



Project:	Coopers Gap Wind Farm
Meeting No:	19
Date:	Thursday, 25 August 2016
Venue and Time:	Cooranga North Memorial Hall, Cooranga North
Document:	Meeting minutes and actions
Chair:	Kath Elliott (KE) Independent Chair
Minutes:	Liz Todd (independent consultant)
AGL representatives:	Helena Orel (HO), Community Stakeholder Engagement Manager Neil Cooke (NC), Project Manager, Power Development Stuart Galway (SG), Land & Approvals Manager
Committee Members:	Neville and Jade Wenham Tony Brame Tom Hoare Cyril Stewart Mick Cosgrove Bill Sparkes Russell Glode Jim Scutt
Guests	Peter O'May, General Manager Corporate Services, South Burnett Regional Council Rhys Brown (RB), AECOM
Apologies	Greg Taffe Ian and Judy Schafferius Chris Du Plessis, South Burnett Regional Council Kelly Taffe Grant Newson
Community observers in attendance:	Approximately 45

Meeting Minutes

Item	Action
<p>1. Welcome</p> <p>Meeting opened at 1:08pm</p> <p>Kath Elliott (KE) welcomed the CCC members, guests and observers.</p> <p>Apologies were noted.</p> <p>Kath provided an overview of the meeting agenda.</p> <p><i>The minutes from the 30 June 2016 meeting were reviewed and adopted unanimously.</i></p> <p>HO outlined the actions from the previous meeting.</p> <p>KE noted that Ian Schafferius had tendered his resignation to the CCC. The position was declared as vacant on the Committee and nominations were called.</p> <p><i>Mick Cosgrove nominated Russell Glode, seconded Tom Hoare, Carried.</i></p> <p>KE welcomed Russell to the committee, noting his long standing attendance at the CCC meetings.</p>	<p>Actions end of document</p> <p>Note new CCC member</p>
<p>2. Community group visit to AGL Victorian wind farms</p> <p>Helena Orel, Community Stakeholder Engagement Manager provided an overview of the visit as follows:</p> <p>Oaklands Hill and Macarthur Wind Farms were visited 1-4 August 2016.</p> <p>The trip provided an opportunity to learn about wind farms and see them operating first hand. It also enabled AGL to thank the community for participating in the Coopers Gap project for so many years.</p> <p>Helena presented an outline of the trip, including photos for the benefit of those who didn't participate in the trip.</p> <p>Comment. Someone who felt affected by wind turbines contacted Jim Scutt following the visit, noting that wind speed was low on the days when the group visited Victoria and the noise was subsequently low.</p> <p>(HO) Noted that the wind speed was pretty typical of the area was pretty active during the visit, consequently the turbines were quite active too. HO clarified that AGL does not 'turn down' the turbines when visitors are on the wind farms and this can be cross checked against the wind farm's operating reports. It was also discussed that that Victorian community members including those who don't like wind farms were invited to meet with the group and the group got to meet those people. Others in the community who felt impacted by wind farms made their own arrangements to meet with members of the group during the visit.</p> <p>Comment. A turbine host at Oaklands Hill Wind Farm said there had been some initial problems with erosion on the access tracks.</p> <p>(HO) On some of the access tracks at Oaklands Hill Wind Farm, one of the properties had erosion occurring which has now been rectified. Large machinery is required to use the access tracks on properties during the construction phase and the roads are built to take the heavy loads. The road embankments that had eroded were reseeded to stabilize the embankments, however unfortunately the new shoots were grazed by stock. This has now been rectified.</p> <p>Comment. Obviously on hilly areas erosion is an issue.</p> <p>Comment. What is the difference in noise between the sizes of the turbines?</p>	

