



UPPER HUNTER AIR QUALITY ADVISORY COMMITTEE (UHAQAC)

MEETING MINUTES – Meeting 23

Date: 23 February 2017

Time: 10:00am – 1:00 pm

File: EF13/5718, DOC17/304021

Meeting Location: Auditorium Meeting Room, Civic Centre, 8-10 Queen St, Singleton, NSW 2330

In attendance: John Tate (Chair), Mayor Wayne Bedggood, Dr Craig Dalton, Ben Harrison, Lindy Hyam, John Krey, Cr Danny Thompson, Mark Scandrett, Geoffrey Sharrock, Andrew Speechly, John Watson

Singleton Council: Melinda Hale

Office of Environment and Heritage (OEH): Matt Riley, Scott Thompson, Ningbo Jiang

Environment Protection Authority (EPA): Roger Bluett, Clair Cameron, Emma Coombs, Leanne Graham.

Apologies: Dr Catherine Chicken, Morgana Gidley-Baird, Lyn MacBain, Mitchell Bennett (EPA), Adam Gilligan (EPA)

Acknowledgement of Country

Agenda Item:

1. Welcome and Introductions

Mr Tate welcomed attendees.

Apologies

See above.

2. Air Quality Report and Seasonal Analysis Spring 2016

Mr Riley summarised the Upper Hunter's air quality monitoring results for 2016 and presented a seasonal analysis for spring 2016.

Mr Riley advised that the Upper Hunter Air Quality Monitoring Network exceeded the sulfur dioxide (SO₂) 1-hour national standard, on 23 December 2016. This represented the first SO₂ exceedence since the Network was established in 2012. At 8:00 am on 23 December 2016, the Muswellbrook air quality monitoring station recorded a 1-hour average level of SO₂ at 21 parts per hundred million (pphm), briefly exceeding the 1-hour national standard of 20 pphm.

Mr Riley explained factors contributing to high levels of SO₂ could include stable atmospheric conditions and atmospheric temperature inversions. These conditions acted as a roof, trapping gaseous emissions from power stations close to ground level. During normal conditions, the high velocity of emissions from the tall stacks assisted the dispersion of gases high above the stack.

Mr Riley advised that the OEH was investigating factors potentially influencing the SO₂ event and would report in the next Upper Hunter air quality newsletter for summer 2016-2017.

Mr Riley advised that the OEH published the report, *Towards Cleaner Air, NSW Air Quality Statement 2016*, on its website in January 2017. The report included detailed air quality results for the Upper Hunter and noted the SO₂ event of 23 December 2016.

During 2016, daily levels of PM₁₀ (airborne particles less than or equal to 10 micrometres (µm) in diameter) met the national standard at the Upper Hunter's larger population centres of Muswellbrook and Aberdeen. Singleton recorded one day above the PM₁₀ national standard on 6 April 2016.

Daily levels of PM_{2.5} (particles less than or equal to 2.5 µm in diameter) met the national standard, except on three days. Singleton recorded two days above standard in May 2016. Muswellbrook recorded one day above the standard on 4 July 2016, coinciding with a nearby factory fire.

Large hazard reduction burns and elevated particle levels across the Upper Hunter occurred in during April, May and November 2016. The OEH will publish the more detailed Annual Report on Upper Hunter air quality later in 2017.

Mr Riley presented the Upper Hunter draft seasonal air quality newsletter for spring 2016, reporting on the results and performance of the Network. Key points included:

- Air quality was generally good from 1 September 2016 to 30 November 2016, compared with the NSW Air Quality Index. PM₁₀ and PM_{2.5} levels showed a downward trend, compared with previous spring seasons.
- Levels of nitrogen dioxide (NO₂), SO₂ and PM_{2.5} were below benchmark criteria.
- PM₁₀ levels were below the benchmark at all the larger population sites of Singleton, Muswellbrook and Aberdeen.
- At monitoring sites located closer to mining activity, PM₁₀ levels were below the daily benchmark of 50 micrograms per cubic metre (µg/m³) during spring, except for six days. On these days, daily PM₁₀ levels ranged from 53.1 to 84.1 µg/m³.
- Mount Thorley (8 and 18 November 2016) and Singleton NW (7 to 8 November 2016) recorded two days over the PM₁₀ benchmark. Camberwell recorded five days over the PM₁₀ benchmark (10 and 16 October and 5, 7 and 8 November 2016).
- Large bushfires in the Lower Hunter and Port Stephens on 7 and 8 November 2016 may have elevated particle levels in Upper Hunter.
- The Network recorded fewer days above the PM₁₀ benchmark than the previous four spring seasons. In spring 2012 and 2013, the Network recorded nearly five times the number of days above the PM₁₀ benchmark, compared to 2016.
- The Upper Hunter received average rainfall in spring 2016 and higher rainfall than the two previous spring periods. Monthly rainfall was above average in September 2016. Maximum temperatures were above average. Minimum temperatures were average, to above average. These conditions may have reduced particle levels from dust and wood smoke across the

region. Particle reduction programs may have contributed to reduced particle emissions in the Upper Hunter.

