

01/09/2025

Cr Jasmin Jones

Mayor - Yass Valley Council,

209 Comur Street Yass, NSW 2582

Dear Jasmin,

Please find my Submission below as discussed

**Renewable Projects Within the Yass Valley LGA and the possible effects they might have with Fire Suppression on days where the Fire Behaviour Index (FBI) is 40 or above or during days of Total Fire Bans (TOBAN)**

**Introduction**

This submission has been made through the eyes of a NSW RFS Volunteer (retired 2018) with 37 years of both firefighting and fire management experience – 27 years fighting fires within the Yass Valley LGA including the 2003 Canberra fires and a command role during the Cobbler Road Fire in 2013 which I was the Group Captain. The submitters firefighting experience and qualifications are detailed at the end of the submission.

Information contained in this submission is an opinion only however contributions to this submission have been sought from the following providers:

- A current highly experienced firefighting pilot flying AT802 Fire Bombers in NSW.
- A retired (2025) Southern Tablelands Zone Manager with 35 years' experience within the Yass Valley Region
- A retired Southern Tablelands Zone Operations Officer with decades of Aviation experience in firefighting
- Published articles on Wind Turbine fires and their management
- Landowners who have been affected firsthand by the large fires discussed in my submission.

This Submission is purely centred around Fire Fighting Suppression and how Renewable Projects may play a role in hindering or supporting those suppression efforts within the Yass Valley LGA. The submission has no bias for or against renewable energy projects.

The submission will focus on Renewable Projects to the West of The Yass Valley LGA including the effects of Wind Turbine Projects, The Hume Link and associated Power Lines as well as BM masts that are associated with renewables. The submission also briefly touches on Solar Farms proposed in the Southern and Eastern areas of the LGA.

The submission is focused on the effects to fire suppression during ignition on days where the Fire Behaviour Index (FBI) is at 40 or above or during times of Total Fire Ban (Toban). I do not believe that Renewable Projects have the same effects on Bush Fire Suppression where the FBI is below 40 although I will mention in my submission the Clements Gap Wind Farm Turbine fire in South Australia and the issues firefighters faced during mild conditions.

Whilst there are procedures for Bush Fire Management within Wind Farms the Rural Fire Service does not have any of those procedures publicly available. The Australian Fire and Emergency Services Authorities Council (afac) has also developed well researched guidelines (published 2018) for Emergency Services regarding Wind Farms and Bush Fire Management.

**Fire History**

The Yass Valley Council LGA is located within the Southern Tablelands of NSW. The Southern Tablelands Bush Fire Management Committee (BFMC) coordinates all bush fire risk management. The BFMC area covers approximately 1,455,100 ha. The BFMC area has an average of approximately 265 bushfires per year, 5 of which are considered major fires. (information 2024).

Yass Valley has a history of major fires occurring in a cycle of 2.5 years approximately (Source: Harris Environmental Consulting)

While there are just too many fires to mention, I wish to focus on the history of fires to the West of Yass where large fires impacted the following locations: Bookham, Bowning, Burrinjuck, Yass, Wee Jasper and Canberra, and are now locations (within historical fire paths) for approved and proposed Wind Turbine projects.

They include large fires in 1939 (28,892ha), 1952, 1972 (19,489ha) 1985. In 2003 during the devastating Canberra fires a power line to the West of Yass ignited a fire at Childowla in the Bookham area which threatened The Burrinjuck State Park facilities, spotted into Black Andrew Mountain, jumped the Burrinjuck Dam into Cavan and Wee Jasper all at a time when Yass RFS crews were already stretched beyond limits fighting fires to the South of the LGA including Canberra. More fires were experienced in 2006 (a fire that started in a similar location to Cobbler Road fire), 2013 Cobbler Road Fire which burnt approx. 14,000 Ha and threatened Bookham and Yass (See attached RFS publication Speed and Fury), 2023 (Wee Jasper Rd fire 2,228ha).

The Bowning area to the North of the Hume Hwy has also experienced numerous fires, in the 1990s, In 2014 a fast running grass fire which threatened Yass and the Yass Service Centre, and more recently a smaller fire in December 2024 (caused by lightning) within the proposed Wind Turbine area of Bendenine where arial support was used as part of the fire suppression.

All of the proposed and approved Wind Turbine projects are to be located within all of these historical bush fire prone areas.

### **Terrain and Vegetation**

Terrain and vegetation play a key role in effective fire management. Slope and fuel load effect the rate of spread of a fire. Most of the approved and proposed Wind Turbine Projects will be located within undulating granite country with a mixture of open grassland and scattered areas of eucalypt forest. This combination of fuel and slope has historically resulted in very fast-moving fires during adverse fire conditions. The granite outcrops and rocks combined with undulating to steep slopes makes fire suppression by ground crews very difficult with fast moving fires such as the Cobbler Road fire which travelled at an average speed of 5km.

Slowing the rate of spread with fires in this terrain is difficult without air support which is vital in carrying out a direct attack on the head of a fire. Focus for ground crews is generally placed on property and life protection while trying to contain the flanks of the fire with heavy machinery.

