signed long-term contracts with the University of Newcastle and Dexus, a large property investment group.

These large customers all have a commitment to environmental sustainability, along with a desire for long-term price certainty, which aligns well with the product Snowy Hydro and Red Energy is able to offer.



Top to bottom: Jack Cooper, Edén Mulquiney, Luke Jackson, Grant Hardwick and Fraser Stout

MAJOR REGIONAL MILESTONES

 The Snowy Mountains Hydro-Electric Scheme is the most complex, multi-purpose, multi-reservoir hydro scheme in the world with 16 large dams, 80km of aqueducts, 145km of tunnels and nine power stations, two of which are underground, and one pumping station.

As you can imagine, a Scheme of this scale has a lot of moving parts, with many large pieces of infrastructure strategically connected together. The longevity of the infrastructure not only highlights the original design and construction of the assets, but also the expertise of Snowy Hydro maintenance staff, past and present.

This year we are celebrating 70 years since the first ceremonial blast in Adaminaby to signal the start of construction of the mighty Snowy Scheme. In addition to these major celebrations there are other milestones to recognise in 2019, specifically on the Snowy-Murray Development side of the Scheme.

Construction of the Murray 2 Power Station was completed 50 years ago in 1969. Located near Khancoban, water flows westward from the central storage area of Lake Eucumbene and other smaller dams, through Murray 1 Power Station, on to Murray 2 and out into the Murray River for irrigation and environmental releases. Four generating units at Murray 2 provide a total of 550MW.

This year a significant replacement of the control and electrical systems is underway at Murray 2. After 50 years of service,

some of the electrical equipment fundamental to the operation of the plant is reaching the end of its life and is no longer able to meet the demands of today's electrical generation network.

The control system replacement is planned for the next 18 months and will be followed by mechanical overhauls and turbine upgrades that, together, will see the plant renewed to continue its reliable operation for decades to come.

The two-unit Jindabyne Pumping Station also began operations in 1969 and forms an important part of the Snowy-Murray Development portion of the Scheme. The Jindabyne Pumping Station pumps water from Lake Jindabyne (normally at off peak times such as nights and on weekends) into Geehi Reservoir.

Another of the Snowy-Murray Development storages, Island Bend Dam, is 54 years young this year. Constructed between 1962 and 1965, its purpose is to divert water from the Snowy River, below Guthega Power Station, into two trans-mountain tunnels.

The Eucumbene-Snowy tunnel takes water into Lake Eucumbene for long-term storage while the Snowy-Geehi tunnel moves water into Geehi Dam, where it makes its way westward via Murray 1 and Murray 2 Power Stations and eventually into the Murray River.

Flows down the Snowy River can change quite dramatically. In the last 10 years, there have been two significant rain events resulting in the level rising nearly nine metres per hour, resulting in flows in excess of 500 cubic metres per second going over the Island Bend spillway.

The four spillway gates need to respond quickly to the changing water levels and automatically open to protect the integrity of the dam. That's why it is imperative that upgrades take place from time to time to ensure the ongoing reliability of the dam and its spillway.

This year we completed a major upgrade of the spillway gate control systems. The new controls utilise modern electronic control technology, and in some cases they are now duplicated to ensure that the gates will respond under the most adverse of conditions. They can now be operated automatically without human intervention, either remotely from the Snowy Mountains Control Centre or locally from the site.

OUR PEOPLE MAINTENANCE TECHNICIANS



Justin Gumela and Tom Condon

At Snowy, our people are our most important assets. The diversity of our business means we have so many talented, skilled and experienced people in a wide range of roles.

At each of our power stations we have Maintenance Technicians who operate, maintain and assist the Snowy Mountains Control Centre to keep the assets operational and available for service. Tom Condon, a mechanical fitter and Justin Gumela, an electrical fitter, are our Kosciuszko region Maintenance Technicians based in Jindabyne.

Tom and Justin have their hands full! They work together to keep Guthega Power Station, Jindabyne Pumping Station, four dams, a small hydro and other outlying and auxiliary plant operational.

Tom and Justin are both committed to safety and work well together due to their different trades and backgrounds.

"The best thing about working in the Kosciuszko region is we have a solid team that enables us to work together effectively and are always looking out for each other," Tom said.

"It is awesome working in the Kosciuszko region, the team welcomes anyone new into the area, inviting them out to after-hours activities such as mountain biking, skiing and other social events." Justin said.

PART OF THE COMMUNITY

WORK EXPERIENCE FOR CLONTARF STUDENTS



Jackson Hamson and Blair Tracey in front of a mural at Tumut 2 Power Station



Blair Tracey and Nick Holloway standing with a new dry-type transformer after it was fitted into place in readiness for electrical connection to Tumut 2 Unit 5 Generator

In July, Snowy Hydro hosted a small group of Clontarf Foundation students for work experience in the Upper Tumut region.

