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Gunnedah Public Hearing on the Vickery Extension Project – February 5<sup>th</sup>, 2019.

My name is Chris Lidman, and I am the Director of [REDACTED] and Chair of the [REDACTED]

Siding Spring Observatory was established in 1964 and is Australia's premier astronomical observatory. It hosts the Commonwealth owned Anglo-Australian Telescope, the largest optical telescope in Australia, and telescopes from national and international agencies, including the Australian National University, the Japanese Space Agency, and the Korean Astronomy and Space Science Institute.

The Observatory is located about 100 km southeast of the Vickery Extension Project. It borders the Warrumbungle National Park and is part of Australia's first dark sky park. The Warrumbungle Dark Sky Park is recognised internationally.

In addressing you today, I have a three main aims. Firstly, I wish to increase public awareness of both the dark sky park and the Observatory. Secondly, I also wish to highlight good lighting practices. Lastly, I'd like to restate the Observatories wish that Whitehaven Coal compute the impact of their project on the night sky brightness above Siding Spring Observatory.

As you can imagine, artificial external lighting at night, whether it is from towns, businesses or mines, can potentially negatively affect operations at the Observatory and the international status of the Warrumbungle Dark Sky Park. The dark sky park has the potential to drive national and international tourism for the local region.

Good lighting means: using lights when and where they are really needed, shielding lights that are used, so that they shine light down onto the ground and not into the sky, and using warm colours rather than blue or white light.

Good lighting is a win-win situation for everyone. The Observatory is happy, because it can continue its work. The local community is happy, because it can continue to develop tourism centred on the dark sky park. Businesses and towns are happy, because less light is spilled upwards and less money is wasted.

Conversely, bad lighting threatens the long-term future of the Observatory and the status of the Warrumbungle Dark Sky Park, negatively affects the lives of humans and fauna, and costs companies and towns more money.

In my hand, I have a copy of [Dark Sky Planning Guidelines](#), which has been prepared by the NSW Department of Planning and Environment. In it, you will find examples of good lighting and bad lighting. I have a few copies with me for those of you who would like one.

Today, the main contributors to the artificial brightness of the night sky above the Siding Spring Observatory (which we'll refer to as light pollution) come from towns such as Dubbo, Gilgandra, Coonabarabran, and Gunnedah, and mining operations in the Gunnedah basin, the Central West and the Hunter Valley.

Light pollution from the current mines in the Gunnedah basin is already apparent at the Observatory. The Observatory is concerned that the Vickery Extension Project may increase the amount light pollution as seen from the Observatory if good lighting practices are not adopted.

In the Observatory's response to the EIS, we requested that Whitehaven Coal compute the impact of their project on the natural, moon-free skyglow, at 550nm, 30 degrees above the horizon in the direction of the mine from the Observatory. This request was noted in page A5 of the Preliminary Issues Report; however, there was no indication if this calculation would be made. I'd like to state that the Observatory would still like to see this calculation made.

Thank you very much for listening to me today.