



Silverton Wind Farm

MODIFICATION REPORT



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1 EXECUTIVE SUMMARY

Project Approval for the Silverton Wind Farm was granted to Silverton Wind Farm Developments Proprietary Limited (SWDPL) on 24 May 2009, which included the construction and operation of 282 wind turbines, and associated infrastructure including a 24km transmission line from the site to Broken Hill. Approval was granted under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and included Concept Approval for the construction, operation and decommissioning of up to 598 wind turbines and associated infrastructure.

SWDPL is seeking an extension for the 2009 Project Approval from 24 May 2014 to 24 May 2016. The Department of Planning and Infrastructure (DP&I) has confirmed that an extension may be granted under Part 3A of the EP&A Act. In order to proceed with an application for a modification of the Project Approval, DP&I has indicated that additional information is required to address the following issues:

- a) A sound justification for the request and the ongoing need/justification for the project, particularly if developed at a later date, including taking into account recent developments in the renewable energy sector.*
- b) Community issues/implications for neighbouring properties and the Silverton Township associated with a potential delay to the project.*
- c) Changes that may have occurred in the surrounding environment, including ecology changes as a result of increased rainfall.*
- d) Changes that may have occurred in relation to applicable environmental guidelines.*

1.1 SUMMARY OF FINDINGS

SWDPL is wholly owned by AGL. This report has been prepared by AGL and **ngh**environmental to address the four criteria described above. AGL has provided the response to issues a) and b); and **ngh**environmental has provided the response to issues c) and d).

In consideration of the changes described below, no additional assessment or mitigation strategies are considered to be required on the basis of a two year delay to the project's commencement date.

Each issue is addressed separately in Sections 2 – 5 of this report and summarised below:

a) Sound justification

SWDPL believes that the Silverton Wind Farm site has a high quality wind resource and remains one of the most attractive wind development projects in Australia. In the last seven years, AGL Energy Limited (AGL), the owner of SWDPL, has invested \$3 billion dollars in renewable energy generation, making it the largest developer of renewable energy assets in Australia over that period.

Due to uncertainty around the 2020 Renewable Energy Target (RET), in particular a review of the RET is legislated to occur during 2014, AGL / SWDPL has so far deferred the appointment of an Engineering, Procurement and Construction (EPC) contractor for the project. AGL / SWDPL will review its position to appoint an EPC contractor during 2014.

b) Community issues / implications

SWDPL has robust community engagement processes in place with the local community via the Silverton Wind Farm Community Consultative Committee (CCC) meetings and regular meetings with the Lease Holders, the Land Owner, the Silverton community and the Broken Hill community. Continuing

community consultation addresses key issues of concern to the community and provides an opportunity to incorporate community feedback.

In addition, AGL carried out a survey of the lease holders and the Silverton community regarding the perceived impacts of project delay. Most respondents expected a low impact on tourism, local business and farming. Additional comments related to frustration about the number of years the project proposal has been in development..

c) Changes to surrounding environment

Although annual rainfall differed during the original surveys (2008), the 2008 surveys and 2013 surveys yielded similar results. It is expected that a well timed spring survey in 2011 or 2012 (during wetter conditions) would have yielded better results; numbers of native species would have been higher, due to higher levels of germination and persistence. General vegetation condition may or may not have been better.

Considering the implications of undertaking surveys in drier than average conditions, the following is noted:

- Biodiversity
 - Potential overestimation of impact on ground cover and tree regeneration and of feral goat impacts
 - Potential underestimation of impact on Endangered Ecological Community (EEC)
 - Potential underestimation of impacts to threatened flora
- Hydrology
 - Potential overestimation of water scarcity
- Soils and air quality
 - Potential overestimation of impacts

Overestimations are considered appropriately conservative, given the environmental context of the development. Updated Spinifex mapping as part of preconstruction environmental management would address potential changes in the extent of the EEC. The precautionary approach of the biodiversity assessment took into account the potential for threatened flora to occur and mitigated accordingly.

The environmental conditions at the time of the original assessment are considered to have low to no impact on other issues considered within the Environmental Assessment for the proposed Silverton Wind Farm (EA; **ng**h environmental 2008).

d) Changes to environmental guidelines and legislation

Several changes to the legislative context of the project have been identified, including to the following instruments:

- *Protection of the Environment Operations Act 1997*
- *Water Management (Water Supply Authorities) Regulation 2004* – repealed.
- *Threatened Species Conservation Act 1995* – new listings.
- *Environment Protection and Biodiversity Conservation Act 1999* – new listings.
- *Draft NSW Wind Energy Environmental Impact Assessment Guidelines 2002* – replaced.
- *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005* and *NSW Heritage Manual* – additional guidance documents have been released.

1.2 SCOPE OF THIS REPORT

The scope of this report is concurrent with the Project Approval, including the areas designated Stage 1a, 1b and 1c in the Preferred Project Report (PPR), and the transmission line to Broken Hill.

The relevant source documents used to prepare this submission are as follows:

- **ngh**environmental 2008. *Environmental Assessment for the proposed Silverton Wind Farm*, prepared for Silverton Wind Farm Developments, May 2008 (the EA).
- Silverton Wind Farm Developments 2009. *Preferred Report and Submissions Report for the proposed Silverton Wind Farm*, prepared for Silverton Wind Farm Developments, January 2009.

1.3 CONCLUSION

Project Approval for the Silverton Wind Farm is currently valid until 24 May 2014. The overriding economic driver for this project is the RET. The project justification remains current. Key benefits of the project relate to:

- Production of renewable electricity
- Reduction in greenhouse gas emissions
- Reduction in water use (when compared to coal powered plants)
- The establishment of a community fund for various local projects
- The improvement of local infrastructure
- Management of biodiversity impacts onsite
- Local and regional job creation, including stimulation of local tourism

The DP&I has confirmed that an extension may be granted under Part 3A of the EP&A Act. This document is submitted to demonstrate the acceptability of the delay in order to proceed with an application for a modification of the Project Approval.

2 JUSTIFICATION FOR EXTENSION AND ONGOING NEED FOR THE PROJECT

2.1 SUMMARY

This section provides additional information to address the following issue:

A sound justification for the request and the ongoing need/justification for the project, particularly if developed at a later date, including taking into account recent developments in the renewable energy sector.

This section sets out the justification for the ongoing need for the Silverton Wind Farm. It takes into account recent developments in the renewable energy sector and considers:

1. The reasons for the sought Project Approval extension.
2. The currency of the project justification provided in the EA (nghenvironmental 2008).
3. The motivation for the proposal.
4. The ongoing need for renewable energy to meet the 2020 Target.

Silverton Wind Farm Developments Proprietary Limited (SWDPL) believes that the Silverton Wind Farm site has a high quality wind resource and remains one of the most attractive wind development projects in Australia. In the last seven years, AGL (the owner of SWDPL) has invested \$3 billion dollars in renewable energy generation, making it the largest developer of renewable energy assets in Australia over that period.

The SWFD project benefits are unchanged from those presented in the project EA (nghenvironmental 2008). Globally, the Global Wind Energy Council (GWEC) reports there is sustained growth and diversification in the wind energy sector, pointing to an extremely healthy and globally accepted technology sector. Locally, the NSW Government's strong in-principle support for wind power development is outlined in the *Draft NSW Renewable Energy Action Plan* (NSW Government 2012) which states it is 'one of the most commercially ready and cost effective technologies that can be deployed on a large-scale'.

Due to uncertainty around the 2020 RET however, AGL / SWDPL has so far deferred the appointment of an EPC contractor for the project. Another review of the RET scheme is legislated to occur in 2014. AGL / SWDPL will review its position to appoint an EPC contractor during 2014.

Hence, SWDPL is seeking an extension for the 2009 Project Approval from 24 May 2014 to 24 May 2016. This will allow the findings of the next RET review and any potential impacts on the project to be properly considered.

2.2 THE REASONS FOR THE SOUGHT PROJECT APPROVAL EXTENSION

Project Approval for the SWFD is currently valid until 24 May 2014. The overriding economic driver for this project is the national RET. The RET sets increasing fixed requirements for the generation of renewable electricity to 2020 and beyond. A review of the RET by the Climate Change Authority (CCA) is scheduled to be conducted every two years, with the most recent being completed in 19th December 2012. One of the recommendations of the RET review was to increase the period between future reviews to four years. This would provide more certainty for renewable energy developments. This was agreed to

by the Government, but was not put to the vote before the 2013 federal election (7 September 2013). The next review will occur in 2014 and the result will be provided to the Minister by 19th December 2014.

As policy certainty in relation to the RET greatly affects the financial viability of the project, a two year extension of the Project Approval is sought, to 24th May 2016. This will allow the findings of the next RET review and any potential impacts on the project to be properly considered. AGL is committed to the continued development of renewable energy in Australia, and intends to review the project once there is less uncertainty surrounding the 2020 RET and upcoming review in 2014.

2.3 THE CURRENCY OF THE PROJECT JUSTIFICATION

2.3.1 Project benefits

The project benefits are as detailed in Section 4.1 of the EA (nghenvironmental 2008) and remain unchanged. Key benefits of the project relate to:

- Production of renewable electricity
- Reduction in greenhouse gas emissions
- Reduction in water use (when compared to coal powered plants)
- The establishment of a community fund for various local projects
- The improvement of local infrastructure
- Management of biodiversity impacts onsite
- Local and regional job creation, including stimulation of local tourism

2.4 THE MOTIVATION FOR THE PROPOSAL

2.4.1 International wind power development

As stated in the EA, wind farms remain an increasingly important source of electricity generation worldwide. Internationally, by the end of 2007, the total capacity of wind energy was more than 94 GW, which amounts to over four times the total capacity of power generation in New South Wales (nghenvironmental 2008). As stated in the EA:

...the installed capacity of wind energy was predicted to reach 149.5 GW by 2010; China has the potential to be the world's biggest wind energy market by 2020, recently doubling its current energy target for 2020 to 20 GW.

Despite the Global Financial Crisis causing a significant economic slowdown across the world, the following statistics show that these predictions have in fact been greatly exceeded since the publication of the EA in 2009:

- Global wind power capacity was 198 GW in 2010, and 282.6 GW by the end of 2012, representing a threefold increase on the global generation capacity of 2007 in five years (Global Wind Energy Council 2013) (refer to Figure 2.1).
- Global wind power capacity grew from 238 GW at the end of 2011 to 282.6 GW at the end of 2012, a yearly increase of 18.7%. Reliable data are not yet available for 2013 (Global Wind Energy Council 2013a).
- China's capacity at the end of 2012 was 75.3 GW, a growth of 20.7% for that year, giving it a global market share of 26.7% in December 2012 (Global Wind Energy Council 2013b); China's target for wind energy has, since the EA, been revised to 100 GW by 2015 (Reuters Beijing 2011; Bloomberg News 2013).

- America's capacity at the end of 2012 was 60 GW, a growth of 27.9% for the year, giving it a global market share of 21.2% in December 2012 (Global Wind Energy Council 2013b).
- Despite reduced political enthusiasm in the European Union for renewable energy, the total wind power capacity still grew 12.4% to 106 GW over 2012 (Global Wind Energy Council 2013b).
- Australia's wind power capacity was 2.58 GW at the end of 2012, equal to 0.91% of global wind power capacity (Global Wind Energy Council 2013b) (refer to Figure 2.2).

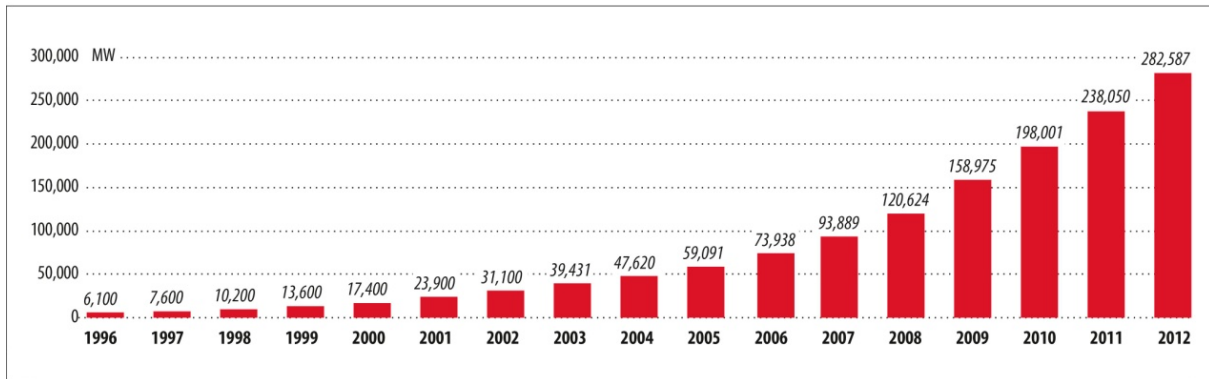


Figure 2-1 Global cumulative installed wind capacity 1996 - 2012

Source: Global Wind Energy Council, cited in AGL Energy Limited 2011.

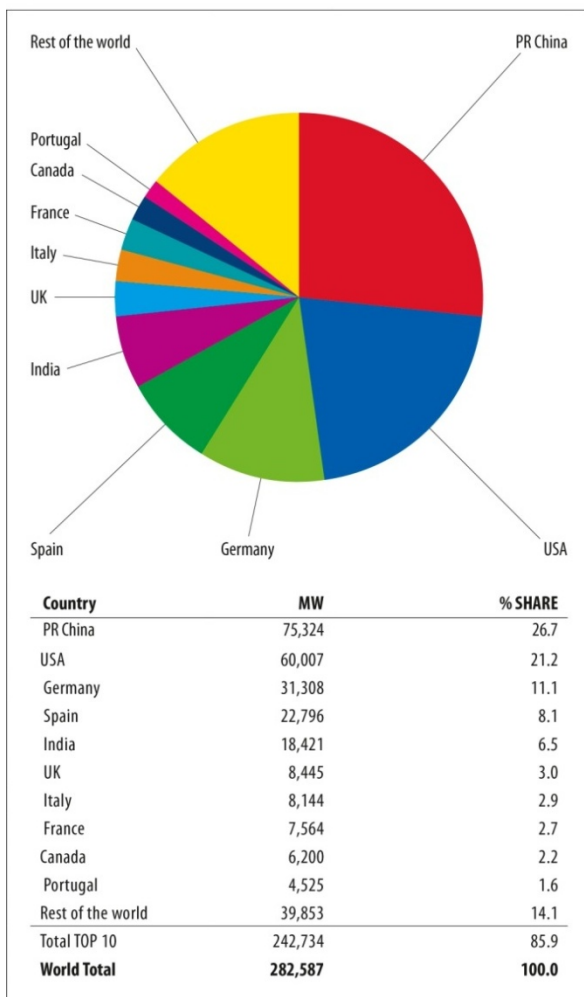


Figure 2-2 Top 10 cumulative capacity (December 2012)

Source: Global Wind Energy Council 2013c.