Mr Krey asked about the year to year fluctuations in PM₁₀ particle levels at Mt Thorley. Mr Riley advised that meteorological conditions exerted a major influence on annual particle levels across regions.

Mr Tate thanked Mr Riley for his presentation and commended the OEH on the NSW annual air quality statement for 2016 and the Upper Hunter seasonal analysis for spring 2016.

3. Review of the Upper Hunter Air Quality Monitoring Network

Mr Riley advised the Committee that the OEH was conducting the first five year review of the Upper Hunter Air Quality Monitoring Network. The *Protection of the Environment (General) Regulation 2009* required a report on the Network every five years. The review would report on:

- a) the effectiveness of the monitoring program in fulfilling its objectives
- b) the results of an independent audit of the efficiency and cost of the monitoring program
- c) any recommendations for improvements to the monitoring program, and
- d) any other matters considered appropriate by the EPA or the Committee.

Mr Riley advised that he would provide information for discussion at the next meeting, focusing on items (a) and (b) above.

Mr Riley explained that review by the OEH would include a correlation analysis of five years' of data recorded at the 14 air quality monitoring stations. He demonstrated how the analysis identified the similarities and differences in air quality data for each station, compared with the other 13 stations.

For example, the air quality at the Singleton station compared more closely with stations at Singleton South and Singleton Northwest, than with Muswellbrook, Muswellbrook Northwest and Aberdeen. The Committee noted the difference in air quality between stations at Camberwell and Jerrys Plains.

Mr Riley confirmed that the review also would consider changes in the extent of mining.

In response to questions from the Committee, the EPA confirmed that the annual levies on industries that funded the Network would cover the cost of the review. The EPA noted this cost in the forecast budget for the financial year 2016-2017 presented at the previous meeting in October 2016.

Mr Tate thanked Mr Riley for updating the Committee on the Network's first five year review.

Action 1. The OEH will provide information on the review of the Upper Hunter Air Quality Monitoring Network to the Committee, for discussion at the next meeting.

Action 2. The EPA will gather and collate feedback from the Committee members on the effectiveness of the Upper Hunter Air Quality Monitoring Network.

4. Dust Stop Program and Optimising Mine-Operated Air Quality Monitoring

Ms Coombs recapped the background and principles of the EPA's Dust Stop Program, which aims to minimise dust emissions from coal mines across NSW.

In 2010, the EPA commissioned Katestone Environmental to investigate international best practice dust control and the performance of NSW coal mines. The Katestone report determined that while NSW employed many best practice measures, there was scope for improvement. The report identified wheel generated dust, overburden handling and wind erosion as the main dust sources. Reducing emissions from these sources formed the basis for the EPA's Dust Stop Program.

The Dust Stop Program required coal mines to undertake a series of pollution reduction programs (PRPs) to reduce particle emissions:

- PRP1 required 80% control of wheel generated dust,
- PRP 2 required mines to modify mining activity during adverse weather conditions likely to elevate particle levels,
- PRP 3 required mines to investigate methods to reduce dust when handling overburden, and
- PRP 4 required mines to assess the area of land surface exposed to wind erosion.

Ms Coombs provided an update on PRP4, including the actions required at the mines and the EPA's assessment methods. PRP4 defined wind exposed land as the difference between the area disturbed by mining and the area stabilised with vegetation after mining. The EPA set the acceptable level of wind exposed land at each mine. This level corresponded to the area of wind exposed land estimated in the mine's Environmental Assessment. This estimate was approved by the Department of Planning before the mine commenced operation.

Ms Coombs reported the following in relation to wind exposed land at 16 mines participating in PRP4.

- Eleven mines were on target in their management of wind exposed land, with less land exposed than predicted in their Environmental Assessments,
- Five mines had more wind exposed land than predicted in their Environmental Assessments. The EPA is working with these mines to stabilise exposed areas to meet predicted levels.

The Committee discussed the varying perceptions in the community about the erodibility of exposed surfaces. The EPA considered that disturbed land that was not rehabilitated was potentially wind exposed.