<p>Q1. The noise from Oaklands Hill far exceeded that from Macarthur, why was this?</p> <p>A2. (Rhys Brown) There are only a couple of dB in difference between the turbine sizes. In the mid range, 4-6m/sec wind speed is when we hear them the best, i.e. when the wind speed is lower they are more audible.</p> <p>Comment. The wind speed did not seem a lot between the farms, but the noise was considerably higher. The explanation therefore doesn't wash.</p> <p>(KE) Rhys will address some of the noise issues in his presentation.</p>	
<p>3. Project Status Update</p> <p>Neil Cooke, AGL Project Manager</p> <p>The project was declared a Coordinated Project on 7 June. The Terms of Reference (TOR) submissions closed on 11 July. Comments were provided to the Coordinator General.</p> <p>The Environmental Impact Statement (EIS) is going to be handed over to the Office of the Coordinator General (OCG) tomorrow.</p> <p>The EIS has been prepared to be consistent with the TOR. It is expected to go on exhibition mid September for six weeks to the end of October. During November the submissions will be addressed.</p> <p>Electrical connection of 275 kV was confirmed and an application submitted.</p> <p>Tender documents were uploaded to the tender website for five selected tenderers to use from Tuesday 23 August. The project is out for tender and shortlisting is expected to be done by mid January. Capability statements were received by a number of local businesses. The tenderers have to provide a local industry participation plan with their tenders. AGL is looking for the tenderers to work hard to include local businesses in the project.</p> <p>Q2. How is the project financed?</p> <p>A2. (NC) AGL has a 20% proportion of the Powering Australian Renewables Fund (PARF). The Queensland Investment Corporation are partners. It is expected that Coopers Gap Wind Farm would be funded by the PARF should it meet all the requirements. Silvertown Wind Farm is the next development to be constructed, then Coopers Gap Wind Farm.(NC) The EIS includes a range of things including noise, traffic, flora and fauna.</p> <p>(HO) The EIS is expected to be on public exhibition from mid September. From mid September the EIS document will be at all local libraries in the Western Downs and South Burnett council areas, and advertised in local papers. Hard copies can be obtained from the Office of the Coordinator General. The document is around 300 pages. AGL can put on a copy on usb stick or print for those who don't have easy access to a computer or internet.</p> <p>AGL will host information sessions about the EIS document and have photos on display, along with further details of the project. AGL is looking to hold an information session at the Cooranga North Memorial Hall and the Bell Community Centre.</p> <p>A letter box drop will go out to relevant postcodes two weeks into the exhibition process, aiming to cover as many local residents as possible.</p>	<p>Action: HO send link to EIS, distribute to those request a copy.</p>
<p>4. Business and Industry information sessions</p> <p>Stuart Galway, AGL Senior Land & Approvals Manager</p> <p>The project has gone out to tender to selected tenderers on Tuesday 23rd August. AGL is working in conjunction with Western Downs and South Burnett Regional Councils to give updates and opportunities through the tender process for local businesses to give them the best chance for involvement in the project.</p>	

<p>Stuart presented at a recent information session about the required civil and electrical works. Turbine tower construction is a specialist trade and may not be able to be supplied from the local area. TSBE, a non-profit organisation in the Surat Basin, presented at the industry briefings on how contracting strategies work and what businesses should do now to win tenders with the main construction contractors</p> <p>AGL are asking businesses to put together capability statements which can be included in tender packages. Even though the tender documents have gone out, businesses are still encouraged to submit capability statements and these will be included as addenda. Industry briefings will be on a periodic basis going forward. South Burnett Council has a dedicated staff member available to help businesses to prepare capability statements.</p> <p>Q3. When is the next information session?</p> <p>A3. (SG) There is one coming up in a few weeks. Anyone interested is asked to add their name on the distribution list to be notified of upcoming meetings. Please let others from the business community know about the meetings and tender process.</p>	<p>Action: (HO) Distribute the name of the South Burnett Council contact who can assist with capability statements.</p>
<p>5. Wind farms and noise</p> <p>Rhys Brown, AECOM</p> <p>(KE) Rhys has been involved with this project for six years and attended seven past meetings.</p> <p>Facade noise attenuation assessment.</p> <p>Facade noise attenuation testing was conducted in July. The results have been provided to the individual landholders where the tests were conducted. Thank you to those participated, as it can be quite an intrusive process to carry out the tests.</p> <p>Tests were conducted at five locations around the wind farm site selected by the community for AGL; a range of housing building materials were selected for testing.</p> <p>Legislation requires that noise be measured and assessed outside a dwelling. The relevant Code is available on the internet. AGL has met the requirements of testing outside the dwelling, but also conducted assessments inside houses at the request of the community. Undertaking testing of the reduction of a facade does not imply that the project will be required to comply with any guidelines or objectives e.g. EPP(Noise).</p> <p>Tests were conducted in a range of rooms and living areas, including scenarios with windows fully open, 10cm open and closed. Photos of tests were shown. Sound measurements were taken inside and outside the room. The speaker generated noise of approximately 105 dB(A). At around a distance of 3m from the speakers. 105 dB(A) was quite loud.</p> <p>Australian and international standards were followed for the testing.</p> <p>The results were presented from the three scenarios. The reduction across the facade was higher with windows closed. For the different houses and living rooms, the reduction measured across the full frequency range was used in conjunction with the estimated wind farm noise to give an overall estimated wind farm noise reduction. For fully open windows the reduction averaged 10 dB(A) with the worst reduction 8 dB(A) and the best reduction 13 dB(A).</p> <p>Across the range of house construction types, for an open window there was no clear correlation with the reduction across a facade and the construction type. This is consistent with previous studies and expected as the open window area controls the reduction.</p> <p>Q4. Obviously you have used mathematical equations to work out the wind farm noise and background noise?</p>	