Following this exceptionally strong growth of the sector, the Global Wind Energy Council (GWEC) has forecast:

...that annual installations for 2013 will drop by more than 11% to just under 40 GW; and then recover sharply in 2014 to slightly exceed the 2012 market and average just over 11% annual market growth from 2014-2017 (Global Wind Energy Council, date unknown).

This sustained growth and diversification points to an extremely healthy and globally accepted technology sector.

2.4.2 Wind Power in Australia and the Renewable Energy Target (RET)

The GWEC, as part of its forecast for the wind energy sector in 2013 has stated:

As ever, policy at the national level is the most significant factor driving the market (Global Wind Energy Council, date unknown).

As this has proven the case for the SWFD, an analysis of the legislative history of Australian renewable energy policy is required for an ongoing justification for the project and prediction of its future. At this stage the single most important item of policy governing large scale wind farms is the RET. Although there is no specific target for a wind power component, the RET is the overriding economic driver for the construction of wind farms in Australia.

A history of the RET

The requirement for a minimum percentage of electricity to be generated from renewable sources is not new policy. Released in 2001 by the Howard Government, the *Renewable Energy (Electricity) Act 2000* had the following objectives (listed in Part 1, Section 3):

- a) To encourage the additional generation of electricity from renewable sources.
- b) To reduce emissions of greenhouse gases.
- c) To ensure that renewable energy sources are ecologically sustainable.

This set a Mandatory Renewable Energy Target (MRET), and outlined a list of specified renewable power sources (Part 1, Section 17) that would be eligible to create a certificate for each megawatt hour MWh of electricity produced. The Act also specified certain Liable Entities (wholesale electricity purchasers, generally electricity retailers) that would be required to surrender a certain number of certificates each year, based on their market share. The Liable Entities were able to acquire the certificates by trading or creating them themselves. Charges applied for any Liable Entity failing to surrender the required number of certificates at the end of the year.

This Act commenced on 1st January 2001 and had an increasing yearly cap of certificates available, which for 2001 was set at 300 GWh. The cap increased steadily to a maximum of 9,500 GWh per year in 2010 and was set to last until 2020. The targets specified to this point have been met every year since inception by the industry as a whole (with individual exceptions). The Act excluded the baselines of renewable sources built before 1997 (approximately 15,000 GWh/year of hydroelectric power, slightly downgraded at the time of this document due to a fall in hydro capacity).

Since 2001, the Act has undergone a myriad of changes, as an increased acceptance of climate change drove public policy responses to reduce emissions of CO₂. These changes culminated in the Rudd Government's major changes during its first term:

- *The Renewable Energy (Electricity) Amendment Act 2009*

This Act, passed on 7th September 2009, raised the RET to 45,850 GWh in 2020, and 45,000 GWh/year from 2021 to 2030. This Act also effectively increased the RET by 850 MWh/year to 2020 due to the inclusion of waste coal mine gas (WCMG) used in power generation. The 45,000 GWh was decided on a basis of 20% of Australia's estimated 2020 electricity capacity at the time.

- *The Renewable Energy (Electricity) Amendment Act 2010*

This Act, passed on 28th June 2010, split the RET into a large-scale and small scale component. The 'required GWh of renewable source electricity' (the large-scale component) was set at 41,000 GWh in 2020, increasing each year from 2011. The small-scale component is uncapped. This Act also included clauses (Section 40 (1A)) 'to smooth out' the RET trajectory, increasing the required GWh in 2012 and 2013 to clear out the surplus created by the splitting of the components, and compensating by decreasing the required GWh over the 2016-2019 period. This Act came into effect on 1st January 2011.

The current form of the RET and the 2012 review

The current version of the Act, as of 12th April 2013, has a target of 41,850 GWh from renewable source energy in 2020. The target was 16,763 GWh of large-scale generation certificates (LGCs) in 2012 and is 19,088 GWh of LGCs in 2013. These targets are derived from the yearly target (Section 40(1)), the 'smoothing function' (40(1A)) and the WCMG function (40(1B)).

The Clean Energy Council Report 2012 (Clean Energy Council Australia 2013) found that 29,678 GWh of renewable energy was produced in Australia in 2012, with wind power forming 26% of that amount. Within this, 11.4 million LGCs were created (Climate Change Authority 2013). The Act provides for the unlimited banking of certificates, allowing an entity to surrender purchased certificates above its annual quota to reduce its future requirements.

Section 162 of the Act requires a person to undertake periodic reviews of the Act and the scheme constituted by the Act, the operation of regulations, and the large- and small-scale components. The first review of the Act was completed in 19th December 2012 and the Government's response released in March 2013. The key Government responses to these were:

- The Government agreed that the frequency of scheduled reviews should be amended from every two years to every four years, so the next scheduled review would be in 2016.
- The Government agreed that 'the existing Large-scale RET of 41,000 GWh and interim targets should be maintained in their current form'.
- The Government agreed that 'the RET Review in 2016 is an appropriate time to consider adjusting the targets beyond 2020 in light of the policy and economic conditions prevailing at the time'.

(Source: Australian Government 2013a).

In terms of impact on current investment, the recommendation concerning the rescheduling of the review dates was seen by many in the industry as an important step towards guaranteeing the certainty of the program as a whole. A review every two years, which potentially alters the mechanisms, costs and size of the RET program was considered uncondusive to a stable investment climate.

The future of the RET

Despite the findings of the 2012 review, changing the review period to four years requires an amendment to the Act and therefore Parliamentary approval, which the Government was unable to prepare before entering caretaker mode ahead of the 2013 election. In May 2013 a spokesman for (then) Minister for

Climate Change Greg Combet stated, “We are not planning to introduce this legislation before the election, due to the current Parliamentary and legislative timetable” (Australian Associated Press 2013).

In contrast, the Coalition has expressly committed to proceeding with the RET Review in 2014 as legislated. Shadow Parliamentary Secretary for the Environment Senator Simon Birmingham explicitly offered support for the Large-scale Renewable Energy Target (LRET) of 41,000 GWh at the Clean Energy Week conference in July 2013 (Birmingham 2013c).

This implies that uncertainty will persist until late 2014. It is expected that the results of a 2014 review would not be published until late 2014, with the Government’s response released potentially months later. As such, SWDPL is hopeful for policy certainty in 2014, but accepts that this may not arise.

Wind power and the RET

Although the RET is the primary driver for investment in wind power in Australia, the capability and importance of wind power in fulfilling the RET have not yet been considered in this document. Given the current estimates of LGCs in circulation, it is anticipated that, without a change in the trajectory to the 2020 target, Liable Entities could begin paying significant shortfall charges in 2015 or 2016. There is significant uncertainty around the trajectory to the 2020 target and also, whether the 2020 target will remain unchanged. The shortfall charge as per the *Renewable Energy (Electricity) (Large-scale Generation Shortfall Charge) Act 2000* is \$65/MWh, however given the tax deductibility of purchasing LGCs, this is a tax effective liability shortfall charge of \$93/MWh (Climate Change Authority 2013) (refer to Figure 2-3).

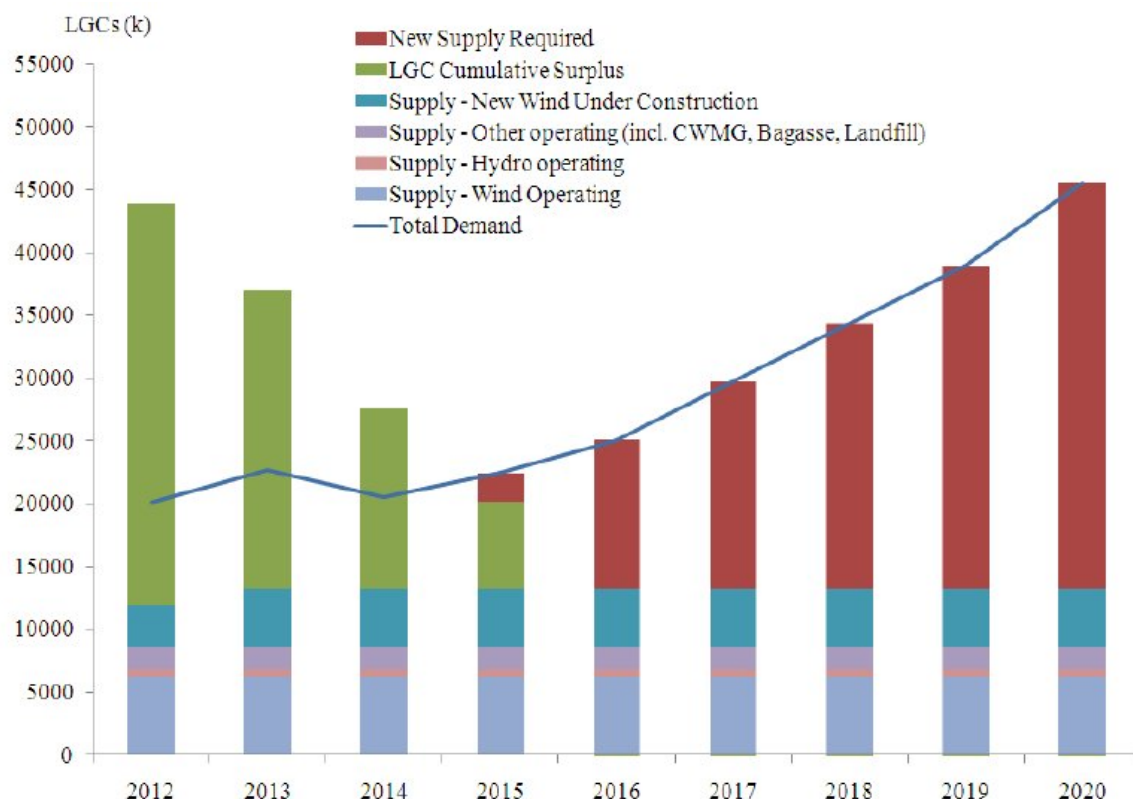


Figure 2-3 Predicted LGC market

Note that in this figure ‘demand’ represents 4,000,000 STCs per year – LGC demand is 4,000k LGCs lower than indicated on the y-axis (Source: AGL Energy Limited 2013).

It is noted with regard to large-scale generation certificates that:

- There are currently around 34.4 million LGCs available, due to electricity production exceeding the RET yearly targets over the past years (Australian Government 2013b).
- 11.4 million LGCs were created in 2012, with the yearly target set at 16.7 million, with the consumption of roughly 4.3 million LGCs from the surplus (Australian Government 2013b).
- 3.8 million LGCs have been created for 2013, with the expected total in the order of 12-13 million LGCs. Given the yearly target of 19.09 million LGCs, roughly 6 million LGCs will be surrendered from the surplus by February 2014 (Australian Government 2013b).
- Although the yearly target will decrease to 16.95 million LGCs in 2014, it is likely that new generation will still not make the shortfall.
- Worst case modelling predicts that the surplus of LGCs could be cleared by 2015-2016, meaning liability for shortfall charges.

It is very important to note that Section 19 of the *Renewable Energy (Electricity) Act 2000* allows for the creation of certificates before 'the end of the year after the year of generation'. This means that the exact amount of LGCs created in the 2012 period will not be known until the end of 2013.

Wind power is still the most cost-effective means of generating renewable power on a large scale (Australian Government 2012a). This is especially noticeable at this stage, given the small drop in hydro production over the last decade, which will likely remain the case given that Australia's hydro resources are already fairly saturated. It is even more pertinent for reaching RET targets, for which the majority of Australian hydro is ineligible as a source. Analysis of the creation history of LGCs (and RECs before the 2010 Amendment) compellingly highlights the effectiveness of wind power in fulfilling RET objectives to date. Refer to Figure 2-4.

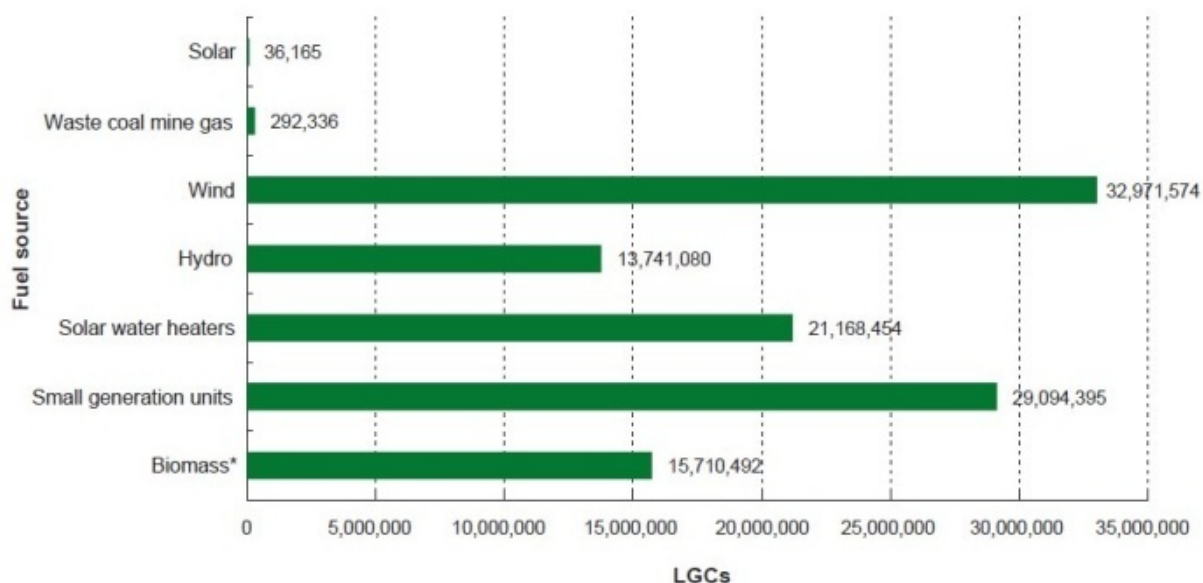


Figure 2-4 LGCs validly created by 31 December 2012 for eligible/renewable energy sources under the LRET (Source: Climate Change Authority 2013).

