snowyhydro NEWS

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REBUILD RECOVER RESILIENCE

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INSIDE

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Cover photo and this spread image: Courtesy of Peter Strickland

CEO UPDATE

CEO Paul Broad gives an update on our key activities

There is no question that as a region and community, we've had a tough few months with the bushfires and a continuation of devastating drought. Snowy has a long history in the mountains - we're 100% committed to the region and will work alongside the community as we all rebuild.

Preparing for the bushfire season is a critical focus for us every year, but it's fair to say we – like the rest of the community – were knocked for six by the ferocity of the summer bushfires in NSW and the scale of devastation, some of which was in Kosciuszko National Park.

Snowy experienced its own serious bushfire impacts, with significant damage at our operational town in Cabramurra and to some of our regional weather and water assets. There was also damage to many transmission lines across the mountains, which impacted Snowy's ability to deliver power to the grid.

At Cabramurra we lost 35 houses and other buildings. Thankfully, none of our staff and contractors were injured as we had evacuated the town and our Snowy 2.0 worksites well in advance. Demolition of Cabramurra's destroyed buildings – some contaminated by asbestos – is underway, and we are planning to rebuild the town using the latest bushfire-resistant designs and construction materials. Please understand that for safety reasons, the township is currently temporarily closed to the public.

Amazingly, the Snowy 2.0 construction site at Lobs Hole fared well in the 4 January bushfire, and work onsite recommenced within a couple of weeks.

At a time of so much devastation locally, we have been reflecting on the importance of our regional footprint, large local workforce and our significant economic contribution across the mountains. As Snowy 2.0 progresses, there will be more new jobs created, more opportunities for local businesses and hundreds of millions of dollars invested locally. The project and the ongoing work of Snowy Hydro will be more critical now than ever, as the region recovers.

Our support for our retail customers continues. Since the start of the bushfire season in November last year, Red Energy and Lumo Energy have provided customers with more than $600,000 in financial assistance. As an affected Red or Lumo customer, or if you're a volunteer firefighter, you're eligible for $200 credit on your bill and we encourage you to call our customer service teams.

This summer we have seen market volatility caused by factors including unplanned outages by coal generators, bushfires reducing the capacity of transmission lines and high winds and storms blowing over transmission towers. This shows why Snowy's fast-start generation and hydro storage capacity are critical to keep the lights on.

The market conditions meant we could utilise our pumping capabilities at Tumut 3 Power Station. We have been able to use surplus solar energy during the day, when energy prices are very low or even negative for pumping, and store the water in our dams for energy generation at times of peak demand. This is a trend we expect to see a lot more of and one of the many reasons why Snowy 2.0 is such a critical large-scale storage project.

Pumping also gives us the chance to reuse and recycle available water - an important capability for us in the dry periods we have been experiencing. In many areas across NSW, February brought significant rainfall, but unfortunately not a lot fell over the Snowy Scheme catchments. We will continue to strategically manage any inflows and our water storages to ensure we can generate energy at times of peak demand and meet all our water release obligations.

I'd like to end by conveying our sincerest thanks to all volunteer firefighters and emergency services personnel involved in the bushfires. Your dedication and commitment has been invaluable and an enormous service to the community,

CABRAMURRA – RECOVER, REBUILD, REBOUND

The Cabramurra recovery effort is in full swing following January's devastating bushfire, which severely damaged many buildings in the Snowy operational town.

The clean-up is underway and will be followed by the reconstruction of staff and contractor accommodation, once detailed plans have been drawn up and finalised.

As it does every year, Snowy Hydro conducted extensive bushfire preparation activities prior to summer, including vegetation management to maintain the asset protection zones around important assets. In the days leading up to 4 January, staff carried out additional preparation around the town, Tumut 1 and 2 power stations and other assets for the worsening fire conditions before evacuating safely.

Sadly when the firefront came through Kosciuszko National Park, it destroyed 35 of the houses at Cabramurra, along with three accommodation blocks, the school, old ski club and Edinburgh Cottage, where members of the Royal family and special guests had previously stayed.

Fortunately, the main buildings housing the bistro and general store, the fuel depot and other buildings remained intact, providing a great base to rebuild from.

Snowy 2.0 contractors usually housed at Cabramurra have relocated to nearby bushfire-affected communities including Adaminaby and Providence Portal and Talbingo, taking up newly-available tourism accommodation.

Since the fire, an enormous amount of work has been done at Cabramurra, and we have been working with a range of agencies and authorities, including National Parks and Wildlife Service, local governments and the Rural Fire Service, to achieve this.

