

---

## UPPER HUNTER AIR QUALITY ADVISORY COMMITTEE (UHAQAC)

### MEETING MINUTES – Meeting 22

**Date:** 27 October 2016

**Time:** 10:00am – 1:00 pm

**File:** EF13/5718, DOC17/269294-01

**Meeting Location:** Bayswater Power Station, New England Highway, Muswellbrook, NSW 2333

**In attendance:** John Tate (Chairperson), Mayor Wayne Bedggood, Morgana Gidley-Baird, Ben Harrison, Lindy Hyam, John Krey, Lyn MacBain, Cr Danny Thompson, Mark Scandrett, Geoffrey Sharrock, Andrew Speechly, Dr Kathryn Taylor, John Watson

AGL Macquarie: Rob Cooper, Shaun Green, Amer Hussein, Barry Millar, Matthew Parkinson

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

Environment Protection Authority (EPA): Mitchell Bennett, Adam Gilligan, Leanne Graham.

**Apologies:** Dr Catherine Chicken, Dr Craig Dalton.

### Agenda Item:

#### Acknowledgement of Country

##### 1. Welcome and Introductions

Mr Tate welcomed attendees and guests from AGL Macquarie. Mr Tate thanked Mr Green, AGL Macquarie Acting General Manager and Head of Business Improvement, and Ms Gidley-Baird and her team for hosting the Committee's visit to Bayswater Power Station. Mr Tate introduced Dr Kathryn Taylor, deputy for Dr Craig Dalton, and Cr Danny Thompson, new Committee member representing Singleton Shire Council.

##### 2. Apologies

See above.

##### 3. Overview of proceedings

Mr Tate advised that AGL Macquarie representatives would address the Committee before the site tour of the power station, and then the committee meeting would proceed.

##### 4. Welcome to Bayswater Power Station, History and Overview

Mr Green outlined the history of AGL Macquarie's coal fired power generation activities at Bayswater and Liddell power stations. Key points included the following.

- In 2014, AGL acquired Macquarie Generation's Bayswater and Liddell power stations from the NSW Government's Macquarie Generation. AGL Macquarie employs about 600 workers.
- In 2015, AGL released a greenhouse gas policy for the decarbonisation of its power generation by 2050. AGL plans to close Liddell in 2022 and Bayswater in 2035.

- In 2015/16, AGL Macquarie provided 35% of energy demand in NSW and 12% of the national energy market.
- Bayswater, commissioned in 1985-86, generates 2,640 MW and consumes 7.9 mega tonnes per annum (Mtpa) of coal, supplied mostly from Mangoola mine. Liddell, commissioned in 1971-73, generates 2,000 MW and consume 3.8 Mtpa of coal.
- At both sites, crushed coal combusts in a furnace, to boil water, releasing steam, which drives a turbine, to produce electricity. Spent steam is cooled in a condenser and piped back to the boiler. At Bayswater, the condenser is cooled by water piped to four curved cooling towers. At Liddell, water is cooled in the purpose-built Lake Liddell. The Hunter River supplies any additional water for both sites.
- The main sources of air emissions at Bayswater are particulate matter and gases of nitrogen oxides and sulfur dioxide, released during coal combustion. Other potential sources are dust particles from coal stockpiles and ash disposal areas.
- The combustion of coal creates ash in the furnace. The ash from coal combustion at Bayswater is about 30% of the coal consumed.
- Fine ash particles in exhaust gases from the furnace are captured by fabric filters, before the gases are emitted via two chimney stacks. Bayswater's fabric filter system uses 48,000 fabric filter bags per generator unit. This provides 120 hectares of fabric surface to filter fine ash particles from furnace gases. Yellow and brown bands on the top of the stacks are caused by long-term emissions of gases, such as sulfur dioxide and nitrogen oxides.
- Most ash from the furnace is removed to a dedicated ash disposal areas, which are filled progressively and capped with earth and grasses to suppress dust. Some ash is sold for use in road building or cement manufacture. AGL Macquarie also discharges ash into a mining void at Ravensworth.
- Coal stockpiles, of approximately two million tonnes, are watered to suppress dust.