As well as the current relatively low cost of wind (approximately \$80/MWh) (AGL Energy Limited 2013) as a large-scale renewable resource, the cost is predicted to decrease over the next decade, irrespective of the existence of a carbon price (Australian Government 2012a). This is reflected in the high percentage of recent wind investment, which was 65% of Australian renewable energy investment by capacity as of late 2012 (Australian Government 2012b). Of this proposed development, the bulk of projects are due to come online in the next 1-2 years, or have come online since the study was completed, reflecting the reluctance of the industry to invest without sufficient regulatory certainty. This vastly decreasing medium-term investment emphasises that the lack of certainty around the RET is reducing investment certainty and new projects are less likely to be committed.

2.5 THE ONGOING NEED FOR RENEWABLE ENERGY CAPACITY TO MEET THE 2020 TARGET

2.5.1 NSW Government policy objectives

As stated in the EA, the SWFD would promote renewable energy and thereby limit greenhouse gas emissions associated with energy production. The EA made note of Commonwealth and State legislation supporting this objective, specifically the National Greenhouse Strategy, the aforementioned MRET, the NSW RET and allowances EP&A Act among others. As the main driver for the proposal, the RET, has been extensively covered, the NSW legislation will be briefly discussed here.

As well as policies to enable adaptation to climate change, the current NSW Government has committed to:

- Supporting the production of 20% renewable energy nationally by 2020 (an alignment with the Federal target, rather than a separate commitment).
- Saving 16,000 GWh of energy annually through energy efficiency measures.
- Reducing CO₂ emissions through the adoption of cleaner transport methods.

(Sources: NSW Government 2011; Australian National Greenhouse Accounts 2012).

Section 4.4.2 of the EA detailed the impacts of climate change and the proposal's contribution to the reduction of greenhouse gases causing this. Australia's greenhouse gas emissions have fallen since peaking in 2008, recording the lowest national levels in 2012 since 2001-2002. This is mainly attributable to a reduced demand and change in generation fuel mixes. In 2012 Australian electricity generation still accounted for 190.8 Mt of CO₂ equivalent greenhouse gas (34.6% of national emissions), of which NSW made up roughly 30%. In light of this, and the NSW Government's objectives (below), there is still a large scope for the development of emissions free generation.

NSW's power demand, like that of most of Eastern Australia, is forecast to grow at a relatively low rate over the next decade. This is broadly due to an increase in the retail price of electricity, energy efficiency measures and the closure of key power consumers, such as smelters. The Australian Energy Market Operator's modelling predicts between 0.2% and 0.7% average annual growth (150-500 GWh/year) (Australian Energy Market Operator 2012) meaning that the introduction of renewable energy sources will strongly align with the Australian Government's commitment to its 2020 target.

The NSW Government's commitment is outlined in the *Draft NSW Renewable Energy Action Plan* (released in late 2012). This plan, prepared by a panel including NSW's Chief Scientist and Engineer, the AEMC Commissioner and representatives from the CEC, Treasury and Department of Trade and Investment, includes in its objectives (among others):

- Streamlining the planning process.
- Creating a supportive policy and regulatory environment.
- Promoting investment opportunities in NSW.

(Source: NSW Government 2012).

The plan also acknowledges that:

Current forecasts show that wind energy will deliver the bulk of new renewable generation up to 2020 – being one of the most commercially ready and cost effective technologies that can be deployed on a large-scale.

It is AGL's (and SWDPL's) view that this document underscores the NSW Government's strong in-principle support for wind power development. It is anticipated that the final version of the *NSW Planning Guidelines: Wind Farms* will reflect the commitments of this paper.

As per the Project Approval, the SWFD project remains under Part 3A (Major Projects) of the EP&A Act, including the Critical Infrastructure classification assigned by the Minister (the project as approved is over 250 MW).

3 IMPACTS ON THE COMMUNITY RELATED TO THE DELAY

3.1 SUMMARY

This section provides additional information to address the following issue:

Community issues/implications for neighbouring properties and the Silverton township associated with a potential delay to the project.

This section details:

1. The history of community engagement undertaken, both up to and subsequent to AGL's purchase of the development rights to the project.
2. Community issues identified by the Community Consultative Committee (CCC) in order of importance.
3. Community issues associated with the proposed delay in the project.
4. The acceptability of the community impacts, with regard to the proposed extension.

Silverton Wind Farm Developments Proprietary Limited (SWDPL) has robust community engagement processes in place with the local community via the CCC meetings and regular meetings with the Lease Holders, the Land Owner, the Silverton community and the Broken Hill community.

Key impacts of the development of interest to the community have been identified as traffic impacts, visual impacts and noise impacts. Continuing community consultation addresses these issues and continues to incorporate community feedback.

In addition, AGL carried out a survey of the Lease Holders and the Silverton community regarding the perceived impacts of project delay. One respondent expected a very high impact on farming business. Two respondents expected a very high impact on local business. Two respondents expected a high impact on local business. Most respondents expected a low impact on tourism, local business and farming.

3.2 COMMUNITY ENGAGEMENT HISTORY

3.2.1 Community engagement since the issue of Project Approval

Project Approval for the SWFD was granted in May 2009. In accordance with its community consultation plan, SWDPL distributed newsletters and issued media statements and community information sessions, including public 'open house' meetings at the request of the Silverton Village Committee.

Relevant Statements of Commitment regarding future consultation obligations include:

Disseminate accessible and independent information on wind farm impacts including benefits (SoC 124).

Establish a Community Fund as outlined in the EA (SoC 125).

3.2.2 Community engagement since AGL's purchase of the project

AGL announced its acquisition of the rights to develop the SWFD from Epuron on 23 March 2012 and the first CCC meeting was held on 12 July 2012. Since then, CCC meetings have been held in August, October and November 2012, and February, March, May, June, July and August 2013.

The purpose of the CCC was to allow the community to:

- Regularly engage with SWDPL on key issues and concerns.
- Hear technical presentations and experts on request.
- Contribute and monitor the planning and construction progress.
- Build trust with SWDPL.

Community attendance at CCC meetings in 2012 and 2013 was considered reasonable (on average 10-15 observers, and 8-10 committee members) given the small population of Silverton. Generally reporters from the Barrier Daily Truth and the ABC were present. The CCC meetings predominantly focussed on:

- AGL / SWDPL delivering progress updates, including the status of the tendering process, and the tenderers' proposed turbine locations.
- AGL / SWDPL facilitating a site visit to AGL's Hallett Wind Farm for CCC members and discussions with locals.
- Ongoing updates and discussions about AGL / SWDPL actions, including sourcing water, quarrying materials and road upgrades and maintenance.
- Briefings and Q&As on issues such as visual impacts, noise and health effects and community benefits and employment opportunities.
- General questions and feedback.

Representatives from AGL / SWDPL held a meeting in Silverton in mid July before the release of the news of the project delay, where the general feeling was concern at the continued uncertainty. There was also appreciation of the face to face nature of the announcement and the informing of the local community before the wider press.

Generally, the community has been satisfied with AGL's / SWDPL's level of engagement since acquiring the project in March 2012. The makeup of the CCC has included representatives from a diverse range of interests, including the Silverton Village Committee, Broken Hill City Council, the Department of Primary Industries, Indigenous representatives, the Broken Hill Chamber of Commerce, various local businesses, station owners and local residents.

3.3 COMMUNITY ISSUES AND RESPONSES

AGL / SWDPL understand that there are concerns from some people about wind energy in Australia. Despite enjoying very strong support amongst the general public, uncertainty around development can be a cause for apprehension at the local level.

Concerns raised by the CCC have generally centred on traffic and potential impacts on tourism, visual impacts of the development and noise and health impacts. A brief discussion of these issues and AGL's / SWDPL's approach to working through them with the community is detailed below. These issues have been specifically raised and continue to be discussed by the CCC.

3.3.1 Traffic impacts

The disruption that could be caused by the SWFD construction traffic has been a concern to the CCC throughout the consultation process. This has been raised in several meetings and an ongoing consultation process (via the CCC) was adopted to select the best mitigation options.

Consultation and transparency have been applied during the investigation of an alternate haulage route that would bypass the Broken Hill township (at AGL's/ SWDPL's cost). Also, AGL / SWDPL has been working on locating and gaining approval for the utilisation of sand and rock from the Silverton Wind Farm site for the construction of turbine footings and other civil works. This could significantly reduce construction traffic on public roads. The CCC was extensively consulted about these two issues. An AGL construction manager also delivered a briefing on traffic to the CCC and conducted a Q&A session at the May 2013 CCC meeting. The later stages of the tendering process will involve the submission to the CCC and DP&I of a Traffic Management Plan and presentations and discussions with representatives from the successful contractor.

The revised Statements of Commitment (provided in the 2009 Preferred Project Report and Submissions Report which form part of the project's approval) require AGL/ SWDPL to:

Liaise with the local visitor information centres to ensure that construction and decommissioning timing and haulage routes are known well in advance of works and to the extent practical coordinated with local events (SoC 100).

With continued discussion around this issue at the CCC meetings, no additional measures are considered to be required.

3.3.2 Visual impacts

The Silverton township and its surrounds are a source of considerable visual amenity. The majority of the local submissions to the publically exhibited EA confirmed this. Furthermore, members of the CCC have emphasised this value at several meetings.

AGL / SWDPL is required to follow all of the relevant¹ Statements of Commitment contained within the EA (ngghenvironmental 2008) and Preferred Project and Submissions Report (Silverton Wind Farm Developments 2009), including to:

...provide and bear the full cost of reasonable landscaping treatments to visually screen these dwellings.

(for affected houses) as per the Project Approval. Similarly to the noise impacts (discussed below), AGL / SWDPL has provided as specific information as possible about the location of the turbines and separation from homes at the May, June, and July 2013 CCC meetings.

The scope of the screening commitment is linked to the methodology of the Landscape and Visual Impact Assessment (LVIA) conducted for the EA. This assessment remains current and was compliant with the draft *NSW Planning Guidelines for Wind Farms 2011* in containing:

- Analysis of the landscape's ability to absorb the Silverton Wind Farm, and sensitivity of the features to change.

¹ The Preferred Project and Submissions Report (2009) supersedes the Environmental Assessment (2008). Generally speaking, the revised SoCs within the 2009.

- Analysis of the actual visual impact of the development, including its visibility and zone of visual impact.
- Preparation of photomontages from potentially affected residences, urban settlements and significant public view points.
- Consideration of shadow flicker and blade glint (not deemed to be an issue due to the separation involved).

The LVIA was conducted for Stages 1 and 2, thus the actual visual impact of the current development (Stage 1 only) will be substantially less than identified in the LVIA.

No additional visual mitigation measures are considered to be required.

3.3.3 Noise

The issue of noise emissions from wind turbines, produced by either the movement of the blades themselves or the gearbox and generator, is likely the most prominent source of community concern in relation to wind farm development in Australia. Despite numerous studies disproving links between residential proximity to turbines and health effects, this has also been a concern of the Silverton CCC and has been addressed here and as part of the broader AGL policy.

With respect to concerns about the health impacts caused by audible noise and infrasound, 19 separate literature reviews have concluded that wind farms do not adversely affect the health of residents living near wind farms, including those conducted in America and Europe, which have lower legal separation distances than Australia. In Australia, the Clean Energy Council, Victorian Department of Health, National Health and Medical Research Council and World Health Organisation (among others) have all produced documentation supporting this conclusion.

AGL / SWDPL has, as far as commercially possible, provided maximum transparency and consultation when accounting for noise impacts. Community input through the CCC was sought on the turbine locations despite the early stage of discussions with tenderers, who were specifically required to draft wind farm layout options with separations from the Silverton township in mind (5 km – 6.5 km). This is significantly greater than the 2km required by the *draft NSW Planning Guidelines for Wind Farms 2011* for non participating landowners. Where homesteads and stations were within 5 km of the site, AGL / SWDPL has undertaken individual discussions with the residents to provide maximum information and opportunity for feedback. AGL / SWDPL also enabled presentations from public health professionals and engineers to the CCC on the topic of noise and associated impacts caused by wind farms, as well as maintaining relevant online resources such as documents prepared by the Victorian Department of Health.

Extensive noise prediction modelling was undertaken as part of the EA, and AGL maintains a policy of ongoing noise compliance monitoring. SWDPL has consulted and worked closely with landholders where noise complaints have been received (despite compliance with government regulations) at other locations. SWDPL has also sponsored a site visit to two of the Hallett Wind Farm facilities to provide CCC members with the opportunity to speak with people living close to a wind farm (closer than the minimum distance from Silverton for any property).

With continued discussion around this issue at the CCC meetings, no additional measures are considered to be required for noise.

3.3.4 Community issues associated with a delay in the project

Issues specific to the delay in the project affect involved parties (landowners, leaseholders), local businesses and specifically the tourism industry. Project Approval was issued in May 2009. Surveying of the community started in late 2007. AGL / SWDPL has therefore undertaken significant updating of the findings since then, and as part of this has considered the effects of a further delay on the local community. These are discussed for each stakeholder group below.

Involved parties

The landowners and lease holders agreeing to be turbine hosts receive reimbursement for the turbines on their properties. This is a source of revenue that offers financial diversification and drought proofing for minimal impact (after the construction phase), and is usually provided in tandem with favourable maintenance deals for access roads and other infrastructure. The delay to the project will significantly impact the incomes of the turbine hosts, however AGL / SWDPL has endeavoured to keep the landowner and landholders as informed as reasonably possible throughout the project to this point, and will continue to do so. AGL / SWDPL consulted all of the turbine hosts before releasing the news of delay to the public.