Mr Tate noted that the results demonstrated most mines were doing the right thing to reduce dust from wind erosion. The Committee's mining industry representatives confirmed that mines were achieving continuous improvement in dust reduction by improved water recycling and water application to exposed areas.

Mr Tate thanked Ms Coombs for the presentation. The update on the optimisation of mine operated air quality monitoring was deferred to the next meeting.

5. Upper Hunter Dust Risk Forecasting

Mr Jiang outlined research by the EPA and OEH to improve the dust risk forecasting for the Upper Hunter.

The investigation examined meteorological conditions on days with high PM₁₀ levels across the Network. The analysis showed that conditions associated with high PM₁₀ days at monitoring stations

in the west-northwest (WNW) contrasted with the conditions associated with high PM₁₀ days at stations in the southeast (SE).

The study also calculated the difference in daily levels of PM₁₀ at Merriwa in the NW, compared to Singleton in the SE. These differences were used to identify days with high dust emissions within the valley. The analysis showed that days with a high difference in PM₁₀ levels experienced a range of daily meteorological conditions.

The study then used statistical methods to predict days likely to experience a high difference in PM₁₀ levels between the SE and NW areas of the Upper Hunter. Initial results showed that the method worked moderately well in predicting days that actually recorded elevated PM₁₀ levels at stations in the SE during northwesterly winds.

The EPA and OEHS will continue to test and refine methods for forecasting dust risk in the Upper Hunter.

The Committee acknowledged the complexity of analysing meteorological variables and their relative influence on PM₁₀ levels in the Upper Hunter.

Action 3. The EPA and OEHS will keep the Committee informed on the progress of the Upper Hunter Dust Risk Forecasting project.

Mr Tate thanked Mr Jiang for the presentation.

6. Clean Air for NSW – Briefing and Feedback Opportunity

Mr Bluett outlined the actions proposed in the Clean Air for NSW Consultation Paper. The actions aim to reduce air emissions from sources including industries, motor vehicles and locomotives, domestic woodsmoke and small engines.

Mr Bluett explained that the success of the actions would be measured by considering changes in average air quality and population exposure to pollution levels.

Actions to reduce air emissions also would reduce greenhouse gas emissions, benefiting actions for addressing climate change.

A Clean Air Summit would be held in 2017, to report to the community on the consultation process and to discuss and further define actions.

The Chair invited the Committee to share their feedback on the Consultation Paper. Comments from the Committee included the following.

- The meaning and rationale for the use of the term ‘average’ air quality needed to be explained more clearly. Quantifying average air quality in numerical terms could hold air quality policies to account.
- The final plan would be strengthened by identifying local initiatives to improve air quality and methods to assess the plan’s progress and success, and

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- The plan would be strengthened by articulating its relationship with and implications for the respective governments' planning instruments, specifically, Local Environment Plans and Development Control Plans.

Mr Tate thanked Mr Bluett for the presentation.

Action 4. Committee members will provide feedback on the Clean Air Consultation Paper to the EPA by Friday 10 March 2017.

7. Woodsmoke Reduction in Singleton and Muswellbrook

Ms Hale reported on the wood smoke reduction campaign delivered by Singleton and Muswellbrook shire councils in 2016, to raise awareness and protect communities from the impacts of particle pollution in winter.

The project team developed a plan and budget, based on the multi-pronged approach recommended by the community behaviour research project, conducted in 2015 and reported to the Committee in 2016. This approach offered a range of strategies tailored to the needs of residents in different stages in the behaviour change process:

- Myth Busters strategies addressed the need for raising community awareness,
- Call to Action strategies offered options to those open to short term behaviour change,
- Testimonial strategies aimed to engage those ready for long term attitude modification, and
- Smarter Use strategies offered options to those ready for long term behaviour change.

The project budget of \$140,500 was funded by an EPA grant of \$82,000 and an award of \$58,000 to Muswellbrook Council by the Land Environment Court.

The project plan comprised four objectives.

Objective 1 was to create an outrage crisis about wood smoke pollution, to raise awareness of the health and amenity impacts of wood smoke. Actions included:

- Advertising on television, radio, at cinemas, in print and on web sites,
- Providing information on council's website and feedback to the community via social media.

Objective 2 was to educate wood heater owners, in selecting and storing wood, lighting fires, and controlling airflows and flue cleaning, to contribute to reductions in PM_{2.5} levels. Actions included:

- Creating simple messages, distributed on fridge and car magnets and vests for employees,
- Listing wood smoke myths and facts in advertising, web site material and community events,
- Funding flue cleaning rebates.