In response to questions about the closure of the power stations, Mr Hussein explained that AGL Macquarie was engaging with regional stakeholders to consider the socially responsible options for future use of the site, its infrastructure and human resources.

Mr Tate thanked Mr Green for the comprehensive presentation.

## **5. Site Tour**

The AGL Macquarie staff accompanied the Committee on a tour of the power station.

## 6. Shared observations from the site tour

The Chair and committee members noted the impressive technology that delivers electricity to consumers.

Mr Bennett asked AGL Macquarie to outline measures to reduce air emissions from the plant.

Mr Green advised that Bayswater's environment protection licence limits air emissions of particulate matter, oxides of nitrogen and sulfur dioxide. AGL Macquarie has improved power generating efficiency of Bayswater and Liddell, since acquiring the plants, thereby reducing emissions per unit of energy produced. Research by CSIRO assisted in improving the dispersion of plumes emitted from the stacks.

Bag filter systems on stacks minimise emissions of particulate matter. Fugitive dust is reduced by water spraying coal stockpiles and maintaining a water layer on top of the ash disposal area. Ash is kept wet to reduce dust during handling. Low NO<sub>x</sub> burners reduce the production of oxides of nitrogen by optimising the ratio of fuel and air in the furnace. Sulfur dioxide emissions are managed by controlling coal sulfur content and by managing the flow of oxygen to the furnace. Spraying and battering of coal stockpiles reduces the risk of sulfur dioxide emissions from spontaneous combustion in the stockpile.

In response to questions from the Committee, Mr Green advised that operations were modified according to weather forecasts. In advance of wet weather, coal was stored in dry areas. In windy weather, movements of coal and ash are limited and watercarts operate more intensely. Dust levels are monitored continuously in real time.

Mr Sharrock noted that the Upper Hunter had few exceedences of air quality criteria in 2016. He also noted that the Newcastle Herald, on 28 September 2016, reported increased air emissions at Bayswater, since AGL purchased the plant, according to the National Pollution Inventory (NPI). Mr Sharrock asked how the Committee might explain the article to the community.

Mr Green advised that, in 2014, AGL Macquarie identified opportunities to improve the accuracy of NPI reporting. AGL Macquarie also increased Bayswater's power generation by 10% from 2013/14 to 2014/15. This resulted in higher pollutant loads being reported to the NPI by AGL Macquarie for 2013/14 and 2014/15, compared to levels reported by Macquarie Generation for 2012/13. In October 2016, AGL responded to a request from the EPA, to explain Bayswater's year to year variations in NPI emissions. AGL Macquarie agreed to share with the Committee AGL's response to the EPA.

**Action 1. The EPA to circulate to the Committee, correspondence from AGL to the EPA in October 2016, explaining year to year variations in NPI emission estimates for Bayswater power station.**

Mr Tate thanked Mr Green, Ms Gidley-Baird and the team at AGL Macquarie for hosting the site tour and committee meeting.

Mr Tate apologised and advised that he would leave the meeting. He thanked the Committee members, the EPA and the OEH for their participation and praised their contributions to the work of the Committee during 2016.

With agreement from the committee, Mr Bedggood chaired the meeting for the remaining agenda items.

## **7. Minutes of Previous Meeting, No. 21 of 28 July 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 Upper Hunter air quality newsletter for winter 2016 included options for graphs to show long term trends in PM<sub>10</sub> and PM<sub>2.5</sub>. Mr Riley intended to discuss the options, in Item 8.
- The EPA provided an update on actions to reduce emissions from diesel locomotives. Electro-Motive Diesel Inc (EMD) conducted a second round of testing on two EMD locomotives and Pacific National tested the emissions of two General Electric (GE) locomotives, against the United States Tier 0+ standards. The EMD and GE locomotives represent about 90% of all locomotives operated in NSW. The EPA expects to publish reports on the tests later in 2016.
- The EPA emailed to the Committee, on 17 October 2016, the link to Dr Dalton's video 'Health impacts of air pollution – a Hunter perspective', for distribution to members' contact networks.
- The EPA is investigating the production of a video animation about air quality in the Hunter. The video will include health messages for the community. The Committee will be kept informed. The EPA suggested that the Committee revisits the issue of better messaging, in 2017.