Local business

AGL / SWDPL is committed to involving local contractors in construction and maintenance roles where possible, and has provided local employment opportunities in past projects. Although the early stage of the tendering process meant that no firm contracts involving local business had been drafted for the SWFD, it was anticipated that this would follow, and representatives of local business and the Broken Hill Chamber of Commerce attended CCC meetings. The delay to the project increases the uncertainty for local business and affects their short term demand for work. However, the project still represents a large future investment into the region in the medium to longer term.

The revised Statements of Commitment (provided in the 2009 Preferred Project Report and Submissions Report which form part of the project's approval) require SWDPL to:

Liaise with local industry representatives to maximise the use of local contractors and manufacturing facilities in the construction and decommissioning phases of the Project (SoC 99).

Make available employment opportunities and training for the ongoing operation of the wind farm to local residents where reasonable (SoC 102).

No additional measures are considered to be required on account of the delay.

Tourism industry

Tourism was an area identified by the environmental assessment as potentially benefitting as a result of the project. The EA stated:

Experience at other wind farms indicates that tourists and motorists are likely to be interested to find out more about the wind farm.

The EA identified the opportunity for community consultation to play a role in achieving this objective. The community fund discussed with the CCC by AGL / SWDPL would also likely assist in the promotion of Silverton township and its extensive mining history. Both of these avenues to increase tourism would be detrimentally affected by the delay to the project.

The revised Statements of Commitment (provided in the 2009 Preferred Project Report and Submissions Report which form part of the project's approval) require SWFD to:

Coordinate construction activities with local events (SoC 126).

Provide wind farm promotional information to the local visitor information centres (SoC 127).

Support educational and promotional tours targeting the construction and operation of the wind farm, subject to safety concerns and the permission of landholders (SoC 128).

Work with the Silverton Village Committee and involved landholders to allow for the development of the wind farm as a tourist attraction, if this option is desirable to these parties (SoC 129).

No additional measures are considered to be required.

3.3.5 Community survey

To provide the Silverton community further opportunity to comment on the potential impacts which the SWFD project's uncertainty may have on the community and businesses, a survey was distributed to the Silverton community and CCC members. The survey included questions about impacts to tourism, local business and farming. Approximately 41 surveys were distributed. Eight responses were received. The results are summarised in the table below (Figure 3-1) and the full survey results are provided in Appendix B.

One respondent expected a very high impact on farming business. Two respondents expected a very high impact on local business. Two respondents expected a high impact on local business. Most respondents expected a low impact on tourism, local business and farming.

Some comments indicated concern around the project in general and frustration about the number of years the project proposal has been in development. There was a comment about potential health problems and anxiety caused by the project's delay. Some comments indicated relief that the delay would give the community a break from having to deal with the project. Comments also referred to the economic benefits the project would provide, if it was to proceed.

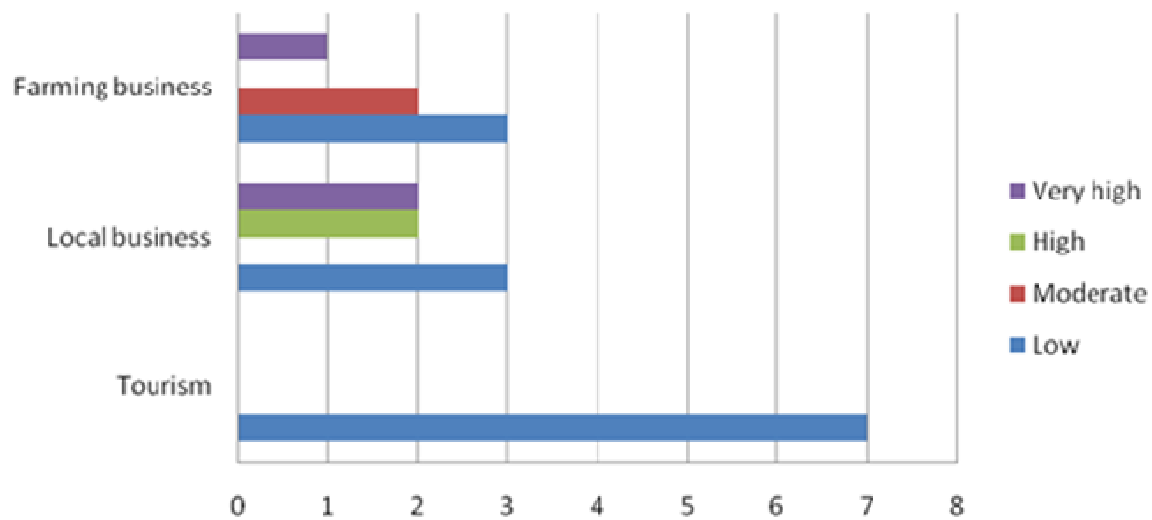


Figure 3-1 Community survey summary

Respondents were asked to score the expected level of impact of the project's delay on each issue. The number of responses in each category is shown.

3.4 ACCEPTABILITY OF THE DELAY

The EA and Preferred Project and Submissions Report for the approved SWFD were reviewed in consideration of the time elapsed since the Project Approval was granted.

No mitigation measures, additional to those currently accompanying the project approval are considered warranted to manage the impacts of the delay on the community. AGL / SWDPL believes that there will be no further substantial negative impacts on the community as a result of this delay, and that the community still stands to benefit greatly from the project should it be resumed.

4 CHANGES IN THE SURROUNDING ENVIRONMENT

4.1 SUMMARY

This section provides additional information to address the following issue:

Changes that may have occurred in the surrounding environment, including ecology changes as a result of increased rainfall.

This section considers changes that may have occurred in the surrounding environment since the EA (nghenvironmental 2008) and Preferred Project and Submissions Report (Silverton Wind Farm Developments 2009) were completed. Specifically, it considers whether these changes, including to the ecology within the project boundaries and region may have relevance to the approval granted to the project in 2009. It considers:

1. The key changes to the local environment.
2. Whether the changes would affect the conclusions drawn in the EA.
3. The acceptability of the changes (the affect on the project, if it were submitted today, in light of this additional information).

The spring 2008 survey, undertaken in a wetter than average year, and the autumn 2013 surveys, undertaken in a wetter than average year but after an extended dry period, yielded similar results. It is expected that a well timed spring survey in 2011 or 2012 would have yielded better results; native species richness would have been higher due to higher levels of germination and persistence. General vegetation condition may or may not have been higher.

The key impact areas that the changed conditions may have affected are considered to be:

- Biodiversity
 - o Potential overestimation of impact on ground cover and tree regeneration and the impacts of feral goats; an appropriately conservative outcome considering the context of the development.
 - o Potential underestimation of impact on EEC; updated mapping as part of preconstruction environmental management would address this issue.
 - o Potential underestimation of impacts to threatened flora; the precautionary approach undertaken in the biodiversity assessment considered this as a possibility and mitigated appropriately.
- Hydrology
 - o Potential overestimation of water scarcity; an appropriately conservative outcome considering the context of the development.
- Soils and air quality
 - o Potential overestimation of impacts; an appropriately conservative outcome considering the context of the development.

The environmental conditions at the time of the assessment are considered to have low to no impact on other issues considered within the EA.

4.2 KEY CHANGES TO THE LOCAL ENVIRONMENT

In order to identify the key changes in the surrounding environment, we sourced relevant climate data from the Bureau of Meteorology (BOM). Additionally, environmental site descriptions from the EA (including the Biodiversity Appendix) were compared to site descriptions onsite and in the local area in April of this year.

4.2.1 BOM observations

Field work for the SWFD project submission was completed in 2007 and 2008. The closest weather stations to the project site are the Umberumberka Reservoir (nearest the site but missing several rainfall statistics) and Patton Street, in Broken Hill. The BOM rainfall data for these two stations between 2006 and 2013 is presented in Table 4-1. The two right-hand columns have been added by the author to show:

- How the annual rainfall compares to the average in this location.
- On this basis, whether the year would be considered generally 'dry' or 'wet'.

In summary, the years 2006 – 2009 can be seen to have been generally drier than the years 2010 – 2012. The results are not clear cut however. In 2008, the year of the assessment, 26.2mm less rainfall than average was recorded at Umberumberka Reservoir while the Broken Hill station recorded 23.8mm more than average. Recent years (2010 – 2012) can however, be seen to have higher rainfall.

Table 4-1 Rain fall statistics 2006 - 2013

Rainfall (mm)														
Umberumberka Reservoir														
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Compared to average (207.0mm)
2006	17.2	5.4	8.8	20.2	1.2	7.8	33.2	1.4	2.6	2	11.2	15.6	126.6	-80.4 dry
2007	59.2	17.6	15.8	9.4	56.4	7.2	1	0	0	12.4	48.8	2.4	230.2	23.2 wet
2008	5.6	0	11	4.2	3.6	60.2	13.6	16.6	9.6	0	14.3	42.1	180.8	-26.2 dry
2009	16.4	0	9	10.4	2.8	19.4		2	5	1	47	18		
2010	16.4		114	19.4	28.8	20.4	23	15	23.4	61.8	60.4	42.2		
2011	171.8	78.6	62.6	12.4	16	2.4	15.4	15.6	2.2	24	48	42	491	284 very wet
2012	104.8	53.8		0.8	0.8	12.4	33.8	1	0.8	3.8	19.8	6.4		
2013	0	18.6	7	6.4	17.4	55	9.4							
Rainfall (mm)														
Patton Street, Broken Hill														
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Compared to average (259.6mm)
2006	23.4	5.8	23.4	17.4	0	23.2	37.4	1.2	3.4	4.4	1.4	15	156	-103.6 dry
2007	108.8	16	22	24.2	58.8	16	3.6	0	0.2	18.8	37.2	6.4	312	52.4 wet
2008	23.2	0.2	30.8	3	1.4	80	17.8	15.4	27.6	0.8	40.8	42.4	283.4	23.8 wet
2009	37.6	2.8	11.4	8.6	16.4	28.4	21.2	12.2	9.4	3.8	51.2	18.2	221.2	-38.4 dry
2010	3	109.6	112.4	25.4	28	14.6	19.2	16.8	36	62.6	65.2	47.4	540.2	280.6 very wet
2011	127.4	140.6	129.8	12.6	17.8	2.8	15.6	16.6	17.6	24.6	66	33.6	605	345.4 very wet
2012	126.2	94.4	83.2	1.6	0.8	12.4	40	5.4	5	5.2	34	11.8	420	160.4 very wet
2013	0.6	22.8	12.8	15.2	27	58.4	15.4							

4.2.2 2007 environmental conditions

In 2008, the Biodiversity Assessment (BA) completed as part of the EA sought to describe and measure key biodiversity attributes and assess the presence and condition of significant values within the project area. The fieldwork was carried out between:

24 September - 1 October, 2007

26 November - 30 November, 2007

The BA notes that while the region had been experiencing an extended dry period in the months preceding the 2007 survey, 275.4mm of rainfall had been recorded at the Broken Hill weather station between November 2006 and November 2007 (BOM 2007). Considering the yearly average of 253mm, the year was above average.

Section 4.2.6 of the BA describes onsite conditions:

The condition of the Mulga-Dead Finish vegetation community in the study area is poor, and characteristic of past land use practices across the Western Division. In most areas, the key tree species are absent or very few, being dominated by dead stags of these species. There is very little regeneration of key species such as Mulga and Dead Finish across most of the development area...

Field investigations of the study area identified that the southern areas of the study area appeared to have a higher number of goats and greater numbers of scats (south of the existing monitoring tower), and there was a qualitative correlation between the condition of the vegetation increasing with an increasing distance from Umberumberka Dam; likely a key resource for feral goat populations in the area.

Continuing degradation of the vegetation communities of the study area is further highlighted by increasing sedimentation of the local water storage dams...

... Wasson and Galloway (1986) have noted that the cover of vegetation in the area around Broken Hill has increased during the last 30 years, and that as a result the rates of erosion have fallen. Much of the reason for this moderate recovery has been attributed to a drop in the rabbit population. However, the farming of feral goats continues across the Western Division, and the practice continues to impact on the vegetation communities, including those within the study area.

Despite the degradation and structural changes to these communities occurring as a result of past and current land use practices, the study area is dominated by native flora species, with only 11 introduced species recorded. No noxious weeds were recorded as declared by the Noxious Weeds Act 1993 for the Broken Hill local government area or the Unincorporated area.

Table 4-2 summarises the environmental condition of the site in 2008.

Table 4-2 Environmental condition summary: 2008

Year	Location	Onsite / local area	Extent of survey	Climate context *	General condition of environment
2008 (spring)	Stage 1 Silverton Wind Farm Project area	Onsite	Extensive flora and fauna targeted surveys	Dry	Vegetation condition generally poor due to feral goat grazing in combination with drought. Weeds few.

* with reference to Table 4-1: 'wet' or 'dry'

4.2.3 2013 environmental conditions

In April 2013, **ngh** environmental undertook ecological site inspections (generally between 1.5 – 2 hours per site) as part of associated environmental studies. Three areas that occur within the project site were inspected in relation to developing quarries for the SWFD:

- Silverton Aggregate Quarry Lake's Knob.
- Silverton Mundi Mundi Creek Sand Quarry.
- Silverton Aggregate Quarry West.

For all inspections, the autumn timing (preceded by dry weather) meant that many flora individuals had died and it was noted that it was likely that there would be species present in the seed bank that were not evident during the survey. General conditions observed during these inspections are sourced below² (and summarised in the end of this section, Table 4-3).

Silverton Aggregate Quarry Lake's Knob

This site shows evidence of previous excavation. In general, species diversity was considered to be moderate given the conditions preceding the survey however, given the high levels of disturbance, the majority of the vegetation within the study area is considered to be in poor condition. There are some areas in the north and east of the study area where an overstorey is present and a woodland structure is somewhat maintained. The vegetation would be considered to be in moderate condition in these areas. Typical vegetation condition at the quarry site is shown in Figure 4-1 below.