After initial inspections and assessments:

- Services have been restored to the township including power, water and sewerage.
- Thorough cleaning of habitable buildings has enabled a small number of regional staff and contractors to return to living in the town.
- Queanbeyan-based specialist demolition contractor AGH has been engaged to carry out the safe demolition of buildings and removal of asbestos-contaminated waste, and commenced work in late January.
- Another contractor, Leed Engineering and Construction, has been re-mobilised to continue with the construction of a new water filtration plant, and to assist with demolition and repair works.
- Planning has started for the town's rebuild.

While Cabramurra was originally constructed to house Snowy Scheme workers and their families, and was the base for the Tumut 1 and Tumut 2 power station projects during the 1950s and 60s, it is now an operational town for Snowy Hydro and a drive-in drive-out base for our staff and contractors working in the region.

We will rebuild our town to meet our current and future needs, and will do so in a way that ensures the safety of our residents, by incorporating the latest bushfire-resistant designs and construction materials.

SAFETY ALERT

For safety reasons, **Cabramurra is TEMPORARILY CLOSED TO THE PUBLIC**, and this is likely to remain the case for several months. Demolition and clean-up work is continuing, with many buildings requiring specialist remediation as they contain asbestos. There will be many heavy vehicles travelling on roads in the area over the coming months, with some road closures and restrictions expected.

SNOWY 2.0 – BACK TO WORK

JOBS AND BUSINESS OPPPORTUNITIES

Local people interested in **Snowy 2.0 jobs** should keep an eye on the **futuregenerationjv.com.au** website and local businesses can find tender packages on the ICN Network **gateway.icn.org.au**

Work on the Snowy 2.0 project was back underway in January, after only a short disruption caused by the devastating bushfire. We were well-prepared for such an event and with the safety of Snowy Hydro staff and contractors being paramount, everyone was evacuated from site well before the bushfire came near the construction site.

The Lobs Hole construction area came through the bushfire relatively unscathed, and the few items of heavy plant, equipment and support infrastructure, such as water pipes, that were burnt have already been replaced or restored.

Our contractors Leed Engineering and Construction (Exploratory Works roads upgrades) and Future Generation Joint Venture (Exploratory Works and the main project) re-mobilised to site as soon as access was made safe and are on-track with a number of key project activities.

Leed, which carried out the hazardous tree clearing on Lobs Hole Ravine Road after the fire, has continued with access road construction and upgrades.

Future Generation has begun building the worker accommodation camp and good progress is being made on excavation of the Main Access Tunnel portal.

Future Generation's subcontractor, GHD, has begun working in the Marica area near Lobs Hole on an important geotechnical investigation, focusing on the underground cavern that will house the Snowy 2.0 power station and the inclined pressure shaft. This investigative drilling work will enable the finalisation of the project design.

The GHD work crew of more than 40 people, comprising mainly local subcontractors, is being accommodated in Adaminaby for the duration of the drilling program.

The main Snowy 2.0 project workforce will stay onsite in worker camps once constructed, but for the time being, with rooms at Snowy Hydro's operational town of Cabramurra not available, Snowy 2.0 contractors are soaking up accommodation that has become available in local towns since bushfires impacted regional tourism. These include communities near the Snowy 2.0 work sites such as Adaminaby, Anglers Reach, Talbingo and Providence Portal.

With the Snowy Mountains economy facing the challenge of bushfire recovery, the local economic and social benefits of a major regional infrastructure project like Snowy 2.0 are more critical than ever.

SNOWY 2.0 – PROJECT UPDATE

An important part of the Snowy 2.0 project is the production of the concrete segments that will line the waterway tunnels linking Tantangara and Talbingo dams.

The concrete segment factory is proposed to be built at Snowy Hydro's industrially-zoned site at Polo Flat, outside Cooma, and the approvals process for the facility is almost complete. The segment factory will employ approximately 125 people, many of whom will be local people.

In coming months, the community will start to notice increased activity around the Polo Flat area, with work beginning on several projects to establish safe access.

Transport for NSW (TfNSW) is starting work on a new roundabout at the intersection of the Monaro Highway and Polo Flat Road, which will improve safety for road users and allow trucks to safely transport the segments from the manufacturing factory to Snowy 2.0 construction sites.

Polo Flat Road itself will also receive a facelift. Snowy Hydro is working in consultation with Snowy Monaro Regional Council (SMRC) to provide some much-needed upgrades to the road, before the expected increase in traffic movements from the segment factory.