A4. (RB) What we see on the meter is overall sound level, the graph shows the reduction of a specific frequency. A forecast wind noise is based on modelling and this is combined with the frequency based reduction to estimate the façade reduction. The test tone used is called "pink noise" and is not similar to the sound of a wind farm.

Q5. (KE) For the numbers you had on the different houses, what does that mean for those people? Is the reduction significant?

A5. (RB) The reduction is consistent with those of other projects. There were no surprises with these results.

(RB) The noise inside the properties tested with windows closed ranged from 25 to 41 dB(A). The noise inside the properties tested with windows open ranged from 26 to 41 dB(A). The lowest was 25 dB(A) which is usually from fridges, clocks, generators, human activities etc.

Q6. Is there a difference between noise for day and night?

Q7. Why is the night time noise a problem?

A6&7. (RB) The noise characteristic is dependent on the wind speed. As it is quieter at night, audibility is increased during night time periods. The allowable limit in the Queensland Wind Farm Code for the wind farm is 37 dB(A) or background plus 5 dB(A) during the day, and 35 dB(A) or background plus 5 dB(A) during the night. The wind farm is currently designed for 35 dB(A) at all times, or background + 5 dB(A).

Comment. Locally it is a lot windier at night. When we shut the windows at night, we hear more noise than with them open. When the wind blows harder the internal ambient noise is higher. The turbine noise will flatten out at 10m/sec but the ambient noise will keep going up.

(RB) For compliance, testing is done continuously (day and night) for a four week period and compared to requirements.

Q8. If it doesn't meet compliance levels, what happens?

A8. (HO) The turbines are shut down until the issue is rectified.

Q9. What is the required level?

A9. (RB) The Environmental Protection Policy (Noise) 2008 acoustic quality objective for noise levels is 30 dB(a) daily average inside a dwelling. It doesn't specify with windows open. The government sets criteria for different noise activities such as aircraft, traffic etc. The code is set for wind farms, which for Queensland is set at 35 dB(A), or 5 dB(A) above background outside a dwelling, which are the operating conditions for any wind farm moving forward.

Noise and vibration impact assessment

There is an update on EIS requirements for noise and vibration. The number one change for all previous assessments is that Queensland now has its own legislative code for wind farms, including for noise. It includes performance objectives for operation noise and construction noise (specifically PO 11, PO 12, and PO 13).

For participating landholders who have a deed of release, the criteria are 45 dB(A) or 5 dB(A) above background level whichever is greater.

For non-participating landholders, the criteria are 35 dB(A) or 5 dB(A) above background level.

Background noise assessments were conducted in 2011-2012. So the baseline is currently being redone because the requirements in the Queensland State Code are different to the previous method that baseline was taken by. There are some delays, as baselines need to be compared against hub height wind speed – wind speed monitoring is done by a different company which had technical issues with monitors. Rotation

Action: (HO)
Check why house D & E stated 'not measured'.

around project site has been conducted and just waiting for data. Apologies for that delay.

Further monitoring is being undertaken. The Queensland code has an associated guideline with requirement for baseline monitoring as set by the government. The results won't be in the EIS that comes out, as they won't be available in time.

A map from the EIS was shown, which identifies the current turbine layout and forecast extent of noise levels. The 35 dB(A) is the outer most green layer.