The majority of the overstorey vegetation has been cleared and there are extensive areas of predominately bare rocky ground. There was no evidence of overstorey regeneration. Scats likely to be from feral goats and sheep were observed within the study area and surrounds and grasses and palatable shrubs showed evidence of grazing and browsing. Feral goats were seen to be active in the areas surrounding the site. Dieback on the overstorey trees suggests that there have been prolonged periods of dry weather, providing further stress to vegetation within the study area.

Exotic species were generally only found within the excavated pits and their immediate surrounds.

² At the time of writing, none of these reports have been finalised and hence no reference is provided. Notes were provided by the attendant botanist, Dave Maynard.



Figure 4-1 Typical vegetation within the study area: Silverton Aggregate Quarry Lake's Knob

Silverton Mundi Mundi Creek Sand Quarry

This area has not previously been used as a quarry. Vegetation community condition within the study area was reported as follows:

1. River Red Gum open woodland of intermittent watercourses mainly of the arid climate zone. Weed species are uncommon. Generally the vegetation within this community is in a near natural state and it is considered to be in good condition.
2. Bluebush shrubland on stony rises and downs of the arid zone. The area appears to have been heavily grazed and the vegetation has lost some of its structural integrity. Weed species were virtually absent however, considering the relatively high levels of disturbance, the vegetation is considered to be in moderate condition.
3. Mulga-Dead Finish on stony hills mainly of the Channel Country and Broken Hill Complex Bioregions. Similarly to the Bluebush shrubland, weeds were generally absent. The vegetation appears to have been disturbed due to grazing and it is considered to be in moderate condition.

Scats likely to be from feral goats and sheep and those of rabbits were observed within the study area and surrounds. Grasses and palatable shrubs showed evidence of grazing and browsing. Feral goats were seen to be active in the areas surrounding the site. No other forms of disturbance were evident during the survey. Typical vegetation condition at the quarry site is shown in Figure 4-2, 4-3 and 4-4 below.



Figure 4-2 River Red Gum open woodland: Silverton Mundi Mundi Creek Sand Quarry



Figure 4-3 Bluebush shrubland: Mundi Mundi Creek Sand Quarry



Figure 4-4 Mulga – Dead Finish Woodland: Mundi Mundi Creek Sand Quarry

Silverton Aggregate Quarry West

This area has not previously been used as a quarry. One vegetation type was identified within the study area, Mulga-Dead Finish on Stony Hills. In general, species diversity was very low and combined with the high levels of disturbance, the vegetation is considered to be in poor condition (see Figures 4-5 and 4-6 below).

Feral goats and their scats were observed in abundance within the study area and surrounds and grasses and palatable shrubs showed evidence of intense grazing and browsing (refer to figures below). There was little evidence of overstorey regeneration. Dieback on the overstorey trees suggests that there have been prolonged periods of dry weather, providing further stress to vegetation within the study area. Historically, timber harvesting is also likely to have had an impact. The scarcity of vegetative cover suggests that these pressures have been in operation for some time, and it is likely that many species have been eliminated from the community within the study area as a result, particularly due to feral grazing by goats.

Exotic species in general were very sparse or absent.



Figure 4-5 Typical vegetation within the study area: Silverton Aggregate Quarry West



Figure 4-6 Feral goats and evidence of intense grazing within the study area: Silverton Aggregate Quarry West

Table 4-3 summarises the environmental condition of the three sites in 2013.

Table 4-3 Environmental condition summary: 2013

Year	Location	Onsite / local area	Extent of survey	Climate context *	General condition of environment
2013 (autumn)	Silverton Aggregate Quarry Lake's Grave	Onsite	Ecological site inspection	Wet	Vegetation condition generally poor due to feral goat grazing in combination with dry conditions. Weeds few.
2013 (autumn)	Silverton Mundi Mundi Creek Sand Quarry	Onsite	Ecological site inspection	Wet	Vegetation condition generally moderate to good. Goat and rabbit grazing evident. Weeds few.
2013 (autumn)	Silverton Aggregate Quarry West	Onsite	Ecological site inspection	Wet	Vegetation condition generally poor due to feral goat grazing. Weeds few.

* with reference to Table 4-1: 'wet' or 'dry'

4.2.4 Change in condition summary

The spring 2008 survey, undertaken in a wetter than average year, and the autumn 2013 surveys, undertaken in a wetter than average year but after an extended dry period, yielded similar results. Vegetation condition is good in some areas but generally poor where disturbance regimes (predominantly goat grazing) is entrenched. Overstorey regeneration particularly is limited by this factor. Generally, introduced species including noxious weeds are few or absent from the areas inspected.

Considering the rainfall data, it is expected that a well timed spring survey in 2011 or 2012 would have yielded better results. It is expected that native species richness would have been higher, due to higher levels of germination and persistence. General condition may or may not have been higher. Overstorey regeneration and the amount of bare ground versus ground cover is clearly linked to goat and rabbit herbivory, respectively. These processes are still operating onsite and continuing to adversely affect structural improvement in the vegetation communities present. Considering the low abundance of introduced and weedy species detected, weeds are unlikely to be a key issue. Although it is noted that weed abundance would have been higher during a spring survey in 2011 or 2012.

4.3 AFFECT ON IMPACT ASSESSMENT

In reviewing the EA with regard to the relevance of onsite environmental conditions at the time of the assessment, the key impact areas are considered to be:

- Biodiversity, specifically:
 - Ground cover and tree regeneration
 - Flora and fauna of conservation significance
 - Threatening processes: Feral activity
- Hydrology, specifically:
 - Water supply
- Soils and air quality

The conclusions of the assessment and affect of changing conditions on these areas is discussed below. The environmental conditions at the time of the assessment are considered to have low to no impact on other issues considered within the EA.

4.3.1 Biodiversity

The EA stated the foremost impacts of the proposal would occur during the construction phase, when excavation and clearing is required to establish footings for infrastructure, install infrastructure and to accommodate additional tracks, turn-around areas and stockpile areas. Additionally, vegetation surrounding the development footprint would be affected by vehicle access and parking, materials lay down and spoil deposition and retrieval. Indirect impacts may include soil compaction, soil erosion and sedimentation. Pollution risks are associated with the concrete batch plant, fuels and lubricants and construction chemicals used at the site.

Ground cover and tree regeneration

Undertaking the impact assessment in 2008, the extent and health of ground cover and tree regeneration may have been underestimated in comparison to wetter 2010-2012 years. Undertaken during these years, the impact assessment may have assumed greater soil binding capacity of ground cover and overall increased resistance to erosion and weed invasion. Similarly, tree regeneration may have appeared more prevalent than assumed in the 2008 assessment and lead to a less conservative approach to vegetation clearing assessment.

In this scenario, the impacts would have been slightly overestimated but would have represented a 'worst case scenario'. In the context of climatic extremes and continued goat and rabbit predation, this conservative approach is considered appropriate and no suggested changes to mitigation measures of the EA are considered warranted.

Flora and fauna of conservation significance

Undertaking the impact assessment in 2008, the extent and health of Spinifex grassland (porcupine grass/red mallee/gum coolibah/hummock grassland/low sparse woodland on metamorphic ranges on the Barrier Range Broken Hill Complex Bioregion), later listed as an EEC in NSW under the *Threatened Species Conservation Act 1995* may have been underestimated in comparison to wetter 2010-2012 years. Considerable die back was noted in this community in the 2008 assessment and although slow growing, it is expected that the overall condition may have been underestimated by the assessment. The impact mitigation strategy for this entity was avoidance. While mapping is present within the EA, this would be considered outdated with regard to managing impacts on the current extent of this community. It is recommended that updated mapping or ground validation of existing mapping be undertaken during the preconstruction environmental management of the project to effectively address this issue.

The EA noted that there was potential for three threatened flora to occur onsite:

- Showy indigo *Indigofera longibractea*
- Yellow-keeled swainsona *Swainsona flavicarinata*
- Creeping darling pea *Swainsona viridis*

Under the wetter conditions of 2010-2012, greater germination rates would be expected and it is possible that these species may have been detected. The 2008 assessment assumed that it was possible that these species could occur and be affected by the development of the wind farm. Assessments of significance pursuant to state legislation were undertaken to characterise the significance of the potential

impacts. Low risk of affecting a viable population was noted for each species. As the precautionary approach was adopted in the assessment, no changes to mitigation measures of the EA are considered warranted.

Threatening processes: Feral animal activity

Undertaking the impact assessment in 2008, the effect of goat activity impacts may have been overestimated. While goat numbers reflect abundance of food and would be expected to fluctuate with the yearly conditions, active harvesting of goats is undertaken by leaseholders that may act to even out fluctuations.

Numbers aside, the adverse effect of goat predation on ground cover and tree regeneration would expect to be exacerbated in dry conditions. The adverse affect may therefore have been overestimated in comparison to wetter 2010-2012 years. Undertaken in spring during these years later years, the impact assessment may have detected greater persistence of regeneration. However, considering the long-term nature of this regime and the ongoing increased effects of dry conditions, the 2008 assessment provides a precautionary approach. In the context of climatic extremes and continued goat and rabbit predation, this conservative approach is considered appropriate and no suggested changes to mitigation measures of the EA are considered warranted.

It is also worth noting the project's link to goat management and broader ecological benefits. As part of construction and operational environmental management commitments, goat activity would be reduced and resulting benefits are expected to result not only for vegetation communities and threatened flora species but for several threatened ground-dwelling fauna. These following species are known to occur or are considered as possibly occurring onsite:

- Stripe-faced Dunnart
- Kultarr
- Forrest's Mouse
- Sandy Inland Mouse
- Tawny Rock Dragon
- Slender Mallee Blue-tongue Lizard
- Ringed Brown Snake
- Marble-headed Snake-lizard
- Woma

In areas where goat activity is high, abundance of goat scat and low levels of ground cover and vegetation regeneration combine to reduce habitat quality for these species.

4.3.2 Hydrology (water supply)

Water requirements of the project are nearly all related to the construction phase. The EA states that there are two potential water supplies for water required during construction:

- Umberumberka Reservoir (primary supply)
- Stephens Creek Reservoir (secondary supply)

Essential Water (formerly Country Water) administer surface water resources and were consulted in relation to use of these resources.

Records obtained from Country Water dating-back to 1971 indicate that the Umberumberka Reservoir has been empty eight times since its construction, with the longest period being-26 June 1981 to 2 March

1983. The most recent period in which the reservoir was empty was from 30 October to 12-December 2006. Considering the higher than average rainfall received in the 2010-2012 period, water scarcity is expected to be less of an issue than it was in the 2008 assessment.

It is recommended that renewed consultation be undertaken to confirm the accessibility of these two reservoirs for the project's requirements. No additional assessment or mitigation strategies are considered warranted.

4.3.3 Soils and air quality

The EA identifies that soil compaction and soil erosion are likely to occur during excavation works, road works and the transport of machinery. There is also a risk of potential soil contamination from the use of chemicals including hydrocarbon fuels and toilet facilities during construction of the turbines.

Erosion present in locality included:

- Scalding and sand drift
- Minor rilling and water sheeting
- Gully and sheet erosion

It was considered that these forms of erosion are primarily as a result of grazing, drought and associated natural processes including wind and rainfall.

The EA identifies receivers which may be considered sensitive to air quality impacts during and following the development of the SWFD as residences (particularly in the town of Silverton) and tourists. The EA states that dust and emissions are likely to be generated during clearing, excavation, blasting (if required), concrete batching, rock crushing (if required), road works and during the transport of infrastructure and materials to the site. It is considered that impacts would be greatest during the construction and decommissioning phases.

The adverse effects of soil disturbance and dust on local receivers would be overestimated in drought conditions. If works are completed in a wetter than average year, the impacts would be expected to be slightly less. The site has large areas of bare ground however, and excavation on steep landforms will result in large areas of additional bare soil being created. Recolonisation of bare ground is slow and difficult to achieve during most of the year at the site however, even in good conditions. The 2008 assessment therefore addresses a 'worst case scenario', being undertaken in a drier period. The mitigation strategies provided in the EA are considered appropriate to managing these impacts. They are related to the biodiversity mitigation measures and centre on minimisation of impact area and stabilisation and remediation of disturbed areas, as required. No changes are considered to be required.

4.3.4 Summary of changes to the impact assessment 2008 vs 2013

Table 4-4 summarises the consequence of undertaking the impact assessment in drier than average conditions. It considers whether a change to the assessment conclusion or mitigation strategy is warranted.

Table 4-4 Summary of changes to the impact assessment 2008 vs 2013

Issue	Result	Change proposed?
Biodiversity		
Ground cover and tree regeneration	Overestimation of impact	No. Precautionary approach considered appropriate to site context.
Endangered Ecological Community	Potential underestimation of impact	No. Updated Spinifex mapping (or ground validation of existing mapping) is however recommended as part of preconstruction environmental management to properly implement the avoidance strategy.
Threatened flora	Potential underestimation of impact	No. Precautionary approach considered this possibility.
Threatening processes: Feral activity	Overestimation of impact	No. Precautionary approach considered appropriate to site context.
Hydrology (water supply)	Overestimation of water scarcity	No. Precautionary approach considered appropriate to site context. Renewed consultation County Water is noted as now being appropriate.
Soils and air quality	Overestimation of impact	No. Precautionary approach considered appropriate to site context.

4.4 ACCEPTABILITY OF CHANGES

In the light of changes to the environment since the original assessment, most notably increased rainfall, the potential for additional or increased adverse impacts as a result of the construction and operation of the SWFD is considered to be low.

In general, the assessment took a precautionary approach appropriate to a site context that includes extremes of climate and high levels of feral goat activity. Together, these two factors act to suppress vegetation health and reduce habitat quality for native flora and fauna. They increase susceptibility of the site to erosion and dust. The mitigation measures set out in the EA address these issues. No changes to the mitigation strategies in the EA are proposed.

Two recommendations are made that are necessitated by the delay in the preconstruction phase of the project:

- Updated Spinifex mapping (or ground validation of existing mapping) will be required as part of preconstruction environmental management to properly implement the avoidance strategy for this community
- Renewed consultation Essential Water (formerly County Water) regarding water supply requirements is appropriate.

5 CHANGES TO APPLICABLE ENVIRONMENTAL GUIDELINES

5.1 SUMMARY

This section provides additional information to address the following issue:

Changes that may have occurred in relation to applicable environmental guidelines.