Along with the new roundabout works, people can expect the site works to begin along Polo Flat Road over the coming months.

At the segment factory location, pre-construction activities are about to get underway, including the demolition of old buildings, followed by construction of the new factory.

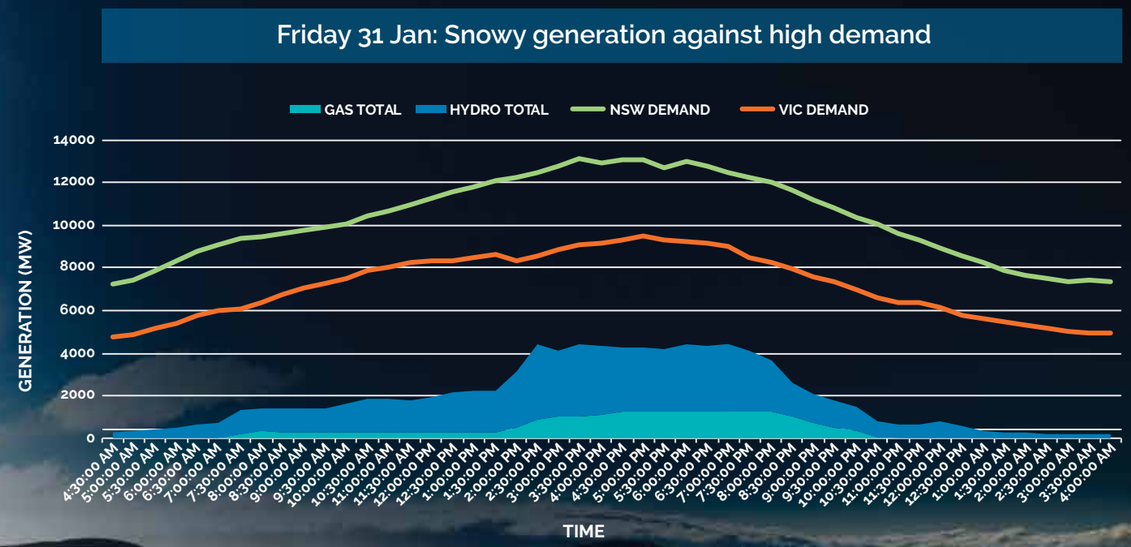
Meanwhile, the Snowy 2.0 principal contractor, Future Generation, is working closely with TfNSW, National Parks and Wildlife Service and SMRC to develop a custom-made vehicle that will greatly improve safety and efficiency when transporting the concrete tunnel segments to the Snowy 2.0 worksites.

The Special Segment Transport Vehicle will be capable of transporting up to nine segments at once - three times the number compared with a regular semi-trailer configuration.

If approved, this innovative trailer design, which includes a greater number of axles than usual, will reduce segment truck movements by up to two-thirds.

The Snowy 2.0 Main Works approvals process is on-track, with Snowy Hydro's Response to Submissions for the Environmental Impact Statement under consideration by the NSW Government.

A SUMMER OF CHANGE



Reliable, affordable electricity is something that most of us take for granted. While we all see the poles and wires that connect our houses to the energy grid, this is only the most visible link in a chain of complex infrastructure dedicated to ensuring our homes and business have reliable, affordable power, every hour of the day.

For decades, Australians' energy consumption was fairly uniform. It increased when we woke up, plateaued during the day, and increased again as workers arrived home and switched on domestic appliances. At the same time, large coal-fired generators provided a stable source of power, complemented by more flexible sources of generation like hydro-power and gas. Snowy Hydro has long played an important role in keeping this system secure, using its fast-start hydro-electric and gas generation assets to keep the system in balance.

In recent years, much of this old order has changed. Australia's fleet of coal-fired power stations are less reliable than they once were, and are being replaced by wind and solar power. It is now commonplace for households to install rooftop solar and batteries. Each year a new record is set for electricity demand as the use of air conditioners continues to grow.

The shift to renewable energy has many environmental benefits, but their intermittency – the natural variability of wind and sun – also presents challenges in maintaining energy security and reliability. Together this means that both our energy demand and supply is more unpredictable and volatile than in the past and matching the two is a rather more precarious task. These trends mean that flexible sources of generation and large-scale storage are more important than ever before.