Further South of Bookham however we have Burrinjuck Nature Reserve and Black Andrew Nature reserve which is steep heavily timber country carrying very high fuel loads resulting in crown fires that give off extreme radiant heat. Access for ground crews during these adverse fire conditions are too dangerous for a direct attack, again relying on aerial support to aid fire suppression. The Bondo and Saddle Top projects adjoin similar steep heavily timbered country to the west of Wee Jasper.

All the approved and proposed Wind Turbine projects however will be located in terrain that is indicative to fast moving hard to manage fires where the FBI is above 40. Air support plays a vital role in slowing the head of the fire during these conditions, The possible loss of an air attack around the Wind Turbine projects could have a vital impact on fire suppression.

### **Key Fire Management Concerns**

While no one is denying that you can effectively fight fires both on the ground and with arial support, within the precinct of Wind Farms and their associated wires and BMs, the majority of those fires showing air attack within Turbine locations that have been published such as the "Waubra Wind Farm fire in VIC, has occurred within Wind Farms that were of a single file design enabling a more safer environment for pilots (not in huge clusters as is proposed in the Yass Valley LGA projects) and during very clear mild fire weather conditions were a lower FBI was in place and fires had stopped running. The proposed projects to be located on the Western side of the Yass LGA creates fire management issues that have not been experienced before due to their location, size and cluster design which makes flying between Turbines incredibly dangerous.

#### Key Concerns Include:

- Extensive Fire History In the region with large fires originating from the West of Binalong, Bookham, Bowning, Burrinjuck, Wee Jasper and Yass
- All Wind Turbine Projects and the Hume Link (500KV) are to be located in high bush fire prone locations with a long history of major fires, including in the path of the Cobbler Road Fire that have the capacity to impact surrounding Villages, Yass and Canberra
- Fires occurring on days of FBI 40 + in these locations are fast moving (5-6kmh) and difficult to control. Aircraft use in these weather conditions is vital for the initial attack strategy, targeting the head of the fire and slowing rate of spread. Both the huge mass of Turbines and Power Lines will make this difficult and allow these fires to have the potential for rapid growth in size and fast rate of spread
- The Number of Wind Turbines in each project in conjunction with the cluster Design is unprecedented making any arial attack dangerous. Even if the Turbines are 300m apart and the blades stopped and rotated, because of the layout, fast moving Fire bombers such as the AT802s will not fly through the turbines. They present a No-Go Zone. Downwind of the turbines creates a vortex and forces the nose into the ground. On fire days where FBIs are above 40, visibility is reduced for pilots
- As I have experienced firsthand with the Cobbler Road Fire, with winds gusting to 60- 80km on that day, Helicopters were either grounded or fighting fires elsewhere so even though they have a better capacity to work within the turbines as they can fly slower, on Catastrophic days they can't be relied upon unlike Firebombing Fixed Wing aircraft however even fixed wing aircraft may not fly during high wind conditions which in itself makes fire suppression difficult without the added concerns and risks posed by Renewable Energy projects
- The Wind Farms proposed South of the Hume Hwy will stretch from the Hume Highway near Bookham all the way to Wee Jasper. This again is unprecedented, and the huge mass of Turbines and associated lines could potentially impede firefighting efforts on days where the BFI is 40 or above
- Predominant fires that threaten Yass LGA come from the W/NW and generally start in shires West of Yass. The mass number of Turbines located to the West and Northwest of Yass, Binalong, Bookham and Bowning have the potential to restrict firefighting efforts
- BM masts are not always marked and can present a real hazard for pilots.
- 500 KVA and 300KV wires are even worse, carbon in the smoke causes them to ark electrocuting fire fighters working within proximity to the lines. They pose a significant risk to all aircraft. Yass already hosts vast arrays of 300KV powerlines without adding additional 500KV lines.
- Whilst it is accepted that the improved road infrastructure that is built to service the turbines will aid fire suppression efforts including better access for crews, on days where the BFI is above 40 fires will spot over these roads as was the case during the Cobbler Road Fire in 2013 where the fire spotted over the Bogalara Road, Childowla Road and Burrinjuck Road despite the best efforts of Fire Fighters and air support working along these roads. Using these Wind Turbine service roads for back burning during milder weather conditions is also promoted
- Turbines will need to be turned off during extreme fire weather and the blades rotated for visibility as part of any fire management plan however flying through them is incredibly dangerous especially at speed. With some of Wind Turbines proposed, being constructed at a height of 250 meters this also restricts the height of aircraft to make effective retardant drops.
- There are two approved Solar Farms to be constructed in the SE corner of the Yass Valley Council LGA. They are the Wallaroo Solar Farm (261,000 panels covering 390ha) and Springdale Solar (260,000 panels covering 370ha). Fires igniting within a solar farm or impacting a solar farm really can't be effectively controlled by ground crews due to the safety issues presented where water and electricity do not mix. As such ground crews would have to wait for the fire to pass through before any suppression would take place. This effectively could allow a fire to grow in size on a bad fire day.
- While not directly related to this submission the divisive nature of renewable projects within rural communities has the potential to tear apart the social fabric, indirectly affecting already stretched memberships of remote Rural Fire Brigades