This section considers changes that may have occurred since the 2009 project approval. It considers:

1. The currency of environmental legislation listed in the EA and Preferred Report and Submissions Report.
2. New acts, planning instruments, guidelines and listings of relevance to the project.
3. The acceptability of the changes (the affect on the project, if it were submitted today).

Several changes to the legislative context of the project have been identified, including to the following instruments:

- *Water Management (Water Supply Authorities) Regulation 2004* – repealed.
- *Threatened Species Conservation Act 1995* – new listings.
- *Environment Protection and Biodiversity Conservation Act 1999* – new listings.
- *Draft NSW Wind Energy Environmental Impact Assessment Guidelines 2002* – replaced.
- *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005* and *NSW Heritage Manual* – additional guidance documents have been released.

In consideration of these changes, no additional assessment or mitigation strategies are considered to be required on the basis of a two year delay to the project's commencement date.

5.2 CURRENCY OF EA ENVIRONMENTAL LEGISLATION

The currency of environmental legislation addressed by the EA is summarised in Table 5-1 below. The relevance of each instrument to the 2008 assessment is noted, as well as whether a substantive change has occurred in the intervening period that may affect the project. Substantive changes are discussed further in Section 5.2.

Table 5-1 Environmental legislation summary

Instrument	Comment from 2008 EA	Substantive change to applicability?
Critical Infrastructure	The SWFD proposal qualified as Critical Infrastructure (under Part 3A of the EP&A Act 1979) as it has a capacity to generate in excess of 250MW.	No. Part 3A was repealed in 2011, however approvals issued remain in place.

Instrument	Comment from 2008 EA	Substantive change to applicability?
<i>Environmental Planning and Assessment Act 1979: Part 3A approval process</i>	Part 3A integrates the assessment and approval regime for all Major Projects that require the approval of the Minister for Planning and do not require authorisations under the: <i>Fisheries Management Act 1994</i> <i>Heritage Act 1977</i> <i>National Parks and Wildlife Act 1974</i> <i>Native Vegetation Act 2003</i> <i>Rivers and Foreshores Improvement Act 1948</i> <i>Rural Fires Act 1997</i> <i>Water Management Act 2000</i> <i>Threatened Species Conservation Act 1995</i> <i>Protection of the Environment Operations Act 1997</i> <i>Local Government Act 1993</i> As such, requirements identified within the above mentioned Acts were not considered as part of the assessment.	No. Part 3A was repealed in 2011, however approvals issued remain in place.
<i>Protection of the Environment Operations Act 1997</i>	The EPA can issue licences that are designed to control the potential air, noise, water and waste impacts of an activity. A concrete batch plant license was identified as being required.	Yes. The requirement for the concrete batch plant license remains relevant. Additionally, the EPA is now the appropriate regulatory authority for large-scale wind farm premises under this act.
<i>Western Lands Act 1901 and Crown Lands Act 1989</i>	The proposed wind farm site is located on Crown land currently held under grazing leases issued under the <i>Western Lands Act 1901</i> . The Department of Trade and Investment – Crown Lands Division acts as landowner on behalf of the Crown. The proposed wind farm would be granted a special purpose lease by the Department of Trade and Investment with the consent of the existing lessees, who would receive remuneration from the wind farm operator.	No.
<i>Water Management (Water Supply Authorities) Regulation 2004</i>	This regulation identified that a person must not erect any building or structure, carry out any work or alter or extend any building, structure or work without the consent of Country Water (now Essential Water).	Yes. This regulation was repealed by the <i>Water Management (General) Regulation 2011</i> and is discussed in Section 5.2.
<i>Native Vegetation Act 2003</i>	Property Vegetation Plans (PVPs) can be administered under Part 4 Native Vegetation Act 2003 and require approval from the Minister. A permit for native vegetation clearing under this act is not required for projects approved under Part 3A of the EP&A Act.	No.
<i>Threatened Species Conservation Act 1995</i>	Assessment under this act is not required for projects approved under Part 3A of the EP&A Act. However, the DGRs consider all relevant listed entities.	Yes. Several new listings are relevant to the project. These are discussed in Section 5.2.

Instrument	Comment from 2008 EA	Substantive change to applicability?
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	The EPBC Act provides for a Commonwealth assessment and approvals system for 'matters of national environmental significance'.	Yes. Several new threatened and migratory listings are relevant to the project. These are discussed in Section 5.2.
DP&I draft NSW Wind Energy Environmental Impact Assessment Guidelines 2002	These guidelines identify important factors to be considered when undertaking environmental assessments of wind farm projects.	Yes. This document has been superseded by the Draft NSW Planning Guidelines for Wind Farms 2011 and is discussed in Section 5.2.
Auswind's Best Practice Guidelines for the Implementation of Wind Energy Projects in Australia 2006	The guidelines were developed to establish the process for identifying, developing and implementing wind energy projects. They address technical and planning issues.	No. Although this document has been superseded the current form of document (Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, Clean Energy Council, 2013) contains no substantive changes with regard to this project. The update contains revised bird and bat appendices to cover ecology considerations and references current community engagement guidelines. It is considered that the project as proposed would still be considered Best Practice with reference to these guidelines.
Ecologically Sustainable Development	Ecologically sustainable development (ESD) involves the effective integration of social, economic and environmental considerations in decision-making processes.	No.
Department of the Environment, Heritage, Water and the Arts, Supplementary Significant Impact Guidelines 2.1.1: Wind Farm Industry Sector 2008	The purpose of these guidelines is to assist operators in the wind farm industry to decide whether or not actions they propose to take require assessment and approval under the EPBC Act.	No.

Instrument	Comment from 2008 EA	Substantive change to applicability?
Bilateral agreements	In accordance with subsection 45(4) of the EPBC Act and Division 16.1 of the EPBC Regulations 2000, the Commonwealth of Australia entered into a bilateral agreement with New South Wales. One of the aims of the agreement is to minimise duplication of environmental impact assessment processes, ensuring a coordinated approach for actions requiring approval from both the Commonwealth and the State.	No.
Local government instruments and policies	The SWFD site is located within the unincorporated area administered by the NSW Department of Trade and Investment – Crown Lands Division; as such local government instruments are not applicable to works within this area.	No.
Australian Wind Energy Association and Australian Council of National Trust's Wind Farms and Landscape Values: National Assessment Framework 2007	The visual assessment was undertaken in accordance with these guidelines.	No.
SA EPA's Wind Farms - Environmental Noise Guidelines 2003	The noise assessment was undertaken in accordance with these guidelines.	No. The document has been updated (2009). The updated guidelines are very similar and generally less stringent.
EPA Environmental Noise Control Manual	The noise assessment was undertaken in accordance with these guidelines.	No. Although this manual has been replaced by the Interim Construction Noise Guidelines, the identification of sensitive receivers, and the compliance to standard work hours and construction noise criteria of 10dB above background levels, as required by the guidelines, are consistent with the 2008 assessment for the project.
Draft Guidelines for Threatened Species Assessment 2004	These guidelines remain current. The flora and fauna surveys sections for 1a, 1b, 1c and the transmission line easement were conducted in accordance with the Guideline.	No.
Cumulative Risk for Threatened and Migratory Species 2006	These guidelines remain current. The flora and fauna surveys for sections for 1a, 1b, 1c and the transmission line easement accounted for the cumulative risks to threatened and migratory species (predominantly birdlife).	No.

Instrument	Comment from 2008 EA	Substantive change to applicability?
Wind Farms and Birds: Interim Standards for Risk Assessment 2005	These guidelines remain current. The two main issues raised in the Standards (bladestrike and alienation) were both considered as part of the avian sections of both environmental assessments. All of the objects were complied with and a risk matrix was prepared as per the Standards.	No.
Assessing the Impacts on Birds - Protocols and Data Set Standards	This work supplements recommendations for bird assessment in AusWEA's Best Practice Guidelines 2006 and has been put together with the assistance of a broad range of stakeholders. The fauna assessment was carried out with reference to this guideline.	No.
Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005	The archaeology assessment was undertaken in accordance with these guidelines which were developed specifically for Part 3 A projects.	Yes. Additional guidelines have been released since the assessment. Refer to Section 5.2.
NSW Heritage Manual	A Statement of Heritage Impact was undertaken as part of the environmental assessment in accordance with this manual.	Yes. Additional guidelines have been released since the assessment. Refer to Section 5.2.
Draft Heritage Study of the Unincorporated Area of NSW	The heritage assessments of stages 1a, 1b, 1c and the transmission line easements referenced the report.	No.
Wind Farms and Heritage (Heritage Council of NSW, 2003)	The NSW Heritage Council has produced a policy paper on Wind Farms and Heritage - Heritage Council Advice (Coleman 2003) and a related document entitled Cultural Landscapes Charette (Coleman 2003). Both of these documents were consulted during this assessment.	No.
AC 139-18(0) Obstacle Marking and Lighting of Wind Farms (Civil Aviation Safety Authority, July 2007)	Direct correspondence with CASA was undertaken in relation to obstacle marking, as part of the assessment.	No. Statements of commitment require further consultation regarding aircraft hazard prior to construction.

5.3 NEW ACTS, INSTRUMENTS AND LISTINGS

Table 5.1 identified several instruments that may have relevance to the delayed commencement of the SWFD. These are discussed below.

5.3.1 Protection of the Environment Operations Act 1997

The EPA is now the appropriate regulatory authority for large-scale wind farm premises under this act. Operators of large scale wind farms must now hold environment protection licences for both construction and operation. Transitional provisions apply.

The changes have been implemented through the Protection of the Environment Operations Amendment (Scheduled Activities) Regulation 2013 (the Amendment Regulation), which commenced on 28 June 2013.

It is expected that licensing arrangements specific to the Silverton Wind Farm Development will be set out in the construction environmental management documentation for the project.

5.3.2 Water Management (Water Supply Authorities) Regulation 2004

The *Water Management (General) Regulation 2011* supersedes two former regulations: the *Water Management (General) Regulation 2004* and the *Water Management (Water Supply Authorities) Regulation 2004*.

This new regulation incorporates the following key changes:

- Exemptions - changes have been made to ensure better consistency across exemptions, to clarify the parameters of existing exemptions, to create two new exemptions that will require the Minister's approval and to introduce some new exemptions to reduce red tape.
- Amnesty for pre-1999 unlicensed works - the amnesty for pre-1999 unlicensed works will expire on 31 December 2011. Applications for approvals and licences lodged before 31 December will be processed under the amnesty provisions, providing there is proof with the application that the structure or activity was being undertaken prior to 1 January 1999.
- Administrative improvements - various administrative improvements, including new provisions for the electronic lodgement of applications for licences, approvals and objections, to provide for faster and simpler transactions for the public.
- Advertising requirements - water supply works that are to be used for a period of not more than six months for certain prescribed purposes (instead of the previous period of three months) do not need to be advertised.
- Domestic and stock activities - activities that are exempt with respect to domestic and stock rights are now specifically defined within the regulation.

These changes are not considered relevant to the water supply required by the SWFD. Country Water are still the authority with regard to sourcing water from Umberumberka or Stephens Creek Reservoirs. The existing Statement of Commitment requires the proponent to:

Consult with Country Water on the scope of all further work to be undertaken in relation to the legislative requirements associated with the works in the Umberumberka Creek Special Area

No additional mitigation is considered warranted regarding water access.

It is noted that an aquifer interference regulation took effect in NSW on 30 June 2011. This regulation amended the *Water Management (General) Regulation 2004* with requirements for mining exploration and petroleum (including coal seam gas) exploration activities. While the SWFD is not an exploration activity, it is noted that the impact of the project on ground water was a key issue, raised by stakeholders during the assessment. The existing Statement of Commitment requires the proponent to:

Undertake detailed geotechnical investigations to ensure that the project would have no material adverse effect on groundwater/aquifers.

No additional mitigation is considered warranted regarding ground water impacts.

5.3.3 Threatened Species Conservation Act 1995 and Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

New biodiversity data base searches were completed as part of this review (Appendix A). Several entities were returned that were not explicitly addressed in the Stage 1 biodiversity assessment for the project.

While an evaluation of the potential for these species to be affected by the development has not been undertaken, it is likely that the site does not provide habitat for many of them. Construction management commitments would minimise impacts to a broad range of flora and fauna. Several commitments that would have this effect are included below:

Design infrastructure layout to minimise clearing. Confine works wherever practical to cleared or sparsely vegetated areas.

Implement weed and sediment erosion controls to minimise onsite habitat degradation resulting from the proposed works. This would include a weed hygiene process.

Infrastructure placement would avoid areas of high biodiversity value as identified in Map set 6 of the Biodiversity Addendum where possible.

Beyond use required for the construction of a transmission line and road widening of an existing track, the undescribed vegetation communities identified (Mulga/Red Mallee shrubland on rocky slopes of the Barrier Range, and Chenopod - Red Mallee woodland /shrubland on gravelly lower slopes) would be protected from other impacts including use for materials/equipment laydown.

Prepare and implement recovery plan for the Porcupine Grass - Red Mallee - Gum Coolibah hummock grassland vegetation community which occurs onsite and the threatened reptile fauna which rely on it. This plan would aim to achieve a net gain within this ecological community.

Prepare and implement a goat management plan across vegetation in the stage one area with a particular focus on porcupine grass/red mallee/gum coolibah/hummock grassland. The goat management plan shall be developed with input from the Department of Planning, Department of Environment and Climate Change, Western Catchment Management Authority, Department of Primary Industries, Broken Hill Rural Lands Protection Board and relevant landholders.

Avoid standing dead trees and woody debris where practical. Where they require removal to allow for the tracks and hardstand areas, they should be placed adjacent to the impact areas, to retain these refuges in the immediate area.

5.3.4 Draft NSW Wind Energy Environmental Impact Assessment Guidelines 2002

The Draft NSW Wind Energy Environmental Impact Assessment Guidelines 2002 were replaced by the Draft NSW Planning Guidelines for Wind Farms 2011. The new document was prepared after extensive consultation to ensure effective consultation with local communities was included as part of assessments and to ensure that improved consistency, transparency and rigour were brought to the wind farm planning assessment process.