The Snowy Mountains Scheme, with its ability to pump and store large volumes of water in its dams, already provides a critical source of fast-start generation and energy storage. Snowy Hydro is already increasingly taking advantage of the relative surplus of solar energy, by pumping water into its storages during the middle of the day at its Tumut 3 Power Station, to be deployed during periods of energy scarcity – typically in the evening when solar power is no longer available. Pumping during the day is a significant change. It has up-ended a longstanding dictum of the electricity industry, which held that electricity was expensive during the waking hours and cheap in the dead of night.

While these trends create long-term opportunities, adapting to this new world is testing the resilience of the electrical grid. The unprecedented stress experienced by the grid this summer shows the value of flexibility as we transition to a low-carbon energy sector. It also demonstrates the need for assets like Snowy 2.0, the major expansion of the Snowy Scheme now underway. When completed, this project will link Talbingo and Tantangara dams and provide a week's worth of energy storage, filling the gaps when wind and solar droughts reduce the supply of renewable energy.

The reasons behind the market volatility this summer are a combination of the familiar and the new. Australia's ageing fleet of coal generators have suffered an unusually high number of unplanned outages, bushfires have reduced the capacity of transmission lines, high winds and storms have blown over transmission towers and extreme temperatures have reduced the output of many solar and wind power stations.

This volatility has been reflected in the National Electricity Market, the wholesale market where demand and supply are matched every five minutes. On several days, prices jumped from their typical range of $50-$100 a megawatt hour to more than $10,000MW/h.

Fortunately, the collective efforts of generators like Snowy Hydro and energy consumers (many of whom voluntarily reduced their consumption), coordinated by the Australian Energy Market Operator, allowed consumers to enjoy an almost uninterrupted supply of power. The small number of blackouts that did occur were caused by weather and bushfire-related damage to essential infrastructure.

To take one example, on 31 January 2020, NSW, Victoria and South Australia all experienced extremely high demand at the same time. A storm cell in western Victoria smashed and knocked over eight transmission towers, and unplanned outages at a large coal-fired power station further weakened the network.

Snowy Hydro brought the full weight of its diversified portfolio of hydro and gas generation assets to bear on this system stress, helping to keep the lights on across the state. We continually maintain and upgrade our assets precisely so that we are ready to respond in an instant to these types of events.

As the energy system transitions towards renewable sources of energy, Snowy Hydro will continue to play an important role in ensuring Australians have access to reliable, affordable electricity.

MURRAY REGION COMMUNITY SPIRIT SHINES THROUGH

The Murray region, like many parts of NSW impacted by bushfires, has had a difficult start to 2020. The local community has shown great resilience and has come together to overcome hardships and adversity. Snowy Hydro's Murray team has had to face its own share of challenges and is back to work, with an extremely busy year ahead.

During the worst of the bushfires, the Snowy Hydro Murray team was able to share its communication services with the community. Fortunately, Snowy Hydro has a robust communications system with multiple communication channels, as it is vital to our daily operations. With public communication networks disabled by the fire situation for an extended period of time, the team helped impacted locals access Snowy Hydro wi-fi and phone facilities.

This was a great community initiative to enable people to connect with family, friends and important services. It reduced the feelings of isolation and helped to ease concerns about loved ones.

In other news, both locals and visitors to the region alike can rejoice, with the Khancoban Visitor Information Centre now open to the public. Snowy Hydro has had a long-standing relationship with the National Parks and Wildlife Service and this shared visitor centre cements a great partnership.

The Khancoban Visitor Information Centre is located on the Alpine Way at the western entry point to Kosciuszko National Park. It is the place to pick up maps, buy your national parks pass, learn more about the mighty Snowy Scheme or gain general information to plan your adventure in the Snowy Mountains.

There is more good news - during April, booked tours will return to Murray 2 Power Station. To book or find out more, please call (02) 6076 9373 or email murray.bookings@snowyhydro.com.au.

There is a lot happening in the region in April, including the annual Man from Snowy River Bush Festival (read more on page 15).

The mighty Snowy Scheme is an engineering marvel and with our Murray assets more than 50-years-old, modernisation and regular maintenance is the key to increasing efficiency.

Snowy Hydro is replacing the old control system in Murray 2 Power Station with smarter and more responsive technology. The 'Secondary System Upgrade' (SSU) work continues on Unit 11 after successful completion of the upgrade to Unit 12 at the end of last year.

Upon completion of the Unit 11 SSU, the team will move onto a planned upgrade of Unit 13, which will include the SSU, as well as a turbine replacement. The power conductors that connect the generator rotor to the transformers will also be upgraded to increase capacity. This work will then continue on the remaining units at Murray 2 Power Station.