Objective 3 was to increase wood heater replacement and alternative heating. Actions included:

- Offering applications for wood heater replacement rebates and displays at shopping centres, markets and events.
- Incorporating simple messages in advertising for rebates, "Tired of chopping wood?"

Objective 4 was to introduce a compliance program for wood heater owners, involving a complaints register, warnings and fines. Actions included:

- Creating a compliance education and regulation package,
- Undertaking a compliance program including educating, observing, warnings and fines.

The 2016 project outcomes included 23 rebates for wood heaters replaced with cleaner heaters and 82 rebates for flue cleaning, compared with two heater replacements in 2013 and none in 2014.

The Upper Hunter Air Quality Monitoring Network seasonal newsletter for winter 2016 reported that daily average PM_{2.5} levels at Singleton and Muswellbrook generally were lower in winter 2016 compared to previous years. Winter 2016 recorded the lowest minima for 24-hour average PM_{2.5} levels at Singleton and Muswellbrook, since the monitoring sites were established in 2011.

Ms Hale noted that factors potentially contributing to lower PM_{2.5} levels in 2016, in addition to the wood smoke reduction campaign, included above average winter rainfall and above average minimum temperatures.

Ms Hale advised that planning for the wood smoke reduction campaigns in Muswellbrook and Singleton for 2017 incorporated recommendations from the 2016 campaign. For example:

- Commencing the program earlier would encourage wood heater replacements before winter.
- Developing case studies on residents who replaced wood heaters would document and share the individual motivations and experiences with other community members.

The Committee commended Ms Hale and her team on the scope and success of the campaign.

Mr Tate thanked Ms Hale for the presentation.

8. Minutes of Previous Meeting, No. 22 of 26 October 2016 and Actions Arising

The Committee adopted the minutes as a true and accurate record.

The EPA provided the following advice in response to actions from the previous meeting.

- The EPA circulated to the Committee, the correspondence from AGL to the EPA of October 2016, explaining year to year variations in NPI emission estimates for Bayswater power station.
- The EPA would discuss with the Committee, at the next meeting, the forecast budget for the operation of the Upper Hunter Air Quality Monitoring Network for financial year 2016-2017.
- The EPA reported to the Committee, on research to improve the forecasting of high dust events in the Upper Hunter (refer to Item 6).
- The OEHL briefed the Committee, on the five year review of the Upper Hunter Air Quality Monitoring Network (refer to Item 4).
- The EPA followed up media releases about the Upper Hunter air quality report for winter 2016, with calls to Hunter newspapers in November 2016. The EPA will continue this practice.
- The EPA is progressing ideas for infographics to provide key messages to Upper Hunter communities about the sources of particles and dust.

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- The EPA is gathering information to report to the Committee on the area of mining land exposed to wind erosion compared to agricultural land in the Upper Hunter.
 - The OEH incorporated additional graphs into the Upper Hunter season air quality newsletters, to show long term trends in levels of particulate matter.
 - The EPA will contact Hunter media outlets to discuss opportunities for interviews with the Chair after each Committee meeting.

9. Community Feedback

Mr Tate invited Committee members to share feedback from their contact networks.

Mr Watson outlined the scope of community engagement by the Upper Hunter Mining Dialogue.

- The Dialogue facilitated working groups to change industry practices and better manage environmental and social impacts of mining,
- The Emissions and Health Joint Working Group met twice each year. Projects included improvements to forecasting of weather conditions that contributed to dust emissions.
- Annual forums included presentations by the EPA, OEH and Dr Dalton.
- A research study investigated local housing issues and the social impacts, and
- A land management group investigated the potential for grazing on rehabilitated land.

Mr Speechly confirmed that the Dialogue facilitated continuous improvement in the environmental performance by mines, beyond meeting regulatory compliance.

Mr Tate commended the scope of community engagement by the Upper Hunter mining industry.

Ms Cameron advised that the EPA was reviewing the results of the EPA Stakeholder Survey 2016 by IPSOS. Results showed that 59% of stakeholders agreed that the EPA was good at managing air quality. This result was an increase from 46% in the survey in 2013. Ms Cameron would report to the Committee in more detail at a future meeting.

Action 5. The EPA will update the Committee on the EPA Stakeholder Survey 2016.

10. General Business

The Committee raised no items of general business.

Mr Tate deferred to the next meeting the update on the optimisation of air monitoring at mines.

Meeting closed at 1.15 pm.

Next meeting date: Thursday 25 May 2017.

Minutes for review by: John Tate (Chair)