Key changes included:

- Health issues - precautionary approach to the consideration of health issues
 - Proponents required to explicitly consider health issues.
 - Applications may be referred to the Ministry of Health as part of the assessment process.

- Visual impact assessment
 - Comprehensive framework for assessing impacts on visual amenity, with a particular focus on visual impacts on neighbours within 2km of a proposed turbine.
 - Consideration of landscape character, landscape values, visual amenity and any scenic or significant vistas.
 - Requirement for photomontages.
- Decommissioning
 - Responsibility with the wind farm owner.
 - Requirement for a decommissioning and rehabilitation plan.
- Consultation with community
 - Requirement for a Community Consultation Committee early in the process to gather input during the assessment process.
- Noise impact assessment – the most stringent criteria in Australia were adopted:
 - Low frequency noise, tonality, excessive amplitude modulation (including the van den Berg effect), auditing and compliance issues.
 - The predicted equivalent noise level, including all normal wind farm noise characteristics, should not exceed 35 decibels (A-weighted) or exceed the background noise by more than 5 decibels, whichever is greater.
 - Demonstration of effective consultation prior to lodging the application.

The SWFD EA had largely adopted these strategies prior to the commencement of the 2011 guideline. Specifically, health impacts, visual impact, decommissioning and community consultation changes have been considered best practice for some time and were addressed in the assessment.

Regarding noise, the character of wind turbine generator noise emission was assessed for any special audible characteristics, such as tonality or low frequency content. Regarding construction noise, the predicted worst-case construction noise impacts for most receivers are below the existing typical daytime background level. Short term localised exceedences were considered satisfactory. The noise generated from construction traffic was predicted not to exceed existing levels by more than 2dBA. Blasting was noted to have potential for short term exceedences. Regarding operation, noise levels were predicted to be below 35dB(A) for all mapped receivers (EA; 2008, Figure 7.8). Auditing and compliance are addressed in the Statement of Commitment to an operational plan:

Implement an adaptive management approach if noise exceedences are identified during wind turbine operation.

Hence, no additional assessment or mitigation is considered warranted, with regard to the new instrument.

5.3.5 Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005

The DP&I still regards the 2005 guideline as appropriate however the NSW Office of Environment and Heritage (OEH) has released additional guidelines since the SWFD assessment was carried out:

- The Aboriginal Cultural Heritage Consultation Requirements 2010 - this document stipulates additional consultation requirements.

- The Due Diligence code of Practice for the Protection of Aboriginal Objects in NSW 2010 - this document sets out a category of low impact activities for which there is a defence regarding harming an object. It removes negligence as a defence to harming an object.
- Code of practice for Archaeological investigation of Aboriginal objects in NSW 2010.
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW 2011.

The requirements of these additional documents have not been taken into account by the archaeological assessment and mitigation strategies. Relevant Statements of Commitment centre on the development of strategies with the Local Aboriginal Land Council but do not explicitly require OEH consultation:

Develop in consultation with an archaeologist and the local Aboriginal Land Council a Cultural Heritage Management Protocol which documents the procedures to be followed for impact avoidance or mitigation in relation to indigenous heritage with reference to the recommended management strategies outlined in Table 22 of the archaeological report.

Train specified personnel involved in the construction and operation phases of the project in procedures to avoid disturbance to any cultural heritage places and items.

Implement an active conservation strategy with regard to the two discrete object locales identified in Stage 1 to ensure that they are not inadvertently impacted during the construction, operation and decommissioning of the wind farm. (Note that these locales are either situated outside areas in which impacts are proposed or within areas in which a strategy of conservation, and hence impact avoidance, is expected to be highly feasible).

5.3.6 NSW Heritage Manual

The requirements of additional OEH guidance documents have not been taken into account by the non-indigenous heritage assessment and mitigation strategies. It is considered that changes would not substantially affect the assessment or mitigation strategies proposed, however. Relevant Statements of Commitment centre on the development of strategies to avoid and minimise impacts but do not explicitly require OEH consultation:

Develop in consultation with an archaeologist a Cultural Heritage Management Protocol which documents the procedures to be followed for impact avoidance or mitigation in relation to non-indigenous heritage. A strategy of impact avoidance is entirely feasible for all of the recorded heritage items which warrant such an approach.

Train personnel involved in the construction and management phases of the project in procedures to recognise and avoid disturbance to cultural heritage places and items.

Subject any non indigenous heritage sites found in the proposed impact areas to a site significance assessment in order to form the basis for the development of appropriate mitigation and management strategies. This may involve the preparation of more detailed heritage assessments or heritage impact statements for sites if required. These would follow guidelines of the NSW Heritage Office publications 'Statements of Heritage Impact' and 'Assessing Heritage Significance'.

Additionally, the EA sets out 'avoid and minimise' specifications for several identified sites.

New listings

New data base searches were completed as part of this review. One new listing is relevant to Stage 1 of the project; the Silverton Tramway Mainline Viaduct.

Table 5-2 Updated heritage listings

Item	Significance	Considered in 2008 EA
NSW State heritage		
Day Dream Smelter	State	Yes
Broken Hill Cemetery	Local	Yes
Broken Hill Veterinary Clinic	Local	Yes
Brookfield's Grave and Monument	Local	Yes
Burke Ward Public School	Local	Yes
Silverton Tramway Mainline Viaduct	Local	No
White Rocks Reserve	Local	Yes
Australian Heritage Database		
Burke Ward Public School	(Registered) Register of the National Estate	Yes
Silverton Adelaide St	(Registered) Register of the National Estate	Yes
Former Municipal Chambers Bourke St	(Registered) Register of the National Estate	Yes
Mundi Mundi and Umberumberka Reservoir	(Indicative Place) Register of the National Estate	Yes

It is noted that a nomination for listing the Silverton Tramway Mainline Viaduct on the State Heritage Register is currently before the NSW Heritage Division, OEH (submitted Dec 2012). Consultation with NSW Heritage Division regarding potential to directly impact this 'work' is not formally required.

5.4 THE ACCEPTABILITY OF THE CHANGES

Several changes to the legislative context of the project have been identified. No additional assessment or mitigation strategies are considered to be required on the basis of a two year delay to the project's commencement date. Additional agency consultation as part of the construction and operation environmental management processes however, is likely to have merit.

6 REFERENCES

- AGL Energy Limited 2013. *Analysing Clean Energy Markets*, July 2013, Tim Nelson. This was presented as part of the CEC's Clean Energy Week.
- AGL Energy Limited 2011. *AGL Sustainability Performance Report*, survey performed by Sinclair Knight Merz, June 2010.
- Australian Associated Press 2013. *Labor dumps RET plans*, 31/5/13, Marcus Priest.
- Australian Energy Market Operator 2013. *National Electricity Forecasting Report for the National Electricity Market*, 2013, Table 4-1 shows the annual energy forecasts for NSW (GWh). Note that this is a percentage growth revised down from the previous report (ref. 1), although the 2012 report table includes the ACT.
- Australian Energy Market Operator 2012. *National Electricity Forecasting Report for the National Electricity Market*. Table B-3 shows the average daily household electricity consumption for NSW. From this the average yearly household electricity consumption for NSW/ACT was 6475 kWh in 2010-2011.
- Australian Government 2013a. *Australian Government Response to the Climate Change Authority's Renewable Energy Target Review Final Report*, March 2013, "the Government agrees that the existing 41,000 GWh Large-scale Renewable Energy Target and annual targets should be retained."
- Australian Government 2013b. *The register of Large-scale Generation Certificates*, Clean Energy Regulator, This registry is updated every 30 minutes. Accessed 2/8/13.
- Australian Government 2012a. Bureau of Resources and Energy Economics. *Australian Energy Technology Assessment*, July 2012, Fig 4.29 provides an estimate of large-scale on-shore wind power costs to 2050. Section 3.6 provides a discussion of the rationale behind predicting the fall in price. It is noted that this report assumes a capacity factor of 38%, which is conservative for modern turbines.
- Australian Government 2012b. Bureau of Resources and Energy Economics. *Major Electricity Generation Projects*, November 2012. A full list of major electricity projects can be found in the Appendix.
- Australian Government date unknown. Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, *Australia's Emissions Reduction Targets*, <http://www.climatechange.gov.au/climate-change/greenhouse-gas-measurement-and-reporting/australias-emissions-projections/australias>
- Australian Greens, date unknown, *Clean Energy Roadmap*.
- Australian National Greenhouse Accounts 2012, Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education 2012. *Quarterly Update of Australia's National Greenhouse Gas Inventory*, December 2012.
- Birmingham, S. (Senator) 2013a. *Clean Energy Week Conference – Address 24 July 2013*, 24/7/13, "If elected, we will also abolish the Climate Commission, the Climate Change Authority, the Clean Energy Finance Corporation and the Energy Security Fund."
- Birmingham, S. (Senator) 2013b. *Clean Energy Week Conference – Address 24 July 2013*, Sen.; "the Coalition is committed to reducing Australia's emissions by 5% by 2020 and to the bi-partisan conditions for any further reduction."

- Birmingham, S. (Senator) 2013c. *Clean Energy Week Conference – Address 24 July 2013*, “The Coalition supports the current system, including the 41,000 GWh target”. Until this clarification the RET was generally specifically stated as 20% by the Coalition.
- Birmingham, S. (Senator) 2013d. *Clean Energy Week Conference – Address 24 July 2013*, 24/7/13, “The next review is legislated to occur in 2014. Despite the Authority recommending it to be a four year, rather than a two yearly review, the Government has not changed the legislative requirement for that review. If elected, the Coalition would undertake that review, as required by existing legislation.”
- Bloomberg News 2013. *China boosts wind power output 41%, edges closer 2015 target*, 9/4/13, <http://www.bloomberg.com/news/2013-04-09/china-boosts-wind-power-output-41-edges-closer-to-2015-target.html>, accessed 30/7/13.
- Clean Energy Council Australia 2013. *Clean Energy Australia Report*, March 2013.
- Climate Change Authority 2013. *Renewable Energy Target 2012 Administrative Report*, 15 April 2013.
- Climate Change Authority 2012. *Renewable Energy Target Review Final Report*, December 2012, Australian Government.
- Global Wind Energy Council 2013a. *Global cumulative installed capacity 1996-2012* (graphic), <http://www.gwec.net/global-figures/graphs/> accessed 30/7/13.
- Global Wind Energy Council 2013b. *Global installed wind power capacity in 2012 – regional distribution* (graphic), <http://www.gwec.net/wp-content/uploads/2012/06/Global-installed-wind-power-capacity-MW-ÔÇô-Regional-Distribution.jpg>, accessed 30/7/13. Note the discrepancy between these data and those found in ref. 4, as not all installed capacity is connected to the major grids.
- Global Wind Energy Council 2013c. *Top 10 cumulative capacity (December 2012)*, <http://www.gwec.net/wp-content/uploads/2012/06/Top-10-Cumulative-Capacity-December-2012.jpg>, accessed 30/7/13.
- Global Wind Energy Council, date unknown. *Market forecast for 2013-2017*, <http://www.gwec.net/global-figures/market-forecast-2012-2016/>, accessed 24/7/13.
- Grattan Institute 2013. *The Coalition’s Climate Change Strategy*, 16/6/13. This was a policy discussion during which Greg Hunt, Shadow Minister for Climate Action, Environment and Heritage, is quoted as saying, “...we also accept, and we gave support to the government for the targets, not just the 5% but also the conditions for change.”
- NSW Government 2011. *NSW 2021: A Plan to Make NSW Number One*.
- NSW Government 2012. *Draft NSW Renewable Energy Action Plan*.
- Renewable Energy (Electricity) Amendment Bill 2010*, No. R3, sheet 6114 (revised), moved by Senator Milne on behalf of the Australian Greens in committee of the whole, assented to 23/6/10.
- Reuters Beijing 2011. *China revises up 2015 renewable energy goals: report*, 11/8/11, <http://www.reuters.com/article/2011/08/30/us-china-energy-renewable-idUSTRE77TOCM20110830>, accessed 30/7/13.
- Wasson, R.J. and Galloway, R.W. (1986) Sediment Yield in the Barrier Range Before and After European Settlement. *The Australian Rangeland Journal* 8(2) 79 - 90 2013 environmental conditions.