Jim Scutt noted the purple dots, which were identified as meteorological mast locations.

The requirement within the Queensland wind farm code, where there is no deed of release, states that the turbines can't be within 1500m of the house of that property. AGL needs to comply with both 35 dB(A) or background plus 5 dB(A), and the 1500m distance codes for non-financial neighbours. Turbines may need to be more than 1500m to meet the noise requirements of 35dB(A), but can't go less than 1500m.

6. Wind turbine shadow flicker

Presented by Rhys Brown, AECOM

There is a chapter in the EIS that relates to shadow flicker A sub-consultant was engaged by AECOM to conduct these assessments.

Shadow flicker is where the rotating blades of wind turbines cast flickering shadows, depending on the position of the turbine, sun and receptor.

When the sun is low in the sky, the length of the shadows cast by the turbine is increased.

Shadow flicker is a requirement to consider based on nuisance, it is not a health requirement. Epileptic seizures can be triggered by light flashes in the range of 5-30 Hz. Flickering created by turbines is in the range of 0.6 – 1 Hz.

(HO) AGL has only received one complaint regarding flicker, which was from someone residing outside the farm perimeter.

At this time additional questions were asked relating to the previous noise presentation.

(RB) Queensland has noise levels set for each industry. 45 dB(A) or background + 5dBA was deemed acceptable by the Queensland State Government for people who are financially compensated for having the turbines.

The noise limit for state controlled roads is 60 dB(A) and up to 68 dB(A) depending on the circumstance.

Q10. What is the normal background noise in the district?

A10. (RB) It depends on the wind speed. The background is often higher than 35 dB(A).

Q11. What is the noise in the meeting room right now?

A11. (RB) The fan in the projector machine would be approximately 45 dB(A), and the conversation is around approximately 60 dB(A), depending on where you are sitting.

The guideline of 35 dB(A) or background + 5 dBA is for protection at night. Currently at night internally things like fridges control the ambient noise.

The Queensland code has requirements for shadow flicker. This is unchanged from the previous EIS assessment. All turbines blades are required to have low reflectivity surfaces to further minimise blade glint. The

<p>impact of shadow flicker is only significant up to a distance of 10 rotor diameters.</p> <p>Shadow flicker is analysed at properties within 1500m of turbines. It is noted that non-participating landholders will be further than 1500m.</p> <p>Models consider terrain, house locations and turbine locations, and weather conditions. It considers an area of a 50m diameter around a house. The potential flicker from the position of a turbine is considered across a full year, based on the shadow cast. Time within the 50m diameter is counted in the model. It assumes full sun on all days per year with blades always spinning. It does not account for trees or clouds etc.</p> <p>When modelling for shadow flicker, accounting for cloud cover, the limit is reduced to 10 hours per year when considering cloud cover. Graphs from the modelling output were shown based on a year for one turbine. The hours under 30 hours of flicker were shown.</p> <p>With cloud cover, there is estimated 10 hours of flicker a year.</p> <p>Mitigations options are available for participating landholders within 1500m.</p>	
<p>7. Wind turbines and fire management</p> <p>Presented by Helena Orel, Community Stakeholder Engagement Manager</p> <p>Developers and managers of wind turbines want to protect their assets.</p> <p>Between 2000-2006 there were no fires caused by turbines.</p> <p>During 2006-2016 there were three wind turbine fires in SA, with none resulting in fire damage outside of the turbine.</p> <p>Helena was not aware of any other fires caused by turbines in Australia since this time.</p> <p>Q12. Is there asbestos in turbines?</p> <p>A12. No.</p> <p>Comparatively, during 2000-2006, there were over 8,000 fires in agriculture, and 30 caused by lightning strikes.</p> <p>There is a large investment in turbines, and risk avoidance for fire is in place in all parts of the operation. Extensive monitoring systems report to AGL's contractor's monitors to AGL's central communication centres both in Australia and off shore, When excessive heat or any smoke is detected the power is automatically shut off to remove additional power sources.</p> <p>There has been training for emergency services at Macarthur Wind Farm.</p> <p>Q13. Do host farms have to comply with keeping land cleared around turbines for fire management?</p> <p>A13. (HO) Turbine hosts are required to keep the perimeter clear of debris and equipment or fire load other fuels. There is no requirement for landholders to prevent fire to a turbine, that responsibility is with AGL.</p>	
<p>8. Other Business</p> <p>a. <u>Bird Strike</u></p> <p>Mick Cosgrove. There has been discussion about wind turbines and bird strikes, is this a problem?</p> <p>(HO) It's possible that bats and or birds can be affected by blade strike. Macarthur has 140 turbines. AGL has to monitor the flora and fauna and bat movements in the area and assess impacts caused by turbine blades. AGL has spent around \$600,000 on avifauna monitoring to date. The environmental monitors follow a grid pattern around the base of each turbine, any animal found dead in the grid is assessed to see if it was</p>	