On the 7<sup>th</sup> February 2024 a fire destroyed a wind turbine located within the Clements Gap Wind farm in SA. CFA crews arrived on scene, and these were their key comments:( Source ABC news)

1. The turbine had started a grass fire, and a lot of debris was being thrown from the burning turbine above
2. The fire burnt approx. 30Ha and back burning helped to contain the fire
3. The fire in the Turbine was 120m in the air and destroyed the Turbine
4. Wind Turbines can be very unstable throwing debris across large distances. As such early exclusion zones of 400m had to be established for the safety of CFA fire fighters which hampered containment efforts
5. Due to the height of Turbines fires that start in them have to be left to burn out while being monitored.

This fire is obviously not isolated and luckily started during mild fire conditions. It demonstrates that despite all the efforts made by Windfarm Developers to mitigate fire risk Wind Turbines can still start Grass fires. While uncommon there were several Turbine fires in 2024 in SA. Other Turbine fires include Bulgana Green Power Hub and Portland – Victoria along with a Turbine Fire at the Cullerin Range Stage 1 Wind Farm near Gunning NSW.

#### **Key Fire Threats from Each Individual Project ( indicates number of Turbines)**

- Proposed Saddle Top( 123 Turbines), Jerimiah (65) and Bondo (149), have the potential to hinder firefighting efforts when trying to protect Burrinjuck State Park and the Village of Wee Jasper during BFI +40 and TOBANS fire weather conditions as the prevailing summer winds come from the West. Any Fire starting from the Hume Hwy near Gundagai on these days will be hard to stop once a fire reaches the Wind Turbines. If fires can't be slowed by aircraft in the initial stage's fires have the potential to run into Canberra as was seen in 2003.
- Proposed Bookham (94) have the potential to hinder fire suppression efforts when trying to stop another Cobbler Road fire before it reached Yass and outlying residences. During the Cobbler Road Fire two Fire Bomber AT 802 aircraft were instrumental in applying a direct attack to slow the head of the fire. As stated above they would not fly within the Wind Turbine Precinct during those weather conditions and poor visibility.
- Approved Coppabella (75) Proposed Bendenine (90) and Conroy's Gap have the potential to impact controlling fires from the NW onto the Hume Hwy , Villages of Bowning and Binalong and when combined with the Bookham (94) will again pose a potential threat to firefighting suppression when protecting the Yass Service Centre, Industrial Park and Yass Township. The large presence of existing 300KVA and proposed 500KVA on the Western and Eastern side of the Yass Township add to the difficulties for both ground crews as well as arial suppression efforts
- Wallaroo Solar Farm. Obviously, any fire that starts in the vicinity of Wallaroo on a day where FBI is above 40 has the potential to threaten Hall and the Northern suburbs of Canberra were it allowed to grow. The undulating open grassland terrain in this area is indicative of fast-moving fires and any impediment to a fires control adds to the potential threat to lives and homes.

#### **Summary**

It is well documented that there are guidelines in place for Bush Fire Management and Aviation Protocols (The latest protocols leave the decision to fly up to the pilots) when dealing with Wind Turbines and other Renewable Energy Projects. These Bush Fire Management Plans are also followed as part of the Wind Turbine design and application process. I also accept that firefighting activity's involving the use of aircraft in and around Wind Farms has successfully and safely taken place. The key point of this submission in my opinion is, that the unprecedented scale of these renewable projects which include a combination of Wind Turbines in a cluster formation, Hume Link project (500kv Power Lines 70m height), Broad Casting Masts (BMs) and Solar Farms, all to be located within historically high bush fire prone areas, potentially presents very serious fire management concerns for the Yass Valley Council , its residents, Volunteer Firefighters and the Southern Tablelands Zone Rural Fire Service that has never been tested during fires that occur to the West and South of the Shire on fire weather days where the FBI exceeds 40 or during TOBANS.

Yours Sincerely



**Michael Gray**

**NSW Rural Fire Service Volunteer Group Captain Southern Tablelands Group 1 (Retired 2018)**

**Fire Service History:** 37 Years – 27 years in the Yass Valley LGA: Captain Twice, Deputy Group Captain and Group Captain Southern Tablelands Group 1

**Rural Fire Service Qualifications**

**Rural Fire Instructor (RFI)** Subjects - RFD, CLV, Helicopter Marshal, GL, Fire Suppression, Fire Ground Management

**Fire Fighting:** RFD,VF, BF,CLV,CLW,CLS,GL

**Aviation:** ABK,ACE,ARO, Helicopter Marshal (Fire and Medical Rescue Helicopters), Hot Refuelling, Air Attack Ground Command

**Incident Management Team Member - Southern Tablelands Zone:** ICS,IMC, ARO, Flight Following

**RFS Awards:** Long Service Medal (20 Years), Canberra Fire Medal (2003), National Medal, Mayoral Award (Community Service Yass RFS Volunteers) – 2013 Cobbler Road Fire.