APPENDIX A DATA BASE SEARCHES

A.1 THREATENED SPECIES – FLORA

Scientific Name	Common Name	NSW Status	Commonwealth status	Considered in 2008 EA
<i>Dipteracanthus australasicus</i>		E		
<i>subsp. corynothecus</i>				
<i>Brachyscome papillosa</i>	Mossgiel Daisy	V	V	
<i>Calotis moorei</i>	A burr-daisy	E	E	
<i>Cratystylis conocephala</i>	Bluebush Daisy	E		
<i>Erodiochrysalis eldredgei</i>	Koonamore Daisy	E		
<i>Kippistia suaedifolia</i>	Fleshy Minuria	E		
<i>Leptorhynchus waitzia</i>	Button Immortelle	E		
<i>Lepidium monophloeoides</i>	Winged Peppergrass	E	E	
<i>Polycarpha spirostylis subsp. glabra</i>		E		
<i>Nitella partita</i>		E		
<i>Atriplex acutiloba</i>		E		
<i>Atriplex infrequens</i>	A saltbush	V	V	Yes
<i>Atriplex sturtii</i>	A saltbush	E		
<i>Dysphania platycarpa</i>		E		Yes
<i>Threlkeldia inchoata</i>	Tall Bonefruit	E		
<i>Convolvulus tedmoorei</i>	Bindweed	E		
<i>Ipomoea polymorpha</i>	Silky Cow-Vine	E		
<i>Eleocharis obicis</i>	Spike-Rush	V	V	Yes
<i>Euphorbia sarcostemmoides</i>	Climbing Caustic	E		
<i>Crotalaria cunninghamii</i>	Green Bird Flower	E		
<i>Indigofera helmsii</i>	Indigo	E		
<i>Indigofera longibractea</i>	Showy Indigo	E		Yes
<i>Swainsona adenophylla</i>	Violet Swainson-Pea	E		
<i>Swainsona colutoides</i>	Bladder Senna	E		
<i>Swainsona flavicarinata</i>	Yellow-Keeled Swainsona	E		Yes
<i>Swainsona murrayana</i>	Slender Darling Pea	V	V	Yes
<i>Swainsona pyrophila</i>	Yellow Swainson-pea	V	V	
<i>Swainsona viridis</i>	Creeping Darling Pea	E		Yes
<i>Acacia acanthoclada</i>	Harrow Wattle	E		
<i>Acacia carneorum</i>	Purple-wood Wattle	V	V	Yes
<i>Acacia notabilis</i>	Mallee Golden Wattle	E		
<i>Acacia rivalis</i>	Creek Wattle	E		Yes
<i>Goodenia nocoleche</i>	Nocoleche Goodenia	E		
<i>Scaevola collaris</i>	Fan Flower	E		
<i>^Pterostylis cobarensis</i>	Greenhood Orchid	V	V	
<i>Phyllanthus maderaspatanus</i>	Phyllanthus maderaspatensis	E		
<i>Austrostipa nullanulla</i>	A spear-grass	E		
<i>Austrostipa wakoolica</i>	A spear-grass	E	E	
<i>Grevillea kennedyana</i>	Flame Spider Flower	V	V	
<i>Santalum murrayanum</i>	Bitter Quandong	E		
<i>Dodonaea stenozyga</i>	Desert Hopbush	E		
<i>Solanum karsense</i>	Menindee Nightshade	V	V	
<i>Stackhousia clementii</i>		E		

E Endangered, V Vulnerable

NSW Threatened Species Conservation Act 1995

Commonwealth Environment Protection and Biodiversity Conservation 1999

A.2 THREATENED SPECIES – FAUNA

Scientific Name	Common Name	NSW Status	Commonwealth status	Considered in 2008 EA
<i>Neobatrachus pictus</i>	Painted Burrowing Frog	E		
<i>Diplodactylus conspicillatus</i>	Fat-tailed Diplodactylus	E		Yes
<i>Lucasium stenodactylum</i>	Crowned Gecko	V		Yes
<i>Strophurus elderi</i>	Jewelled Gecko	V		
<i>Aprasia inaurita</i>	Mallee Worm-lizard	E		
<i>Delma australis</i>	Marble-faced Delma	E		Yes
<i>Ctenotus brooksi</i>	Wedgesnout Ctenotus	V		Yes
<i>Ctenotus pantherinus ocellifer</i>	Leopard Ctenotus	E		
<i>Cyclodomorphus melanops elongatus</i>	Mallee Slender Blue-tongue Lizard	E		Yes
<i>Cyclodomorphus venustus</i>		E		
<i>Egernia whitii</i>	White's Skink population in the Broken Hill Complex Bioregion	E		Yes
<i>Lerista xanthura</i>	Yellow-tailed Plain Slider	V		Yes
<i>Tiliqua multifasciata</i>	Centralian Blue-tongued Lizard	V		
<i>Tiliqua occipitalis</i>	Western Blue-tongued Lizard	V		Yes
<i>Ctenophorus decresii</i>	Tawny Crevice-dragon	E		Yes
<i>Ramphotyphlops endoterus</i>	Interior Blind Snake	E		Yes
<i>Antaresia stimsoni</i>	Stimson's Python	V		Yes
<i>Aspidites ramsayi</i>	Woma	V		Yes
<i>Pseudonaja modesta</i>	Ringed Brown Snake	E		Yes
<i>Simoselaps fasciolatus</i>	Narrow-banded Snake	V		Yes
<i>Leipoa ocellata</i>	Malleefowl	E	V, M	
<i>Anseranas semipalmata</i>	Magpie Goose	V		
<i>Oxyura australis</i>	Blue-billed Duck	V		Yes
<i>Stictonetta naevosa</i>	Freckled Duck	V		Yes
<i>Geophaps scripta</i>	Squatter Pigeon	E	V	
<i>Phaps histrionica</i>	Flock Bronzewing	E		Yes
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	
<i>Circus assimilis</i>	Spotted Harrier	V		
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	V		Yes
<i>Hieraaetus morphnoides</i>	Little Eagle	V		
<i>Lophoictinia isura</i>	Square-tailed Kite	V		Yes
<i>Falco hypoleucos</i>	Grey Falcon	E		Yes
<i>Falco subniger</i>	Black Falcon	V		
<i>Grus rubicunda</i>	Brolga	V		Yes
<i>Ardeotis australis</i>	Australian Bustard	E		Yes
<i>Burhinus grallarius</i>	Bush Stone-curlew	E		Yes
<i>Charadrius mongolus</i>	Lesser Sand-plover	V	C,J,K	
<i>Pedionomus torquatus</i>	Plains-wanderer	E	V	Yes
<i>Rostratula australis</i>	Australian Painted Snipe	E	E	Yes
<i>Calidris alba</i>	Sanderling	V	C,J,K	
<i>Calidris ferruginea</i>	Curlew Sandpiper	E	C,J,K	
<i>Limosa limosa</i>	Black-tailed Godwit	V	C,J,K	
<i>Calyptorhynchus banksii samueli</i>	Red-tailed Black-Cockatoo (inland subspecies)	V		Yes
<i>Lophochroa leadbeateri</i>	Major Mitchell's Cockatoo	V		Yes
<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet	V		
<i>Neophema pulchella</i>	Turquoise Parrot	V		

Scientific Name	Common Name	NSW Status	Commonwealth status	Considered in 2008 EA
<i>Neophema splendida</i>	Scarlet-chested Parrot	V		Yes
<i>Pezoporus occidentalis</i>	Night Parrot	E	E	
<i>Polytelis anthopeplus monarchoides</i>	Regent Parrot (eastern subspecies)	E	V	
<i>Ninox connivens</i>	Barking Owl	V		
<i>Tyto longimembris</i>	Eastern Grass Owl	V		
<i>Tyto novaehollandiae</i>	Masked Owl	V		Yes
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V		
<i>Amytornis striatus</i>	Striated Grasswren	V		
<i>^Amytornis textilis modestus</i>	Thick-billed Grasswren (eastern subspecies)	E	V	Yes
<i>Calamanthus campestris</i>	Rufous Fieldwren	V		Yes
<i>Hylacola cautus</i>	Shy Heathwren	V		
<i>Pyrrholaemus brunneus</i>	Redthroat	V		Yes
<i>Certhionyx variegatus</i>	Pied Honeyeater	V		Yes
<i>Epthianura albifrons</i>	White-fronted Chat	V		
<i>Grantiella picta</i>	Painted Honeyeater	V		Yes
<i>Lichenostomus cratitius</i>	Purple-gaped Honeyeater	V		
<i>Manorina melanotis</i>	Black-eared Miner	E	E	
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V		
<i>Pomatostomus halli</i>	Hall's Babbler	V		Yes
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V		
<i>Cinclosoma castanotum</i>	Chestnut Quail-thrush	V		Yes
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V		
<i>Pachycephala inornata</i>	Gilbert's Whistler	V		Yes
<i>Pachycephala rufogularis</i>	Red-lored Whistler	E	V	
<i>Drymodes brunneopygia</i>	Southern Scrub-robin	V		
<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	V		Yes
<i>Stagonopleura guttata</i>	Diamond Firetail	V		Yes
<i>Ardea alba</i>	Great Egret		M	Yes
<i>Ardea ibis</i>	Cattle Egret		M	Yes
<i>Gallinago hardwickii</i>	Latham's Snipe		M	Yes
<i>Rostatula benghalensis</i>	Painted Snipe		M	Yes
<i>Apus pacificus</i>	Fork-tailed Swift		E, M	Yes
<i>Merops ornatus</i>	Rainbow Bee-eater		M	Yes
<i>Antechinomys laniger</i>	Kultarr	E		Yes
<i>Dasycercus cristicauda</i>	Mulgara	E	V	
<i>Dasypus maculatus</i>	Spotted-tailed Quoll	V	E	
<i>Ningaui yvonneae</i>	Southern Ningau	V		
<i>Sminthopsis macroura</i>	Stripe-faced Dunnart	V		Yes
<i>Isodon auratus auratus</i>	Golden Bandicoot (mainland)	E	V	
<i>Perameles bougainville fasciata</i>	Western Barred Bandicoot (mainland)	E	X	
<i>Macrotis lagotis</i>	Bilby	E	V	
<i>Phascogale cinerea</i>	Koala	V	V	
<i>Lasiornis latifrons</i>	Southern Hairy-nosed Wombat	E		
<i>Cercartetus concinnus</i>	Western Pygmy Possum	E		

Scientific Name	Common Name	NSW Status	Commonwealth status	Considered in 2008 EA
<i>Petrogale xanthopus</i>	Yellow-footed Rock-wallaby	E	V	Yes
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V		Yes
<i>Chalinolobus picatus</i>	Little Pied Bat	V		Yes
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V	V	
<i>Vespadelus baverstocki</i>	Inland Forest Bat	V		Yes
<i>Leggadina forresti</i>	Forrest's Mouse	V		Yes
<i>Leporillus conditor</i>	Greater Stick-nest Rat	E	V	
<i>Notomys cervinus</i>	Fawn Hopping-mouse	E		
<i>Notomys fuscus</i>	Dusky Hopping-mouse	E	V	Yes
<i>Notomys longicaudatus</i>	Long-tailed Hopping-mouse	E	X	
<i>Pseudomys australis</i>	Plains Rat	E	V	
<i>Pseudomys bolami</i>	Bolam's Mouse	E		Yes
<i>Pseudomys desertor</i>	Desert Mouse	E		
<i>Pseudomys gouldii</i>	Gould's Mouse	E	X	
<i>Pseudomys hermannsburgensis</i>	Sandy Inland Mouse	V		Yes
<i>Rattus villosissimus</i>	Long-haired Rat	V		Yes
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	V		Yes
<i>Maccullochella peelii</i>	Murray Cod		V	Yes

NSW Threatened Species Conservation Act 1995

Commonwealth Environment Protection and Biodiversity Conservation 1999

APPENDIX B COMMUNITY SURVEY

AGL Silverton Wind Farm EPC deferment survey about potential impacts to Silverton community caused by the delay and uncertainty around the project.

Approximately 41 surveys were distributed to the Silverton community and to the Silverton Community Consultative Committee members on 9 August 2013. The survey focussed on three questions around tourism, local business and farming business. Eight responses were received: three online and five via post, by 30 August 2013. The verbatim responses and are listed below:

Q1. Tourism

Implications of the project's delay on tourism?

Low (7 responses)

Moderate

High

Very high

Comments:

- 1. While there is no project, our tourism numbers will remain the same, hence no impact. If the project goes ahead, indications are that many tourists will not return to Silverton.*
- 2. Majority of tourists visit the area around Silverton to experience the wide open untouched landscape.*
- 3. But the implication will be very 'high' when the project starts things will go on as normal for now while the project is on hold.*
- 4. 80% of tourists I have asked feel they should be put out of sight spoiling natural beauty of the country side 21kms from Silverton township.*
- 5. Don't see that it will make any difference.*
- 6. The project has minimal impact on the Silverton and Broken Hill tourism industry.*
- 7. Silverton is already a tourism hive, and a large percentage of the population do not want this project, with the uncertainty of the disruption, noise and visual impact.*

Q2. Local business

Implications of the project's delay on local business?

Low (3 responses)

Moderate

High (2 responses)

Very high (2 responses)

Comments:

1. *None.*
2. *No project, no impact. Silverton's businesses are all tourism based.*
3. *Free flow of traffic – no oversized vehicles clogging roads. How many businesses are expecting profits from the project??? 1 out of 15.*
4. *Local businesses rely on tourism, whilst the project is on hold there will be no interruptions 'good'.*
5. *In uncertain 'economic times' businesses are relying on any of these large projects.*
6. *Work.*
7. *Nil.*
8. *Local business like many others in the country are struggling, the cash injection from this project will have a huge impact on Broken Hill's economy.*
9. *With the downturn of mining Broken Hill is in need of an economic boost, this project is short term, 2 years in the building, could assist Broken Hill's economyaccommodation, labour and other services.*

Q3. Farming business

Implications the project's delay may have on farming businesses in the area?

Low (3 responses)

Moderate (2 responses)

High

Very high (1 response)

Comments:

1. *Nil.*
2. *No project, we don't want to have to worry about the impact it might have on our horses.*
3. *Obviously a lack of extra income per blade!!!*
4. *Nil.*
5. *They will continue to run their businesses, stations on an ongoing process. No difference.*
6. *The wind has direct influence on farming in our region or this location.*
7. *The only implication is the project being highlighted for nearly seven years with the unknown implication of having a special purpose lease (never indoctored before) sitting over the farming business, where the area is used or not for the project and whether this will affect the land valuations and the privacy that is part of living in this isolation.*

Q4. Please suggest other implications the project delay will have on the Silverton community:

Seven responses:

1. *With the project delayed, many people feel they can relax and not worry about the possible effects, if ever, just for a little while. A number of people are stressed about the project, but feel powerless to speak up or take action.*
2. *None that we're aware of.*
3. *People in the community can get on with their lives and hopefully there will be no extension granted so we can live in peace.*
4. *Uncertainty causing health problems.*
5. *Business will go on as usual.*
6. *The wind farm delay will have no impact on Silverton.*
7. *Generally people are just sick of this project's continuous uncertainty after nearly 7 years hanging around.*

Q5. Any other comments:

Five responses:

1. *AGL should not be given an extension to the application/project. It was stated by Neil Cooke at the first CCC meeting that the Dept had categorically stated that no more extensions would be granted to this project. After over six years of dealing with this project, and the companies involved, this community should be left in peace to get on with our respective lives. The waiting and uncertainty is weighing heavily on many people.*
2. *Unfortunately I can't think of anything positive.*
3. *The whole wind farm turbines should be put out of sight. Not against them, but unusual impact will be disturbing.*
4. *Personally don't have a problem, fully agree with alternative energy, bring it on.*
5. *Surely a major company of 175 years could make a commitment either way to put an end to all this human up and downs, and AGL already have had one extension, with their representative quoting that no more extensions would be granted? SA are moving forward with their wind farms on the news this week....so let the Aussie prevail....let's be fair dinkum either way and put this to rest.*

Figure B.1: Community survey summary

Respondents were asked to score the expected level of impact of the project's delay on each issue. The number of responses in each category is stated.