## **8. Air Quality Report and Seasonal Analysis Winter 2016**

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

- Air quality was generally good in the Upper Hunter, from 1 June 2016 to 31 August 2016.
- Levels of nitrogen dioxide and sulfur dioxide and PM<sub>10</sub> (particles less than or equal to 10 micrometres (µm) in diameter) were below benchmark criteria.
- Levels of PM<sub>2.5</sub> (particles less than or equal to 2.5 µm) were below the daily benchmark of 25 micrograms per cubic metre (µg/m<sup>3</sup>), except on one day, 4 July 2016, with 29.4 µg/m<sup>3</sup> at Muswellbrook, in association with a nearby factory fire.
- The Upper Hunter received above average rainfall in winter 2016, with higher rainfall levels than the previous three winter periods. Maximum temperatures were above average and minimum temperatures very much above average. These conditions may have reduced particle levels from dust and wood smoke across the region. The EPA's Dust Stop program may have reduced particle levels emitted from coal mines.

- Compared with previous winter seasons, PM<sub>10</sub> and PM<sub>2.5</sub> levels showed a downward trend.

Mr Riley explained the options for additional graphs to show the long term trends in levels of particulate matter. The committee members unanimously supported incorporating both options into future newsletters. The options met the needs of readers interested in instant messages as well as those who read for more detail.

**Recommendation 1. That the OEH incorporates additional graphs into the Upper Hunter season air quality newsletters, to show long term trends in levels of particulate matter.**

Mr Bedggood commended the OEH on the draft Upper Hunter air quality newsletter for winter 2016 and thanked Mr Riley for his presentation.

## **9. Overview of the Operational Budget for the Upper Hunter Air Quality Monitoring Network**

Mr Gilligan reported on the budget for the industry-funded Upper Hunter Air Quality Monitoring Network (UHAQMN). The presentation included the following key messages.

- The government's total cost of operating the UHAQMN is the sum of the costs of running and maintaining the monitoring instruments and their infrastructure and the salary costs of the technical and administrative officers.
- The Upper Hunter coal mines and power generation industries fund the operation of the network. Levies are paid in proportion to emissions and the amount of material moved by mines. The Protection of the Environment Operations (General) Regulation 2009 specifies the methods for calculating annual levies.
- The UHAQMN Income and Expenditure Statement for 2015/16 compared the forecast budget of \$689,710 to the actual expenditure of \$700,646.
- The UHAQMN forecast budget for 2016/17 was presented for the Committee's consideration and comment. Capital expenses included the replacement of three PM<sub>2.5</sub> monitors, the oldest instruments in the network. This commenced the capital replacement program for the network. Expenditure items included the five year review, including an independent audit of the cost-effectiveness of the UHAQMN.

The Committee supported the UHAQMN forecast budget for 2016/17 and the timeline for discussing the budget with the committee.

The Chair thanked Mr Gilligan for the presentation.

**Action 2. The EPA will discuss with the Committee the cost estimates and actual expenditure for the operation of the Upper Hunter Air Quality Monitoring Network, in line with the budget cycle for each financial year.**

## **10. Dust Stop Program and Optimising Mine-Operated Air Quality Monitoring**

Mr Bennett advised that the EPA and OEHL continued to investigate ways to improve the dust risk forecasting in the Upper Hunter, by investigating combinations of weather conditions associated with high dust emissions from mines. An update will be provided in February 2017.

**Action 3. The EPA will report to the Committee, in February 2017, about the research to improve the forecasting of high dust risk in the Upper Hunter.**

Mr Bennett advised that the EPA and Mt Arthur mine were negotiating a pollution reduction program to minimise the surface area of land exposed to wind erosion, as part of the Dust Stop Program.

Mr Bennett reminded the Committee of the EPA's plans to optimise mine site air quality monitoring. The EPA is working with mines to vary their environment protection licences and replace older dust monitors with continuous monitoring of PM<sub>10</sub>, aligned with the dominant wind direction. This will allow measurement of the mine's individual contributions to PM<sub>10</sub> levels. The difference in PM<sub>10</sub> levels, upwind and downwind of the mine site and the comparison between sites, will assist the EPA's regulation of dust from mining activity across the Upper Hunter. The EPA has finalised the new licence variations with eight mines, most recently with the Liddell mine.