At Murray 1 Power Station, preparations are being made to begin the generator rotor pole replacement later in the year. This will be an ongoing program, with each of the 10 units having all 12 of their rotor poles replaced in turn. These works are scheduled to continue for the next five years.

KICK-STARTING CAREERS

Front (L to R): Grace Pendergast, Emily Lucas, Sarah Fraser, Zara Farrell and Nicolas Stibbard.
Back (L to R): Chloe Trevanion, Maria Tarasyuk, Emily Pearce, Ian Grant, Hayden Dykstra, Joshua McMahon

Snowy Hydro has a long and very proud history of providing career opportunities for young people, particularly those from across the Snowy Mountains region on both sides of the Great Dividing Range.

Annually the business takes on trainees, apprentices, cadets and graduate engineers, along with a vacation program for university students, predominantly within the STEM field. In total, about 10% of the workforce are in a formal development program, which is an important part of planning for the future workforce needs of the business.

This year 13 trainees have started at Snowy - 11 are based in Cooma, with one each in Talbingo and Khancoban. The Snowy trainee program has been running since 1991 and combines TAFE learning and on-the-job experience. Traditionally, the trainees are school-leavers who have studied business administration and this year we have been able to introduce information technology as another option. The trainees are placed with one team for the full year and have individual mentors to guide them. They quickly become valuable members of each business group and many have forged careers at Snowy after starting out with a traineeship.

Six first-year apprentices have started their careers at Snowy Hydro this year, bringing the total number of apprentices to 23 for 2020. The first stop for the new recruits was Wollongong TAFE, where they completed an intensive program designed to get their basic skills on track so they can hit the ground running.

Over the next four years, the apprentices will complete learning blocks at TAFE in Wagga in either electrical or mechanical engineering streams. They are rotated around the Snowy regions annually, which gives them the opportunity to work with a range of mentors and teams and to learn about the different assets, ensuring they are able to gain plenty of experience to build a broad skill set.

Many apprentices from over the years have stayed on as tradespeople, while others have pursued other career opportunities within Snowy Hydro.

Snowy's cadet program provides university students in various fields with work placement during university breaks and the guarantee of a job when their courses are complete. Each summer also sees university students within STEM fields participate in the vacation program and many of these people then go on to be part of the graduate program with full-time positions when they've finished studying.

Snowy's focus on training and development helps to ensure that the business has the people and skills that are needed now and into the future and it is another way that we support local people and our communities.

Snowy's traineeship and apprenticeship programs provide great career opportunities for young people to make a start in their career. Keep an eye on the Snowy Hydro website and our Facebook page for details on our 2021 trainees and apprentices intake.

THE FOREFRONT OF TECHNOLOGY

As a business, we are constantly looking for ways to improve the way we operate and maintain our assets, and to do this as safely as possible. Snowy Hydro's commitment to safety is paramount and reducing the risk our employees are exposed to is the number one focus.

Technology-enhanced processes and digital tools are utilised by Snowy Hydro to most importantly mitigate safety risks, as well as increase quality, improve standards and reduce costs. Underwater drones, commonly known as Remotely Operated Vehicles (ROVs), provide increasing opportunities for achieving our future goals, maintaining our high safety standards and keeping our stations running reliably.

With so many of our critical hydro assets sitting below the waterline, it can be challenging to check their condition and make sure they are able to operate as intended. ROV inspections are completed in locations such as dam walls, power station intakes and tunnel outlets.

While Snowy Hydro has made use of ROVs for many years now, primarily through contracted service providers, recent improvements in technology have prompted the business to conduct trials with a new, low-cost consumer-type ROV. This system was quickly given the tick of approval thanks to the positive contribution it made to the business and our operations.

Integrating these technologies and capabilities in our hydro regions has the potential to improve safety by:

- Reducing the need for divers and boats entering waterways;
- Allowing ad-hoc and opportunistic inspections on assets to be performed at short notice; and
- Facilitating condition assessments of submerged assets with reduced cost, less interruption to operations and minimal environmental disturbance.

The act of physically inspecting assets, whether by having to enter water from steep terrain, in freezing temperatures or taking some assets out of service to complete the necessary inspections, has now been eradicated through the use of this technology.

Snowy Hydro's use of remotely-operated aircraft, commonly known as drones, has also been expanded due to the ever-increasing capabilities of these systems.