The students, Nick Holloway, Jackson Hamson and Blair Tracey, all Year 12 students, came from across NSW and Victoria to get a taste of what life as a Snowy apprentice is like.

It was fantastic to have Josh Cameron and Mitch Murray, former Clontarf students and now Snowy apprentices, on-hand to help show them the ropes. Josh and Mitch are both wonderful examples of how work experience can lead to a career with Snowy.

Blair and Jackson were both keen on a mechanical trade so they worked under the watchful

eye of the Snowy team on the inspection and repair of large hydro-electric generators located at Tumut 2 Power Station.

Nick worked with the Snowy electricians to help remove one of the original oil-filled auxiliary transformers and install a new environmentally-friendly dry-type auxiliary transformer. Nick found this work incredibly interesting and rewarding knowing the transformer will continue to operate over many decades to come.

Snowy Hydro is a proud sponsor of the Clontarf Foundation, an organisation that assists young Aboriginal and Torres Strait Islander men across Australia in education, life skills and self-esteem, ultimately preparing the boys for life beyond school.

By tapping into the boys' love and passion for sport, the Clontarf Foundation is able to improve their future employment prospects by encouraging school attendance up to completion.

In doing so, the boys also form the foundations that support healthy choices, leading to more purposeful, meaningful lives which enriches the communities in which they live.

For us at Snowy, it's a privilege to be able to connect with and help young Indigenous Australians to reach their full potential and to support young people into employment.

PCYC PROGRAM HELPING YOUTH BECOME FIT FOR WORK



PCYC Fit for Work graduation ceremony in Tumut

Snowy Hydro is a founding corporate partner of the Police Citizens Youth Clubs NSW (PCYC) and is committed to supporting the NSW Police Commissioner's RISEUP youth employment program, which provides employment pathways for disadvantaged and disengaged young people.

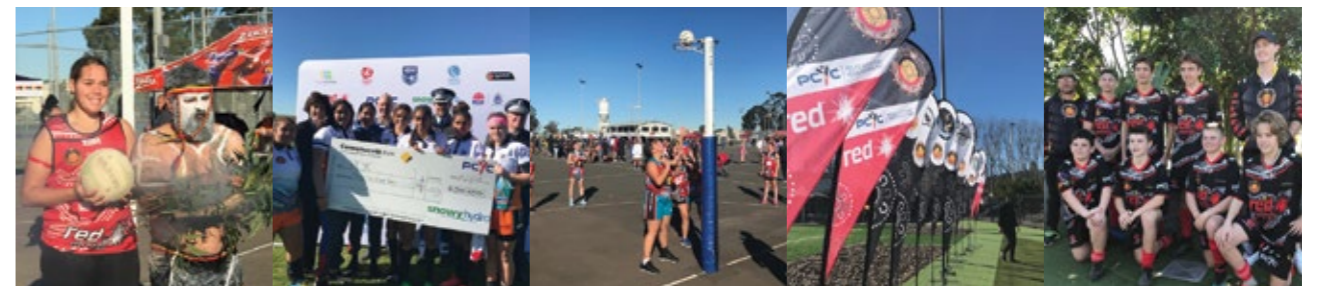
Fit for Work is a 10-week RISEUP program that helps prepare students for the workforce and equips them with the necessary skills to find employment. The program teaches students many important life skills, focusing on finance, community, personal health and the importance of physical activity. Students work towards their First Aid Certificate, Construction White Card and

Certificate 1 in Retail, as well as undertaking a work experience placement.

Snowy Hydro is currently working with police officers in the Riverina and Tumut areas showcasing potential career pathways to the young people who are enrolled in Fit for Work. As part of the program, Guy Boardman, Area Manager for the Lower Tumut region, met with the group and talked to them about career opportunities at Snowy.

In early July, a group of young people in Tumut successfully completed the PCYC Fit for Work program. The graduation ceremony was a great way to recognise the dedication and achievement of the youth who graduated from the program.

NATIONS OF ORIGIN A BIG SUCCESS



Young people at the recent Nations of Origin event

The PCYC Nations of Origin is an annual sports tournament, held during NAIDOC week, that aims to empower and motivate youth and celebrates Australia's diverse Indigenous culture and its deep impact on our history and stories.

Red Energy and Snowy Hydro are proud sponsors

of the Nations of Origin. The event focuses on reconciliation, education, cultural identity and sport and encourages school attendance by requiring all participants attain a minimum school attendance rate of 80%.

Over the past six years, the Nations of Origin has been a huge success. This year approximately 1,200 players represented more than 20 Aboriginal nations in rugby league 7's,

football 5's, basketball and netball. It was great to see the increased engagement and participation of Indigenous and non-Indigenous youth!

As a business we continue to look for ways to increase our engagement with Indigenous people and provide employment opportunities to help bridge the gap.



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in renewable energy.**
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