caused by blade strike and is reported. Carcass's are kept in a freezer for potential autopsy.

70 birds have been collected at Macarthur Wind Farm, believed to have been affected by blade strike. Brolgas are located on Macarthur Wind Farm, nesting in the wetlands and they have hatched chicks. One of the chicks was found dead, thought to be drowned.

The Oaklands Hill Wind Farm monitoring program is also followed.

b. Mobile coverage and TV reception

Q14. We don't have mobile coverage, but it is required for health and safety on work sites. Will AGL install mobile towers?

A14. (HO) A temporary tower will be put in for the construction period to enable construction site communications and for health and safety communications. AGL's construction contractors will need to put in a telecommunications system, but are required to remove it during the construction site's decommissioning process.

There are a range of community benefits that can be provided by AGL. AGL would like to talk to the group in coming meetings about potential benefits. One of which is exploring telecommunications for this area.

Q15. Will the general public be able to use the temporary towers?

A15. Yes.

Q16. How long does construction take?

A16. Two years of construction.

Q17. Will there be an impact on TV and wireless receptions? If it is affected can you do something about it?

A17. Due to the height of the towers, they may affect some people's reception. Those affected in other areas have been provided set top boxes. If someone is affected, AGL would send out a technician to assess the issue and recommend a solution and AGL covers the cost.

Q18. Is this a common problem?

A18. Yes, it can be common. It is an issue if the turbines are between the house and the towers.

c. School Bus

Q19. The school bus will be impacted on Niagara Road. There was a curfew during school bus hours for other constructions. What action will AGL take?

A19. (NC) The operations of the farms are between 7am to 6pm. The workforce will be coming in at about 6 - 6:30am to work, and for health and safety buses will be used to reduce traffic. The construction crew will already be on site during school bus time. The other deliveries will be required to be minimised during the bus hours.

AGL will get the school bus routes for consideration. It was confirmed to be a government school bus service. School bus routes are part of the EIS considerations and the community is encourage to provide input regarding impacts via a submission to the EIS.

d. Traditional Owners

Q20. Traditional owner impacts have not been mentioned.

A21. (KE) There is a traditional owner who is a dedicated member of the committee and has only attended one meeting, despite efforts to encourage participation. As chair of committee it is disappointing that representation is not made at meetings.

(SG) The EIS requires a compulsory heritage management plan through Office of Coordinator General. The traditional owners will be required to

Action:
NC to follow up on school bus routes for the area around the

respond to the plan. There are four traditional groups in the area, two have responded and the others will be followed up. Meetings are planned with traditional groups. A cultural heritage management plan will be developed in consultation with traditional land owners.

e. Senate Inquiry into Wind Turbines and Health Research

There was discussion regarding a particular landholder in South Australia. Their project details are on public senate record. (HO) It was clarified that this landholder had requested additional turbines on a number of occasions, which were approved initially. Further requests were not approved. Noise insulation was provided for their house as part of the turbine hosts' contract agreement. AGL was apparently slow to respond due to difficulty in engaging contractors to work on the property.

Jim Scutt referred to a copy of a report as part of the senate inquiry, regarding the Gares. The report is available on the senate website.

Q22. How is the document relevant to Coopers Gap?

Jim Scutt. They reported noise and sleep problems, in line with what others were saying.

Can't satisfy everyone.

(HO) Turbine hosts are welcome to talk to AGL regarding any health impacts. The South Australian wind turbine host or other turbine hosts have not approached AGL directly and AGL liaises frequently with turbine hosts and encourages them to bring forward any health concerns they may have regarding wind farms. Other hosts have not reported any issues with turbines and health.