The Elios 2, a collision-resilient, remotely-piloted aircraft, was recently purchased for use across all of our operations. It features a lightweight carbon fibre 'cage', in-built lighting and combined video and thermal imaging cameras, making it ideally suited for remote inspections or hard-to-access areas such as confined spaces, to capture every corner and inch of our most complex assets. By increasing worker safety and lowering operational costs, the Elios 2 has been a very successful addition to Snowy Hydro.

We are currently investigating possible uses for ground-based and magnetic crawling systems for remote inspections of areas like access tracks and gas turbines.

Embracing new and developing technologies allows our assets to be maintained in the best condition for our operations, while also keeping our people safe.

SUPPORTING OUR COMMUNITY

TUMBATREK 2020

Tumbatrek 2020 participants

Snowy Hydro prides itself on being an active part of the local community and more than 70% of our employees call the Snowy Mountains home. Each year, Snowy Hydro, Red Energy and Lumo Energy invest more than $2 million in local communities and sponsorships.

One of the main ways we achieve this is through partnering with local events and programs that not only help economically, but encourage people to come and experience the best our regions have to offer.

As you are aware, the local communities of south-eastern NSW have endured a devastating start to 2020. All areas are struggling in the absence of one of their biggest sources of income - tourism. As the community starts to rebuild, it is important that we support our towns and regional areas by visiting and supporting local events.

Regional communities tend to come together in times of crisis and people provide support to one another. While some local events across the Snowy Mountains and surrounds have been cancelled or postponed, many are going ahead and we encourage you to join in the fun and attend.

Snowy Hydro and its people remain committed to the community, just as we were when the Snowy Mountains Scheme was constructed more than 60 years ago. We see a bright future for the region, where we will continue to grow with the communities that helped build the Scheme.

There are currently several regional campaigns to drive visitation and spending in regional Australia. 'Buy From the Bush', 'Bring an Empty Esky' and 'Holiday Here This Year' are fantastic initiatives and at the core, aim to encourage everyone to visit bushfire and drought-affected areas and spend up big!

It is important that each and every one of us make a concerted effort to support these communities, which may be just around the corner or hundreds of kilometres away. Whether it's a day trip, a weekend away or a holiday, make sure you put one or more of these places on your bucket list for 2020!

UPCOMING EVENTS

Sponsored by:

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14 MARCH
COOMA SHOW, COOMA

The 145th annual Cooma Show will be fun for the whole family, with rides, showbags, food stalls and more. You will see the finest in cattle, sheep, horses and poultry. The pavilion will be full of wool, photography, visual art, needlework, handcrafts, fruit and vegetable, flowers, and cooking.

For more information visit: coomashow.com.au

2 - 5 APRIL
THE MAN FROM SNOWY RIVER FESTIVAL, CORRYONG

The Man from Snowy River Bush Festival is a four-day event held annually in Corryong, Victoria. It is a unique bush gathering of mountain riders, poets, artists and lovers of the Australian High Country and pioneering spirit. The festival brings people together from around Australia to celebrate the traditional high country, bush culture and bush skills that remain an essential part of Australia's heritage.

For more information visit: bushfestival.com.au

10 - 13 APRIL
LAKE LIGHT SCULPTURE, JINDABYNE

Lake Light Sculpture is an inspiring outdoor sculpture exhibition and competition held along the stunning foreshore of Lake Jindabyne. As night falls, the real magic begins. Illumination has, since the festival's inception, been a defining element of Lake Light Sculpture, with the sculptures lit from sunset to 10pm each evening. It's an ideal time to visit the region with the autumn chill.

For more information visit: lakelightsculpture.com.au

2 MAY
FESTIVAL OF THE FALLING LEAF, TUMUT

The 66th annual Festival of the Falling Leaf allows visitors and locals alike to appreciate the autumn change as a richness of colour comes to Tumut. Over the years, the festival has seen changes, but it continues to attract thousands to the region.

For more information visit: fallingleaffestival.com.au

16 MAY
BATLOW CIDERFEST, BATLOW

Batlow CiderFest is a day of music, entertainment, food and fun. Cider enthusiasts can savour Batlow's unique home-grown range of boutique ciders. With different cuisines on offer, as well as other merchandise stalls and interesting exhibits, two stages of entertainment, street performers, buskers, and Wacky Apple Tarts, there is something to please everyone.

For more information visit: batlowciderfest.com.au

Graeme Sturt and Andrew Symons
(Tumut RFS Brigade and Snowy Hydro workers)

Mateship.
Courage.
Community spirit.

To all the wonderful volunteers,

Thank you.

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