Friends of Siding Spring Observatory

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To whom it may concern,
This submission has been written to draw attention to the unacceptable impacts of Santos current plan with light pollution from their upcoming 850 gaswells and flares near Siding Spring Observatory. Friends of Siding Spring Observatory realise the tremendous value that the unique optical observatory has for not just the cutting edge science of astronomy and astrophysics, but also the intrinsic value with jobs and tourism it has for Coonabarabran and the surrounding towns.

Flaring is an unnecessary part of coal seam gas development as technology already exists to capture and treat all gases, which in turn prevents uncontrolled light pollution and toxic emissions. We thereby ask the Dept of Planning remove all current flares from this projects exploration, and ban all future flares before more damage is done to the nightsky and special industry of astronomy.

Siding Spring Observatory is Australia's only unique science research facility using the largest optical telescopes for astrophysics and astronomy. First established in Coonabarabran NSW, on the Warrumbungle Ranges in the 1960's it was built here because of the dark skies in this region. While there is historic value of this site from telescopes established over 50 years ago, this observatory hosts the largest optical telescopes from national and international universities and research entities. Not only hosting the largest, this site hosts the second, third, fourth, fifth largest telescopes etc in Australia, playing a key role in science research across the Southern Hemisphere. Over 50 telescopes are listed across the site being used by over 30 universities, institutions and private businesses using cutting edge technology, with some of the most advanced telescopes being used is astrophysical research. Future plans include another 50 telescopes to be built on site within the next decade. All this is reliant on keeping the dark sky dark! If this area was to lose the dark sky, this observatory would not be replicated again in Australia, but moved elsewhere in the Southern Hemisphere.

From 2013 onwards light emissions from the Santos gasfield exploration have increased to the point that, just the Bibblewindi large exploration flare and unmanned facility alone, creates more light pollution than the entire town of nearby Coonabarabran with over 3500 people residing there. Santos have listed plans to triple the amount of pilot flares and double the amount of large flares including constructing 50 metre high flare stacks, with an average 30 metre high flame above it.

Nowhere do they even list the EPAs recommended practice to enclose flares, as has been done in NSW areas such as Gloucester. Enclosing flares is an acceptable mitigation to protect the scientific community from the unnecessary light pollution they plan to emit, but complete removal of flares altogether is the best solution. Siding Spring Observatory already has to deal with light pollution from existing mining and regional towns. Even Sydney itself, from over 400kms away can affect research from its light glow. Santos are a lot closer than this. Every bit of extra light pollution is making it more difficult to continue the leading scientific research, and while each pollute in different levels, most consider they aren't doing any

damage. But it's the combination with the existing light sources, adding a cumulative effect which is becoming worse as more pollution is created. Astronomer in charge Fred Watson for the Anglo Australian telescope calls this 'death by 1000 cuts".

Also, listed in the EIS, Santos only recognise 1 telescope here at Siding Spring Observatory. They have also only listed as interacting with this telescope business. In a proper consultation, all the associated businesses, including the national and international science communities should have been consulted about the impacts of light pollution from gasfield flares. This should also include the Coonabarabran businesses that rely on tourism money for work, as Coonabarabran's two main streams of income are agriculture and tourism. As such in this failure, the EIS should be rejected and the consultation process started again with all stakeholders.

In summary, this is a simple fix in this case, as while Santos building infrastructure is willing to comply with shielded lights for buildings, they need to go a step further and remove all current and future flares. It is the only acceptable solution before any consideration of the Narrabri Gas Project can be approved. For this reason we object to this proposal.

For your consideration,

Peter Small

Friends of Siding Spring Observatory