(HO) It is recommended to read the full results of the senate inquiry.

(HO) AGL follows the rules and standards set by the EPA, the World Health Organisation and Departments of Planning for wind farms and health. There is further research being conducted by the NHMRC into wind turbines and health and AGL supports this research. The results have not been released yet.

There is no medical evidence of problems manifested from wind farms. It is noted that many people in Australia and around the world work inside and around wind farms, none of which have said they have been affected by turbines. AGL would not operate wind farms if there were any affects that could impact on it's workers.

Action: (HO) Provide an update on where the NHMRC research is up to from the independent experts looking into infrasound impacts.

Q23. The outcomes depend on the terms of reference for the research. For previous research, there was evidence showing impacts that were not reported as they didn't fit the criteria based on the terms. What are the terms of reference for the current research?

A23. (HO) There is a mix of everything, including desktop studies, interviews and field studies. It is understood that the review panel is looking at Professor Salt's research and Stephen Cooper's survey work.

Comment: Would like to see extensive research conducted.

f. Project Maps

Q24. Are the new maps out yet?

A24. (HO) The updated map was in the presentation that was sent out from the last CCC. There is also another even more recent map coming out with the EIS.

(KE) Reminder that the EIS will be in public libraries, and Helena can send a usb if requested. It is also on the Office of Coordinator General's website.

wind farm site.



Action: (HO) Provide the website link to NHMRC research.

<p>Drop in sessions will have printed copies of the map.</p> <p>g. <u>Site visits</u></p> <p>(NC) Tenderers will have three days each to conduct site visits and will try to get to each turbine location. They will have a number of people with them quoting civil works etc. Please be aware that for a three-week period during September that the tenderers will be in the site location.</p> <p>(HO) AGL has been talking to local community members about potential for building a large solar plant in the area. It is in the very early stages and AGL is scouting across Australia for potential Powering Australia Renewables Fund (PARF) projects and looking into large scale solar plants is part of this fund delivery. Very early days at this stage, and nothing is definite.</p> <p>h. <u>Closing</u></p> <p>Comment. The Chair is to be congratulated as the meetings are very different to when they first started. Thank you to AGL staff for organising the trip to Victoria, it was very informative, refreshing and we had a chance to meet many people with different opinions about wind farms and to see how wind farms work. We had a wonderful time and it was very organised and well hosted. Thank you to AGL, I feel very informed now. I feel that neighbours are talking to each other again and we can continue to talk, and neighbours can continue to air concerns if they have any.</p>	<p>Action: (HO) Distribute the updated map with the next report.</p>
<p>9. Next meeting and close</p> <p>1-3pm Thursday 13 October, Cooranga North Memorial Hall, Cooranga North. (Note, arrange the room so the group is closer or get a PA system for meetings)</p> <p>Meeting closed at 3:07pm.</p>	<p>Action: (HO) Provide a PA system at the next meeting.</p>

Action Item	CCC meeting	Status	Who
AGL to provide links and information about the TOR process for anyone interested.	June 2016	Closed	HO
AGL to talk to Jim Scutt about recording on his property.	June 2016	Closed	SG
AGL to confirm surrounding residences for noise testing with different building materials.	June 2016	Closed	HO
Question 29 on notice. AGL to check the allowable limit for turbines above background noise?	June 2016	Closed	NC
People wanting to attend the Victorian wind farm trip 1-4 August need to inform HO asap.	June 2016	Closed	HO
Question 32 on notice. AGL to check the flicker impacts through summer and winter based on location of the turbines.	June 2016	Open	NC
AGL to schedule presentations on flicker, noise and fire by appropriate experts for the next	June 2016	Closed	HO

meeting, and make available previous presentations at CCC on flicker, noise and fire.			
AGL send link to EIS, distribute to those request a copy.	August 2016	Open	HO
Distribute the name of the South Burnett Council contact who can assist with capability statements.	August 2016	Open	HO
Check why house D & E stated 'not measured'.	August 2016	Open	HO
Provide the link to NHMRC research into wind turbines and health.	August 2016	Open	HO
Distribute the updated wind farm map.	August 2016	Open	HO
Provide a PA system at the next meeting.	August 2016	Open	HO