Mr Bedgood thanked Mr Bennett for the update.

## **11. Community Feedback**

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

Ms MacBain reported ongoing requests from the community to explain why Broke was not included in the UHAQMN. Mr Bennett reminded the committee that discussions during the establishment of the UHAQMN had identified Broke and Denman as candidates for monitoring in future, depending on the direction of expanding mining activity. Mr Riley advised that an update on the five year review of the UHAQMN would be presented to the Committee in February 2017.

**Action 4. The OEHL will present to the Committee, in February 2017, an update on the five year review of the Upper Hunter Air Quality Monitoring Network.**

In response to questions, the EPA advised the Committee to encourage community members to report to the EPA's Environment Line, on 131 555, about the impacts of blast fumes and to contact the individual mines as well. The EPA expects mines to consider weather conditions before blasting.

Mr Sharrock reported that Glencore held an evening barbeque for the communities of Broke and Bulga, on 26 October 2016. Ms MacBain reported that it was hard for some community members to talk to the mines. Mr Bedgood emphasised the importance of mines promoting community events as opportunities for people to ask questions.

Ms Hyam noted that the local newspapers did not report on the air quality media release after the last meeting. Mr Gilligan confirmed that the media release was sent to all media outlets in the Upper Hunter and it was the radio stations that responded.

**Action 5. The EPA to follow up media releases about Upper Hunter air quality, with calls to Hunter newspapers about reporting and advertorial content.**

Mr Scandrett sought advice on how to get messages to the community about the need to reduce PM<sub>2.5</sub> emissions and about the likely sources of deposited dust in the Upper Hunter. Mr Gilligan noted that the EPA published infographics to educate the community about the sources of particles and dust in the Lower Hunter. He agreed to investigate using infographics for sending key messages to Upper Hunter communities.

**Action 6. The EPA to consider the use of infographics to provide key messages to Upper Hunter communities about the sources of particles and dust.**

The Committee members recommended that the EPA followed up Committee meetings with calls to Upper Hunter media outlets to discuss opportunities for interviews with the Chair.

**Recommendation 2. That the EPA contacts Hunter media outlets to discuss opportunities for interviews with the Chair after each Committee meeting.**

Mr Bedggood reported fewer complaints about dust from coal trains.

Mr Speechly asked the EPA about feedback from Lower Hunter communities on air quality. Mr Gilligan advised that community members in the Lower Hunter continued to report concern about sources of fugitive coal in the rail corridor. He advised that the EPA would consider the Chief Scientist's recommendations for further studies to minimise dust emissions in the vicinity of the rail corridor.

Mr Bedggood thanked the Committee, the EPA and OEHL for their contributions.

**12. General Business and Concluding Remarks and UHAQAC 2016-2017**

In response to questions, the EPA provided an update on actions to reduce diesel emission from non-road diesel engines in the Upper Hunter, following from the EPA workshop in June 2016.

- The EPA is continuing to listening to concerns from industry about a draft Pollution Reduction Program (PRP) requiring industries to reduce diesel from non-road diesel engines.
- The EPA is revising the draft PRP that was presented at the workshop in Muswellbrook in June 2016. The revision aims to address some of the issues raised by industry representatives.
- The EPA hopes that the revised PRP will be released for formal stakeholder consultation and feedback by the end of November 2016.
- A revised PRP to could be issued to all coal mine licensees in the second quarter of 2017.

Cr Thompson reported that few community concerns about the environment were raised with him, as a candidate in the recent local government election.

Ms MacBain asked how the surface area of mining land exposed to wind erosion compared to cultivated agricultural land. The EPA agreed to investigate.

**Action 7. The EPA will report to the Committee on the area of mining land exposed to wind erosion compared to agricultural land in the Upper Hunter.**

Mr Bedggood thanked the Committee, the OEH and the EPA for their participation and contributions to the good work of the Committee during 2016.

Meeting closed at 1.40 pm.

**Next meeting date:** Thursday 23 February 2017, to be confirmed.

Minutes for review by: John Tate (Chair) and Wayne Bedggood (Acting Chair).