Executive Summary

Introduction

Coopers Gap Wind Farm Pty Ltd, a subsidiary company of AGL Energy Limited (AGL), proposes to develop the Coopers Gap Wind Farm (the Project) with an installed capacity of up to 460 megawatts (MW) and a maximum of 115 wind turbines, although the final number of turbines will be dependent upon the MW output of the wind turbine selected. The Project will connect to the Western Downs to Halys 275 kV transmission line, recently completed by Powerlink.

The Project is located approximately 180 km north-west of Brisbane, between Dalby and Kingaroy, near Cooranga North (Figure 1). The Project falls within the jurisdiction of the South Burnett Regional Council and the Western Downs Regional Council Local Government Areas.

Project background

AGL acquired the Project from Investec Wind Holdings Pty Ltd, a subsidiary of Investec Bank Pty Ltd in December 2008. Prior to AGL acquiring the Project, Investec Wind Holdings Pty Ltd had commissioned a number of technical studies and investigations into the potential impacts of the Project.

An Initial Assessment Report was released 24 March 2011 that collated the findings of a number of technical studies, including findings from the previous 2008 studies where relevant to the Project at the time. The Initial Assessment Report identified an initial turbine layout and Project Site, and provided an analysis of potential environmental impacts and mitigation measures to minimise or prevent those impacts. Consultation was subsequently undertaken in accordance with the Guidelines for Public Consultation Procedures for Designating Land for Community Infrastructure, with submissions invited on the content of the 2011 Initial Assessment Report.

Following the completion of the Initial Assessment Report submission period, submissions from Government agencies, stakeholders and the public were received and informed the preparation of a Revised Assessment Report for the Project. At this time, AGL decided not to progress the Revised Assessment Report for public consultation until a decision was made by the Australian Government on the Renewable Energy Target (RET).

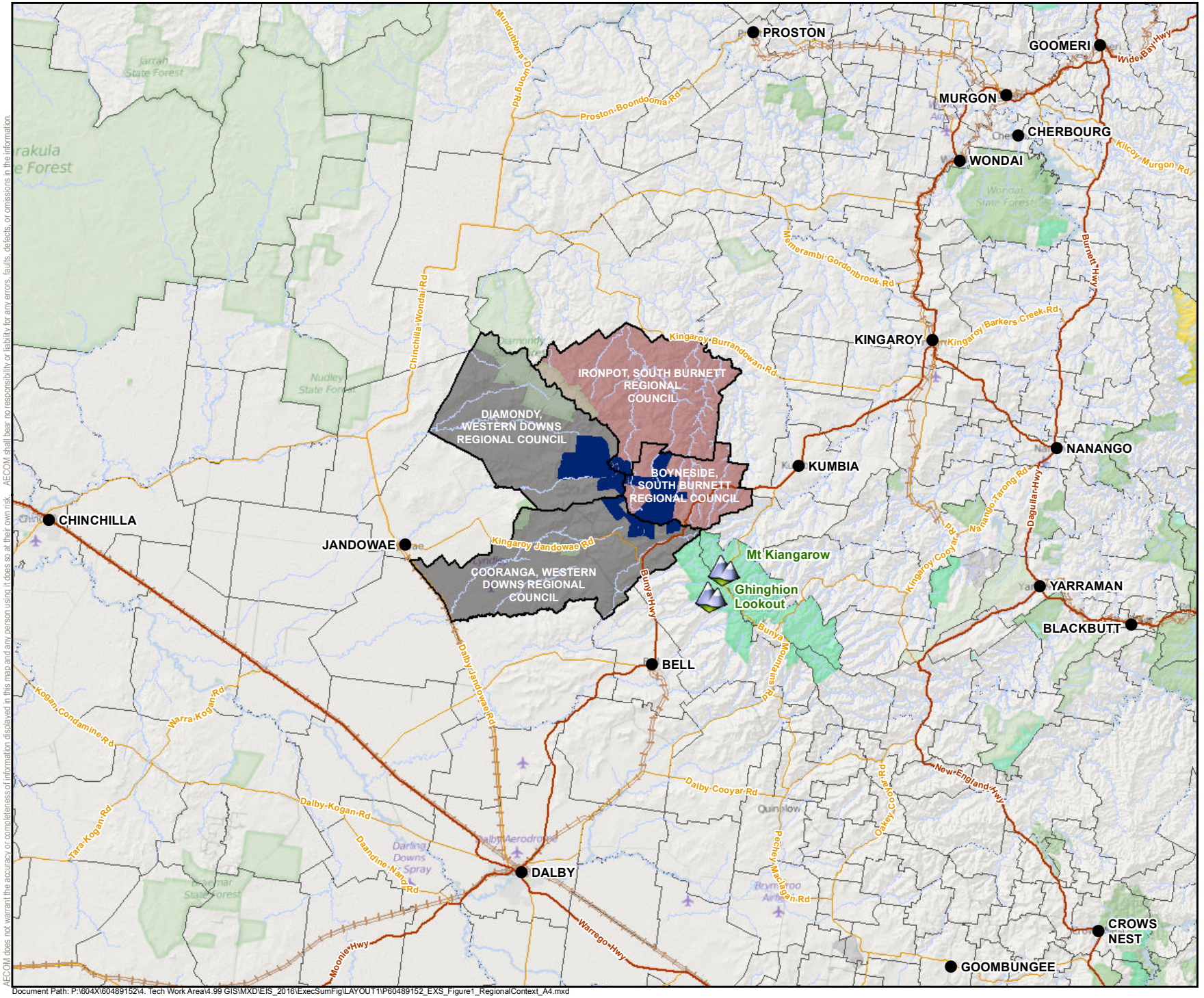
In June 2015, a reduced 2020 large scale gigawatt hour (GWh) target of 33,000 GWh was legislated. The Project is now seeking an assessment of the Environmental Impact Statement (EIS) by the Coordinator-General under the Queensland *State Development and Public Works Organisation Act 1971*.

Project description

The Project layout provides the proposed location of the wind turbines and associated wind farm infrastructure, which has been used as the basis for the Project Site (Figure 2). The Project Site will essentially be the bounds within which AGL must locate wind turbines, access roads, transmission lines and other associated infrastructure during the detailed design stage of the Project. Key wind farm generation and turbine specifications are outlined below.

Project feature	Statistic
Wind farm generation capacity	Up to 460 MW*
Turbine rating	2.5 - 4 MW
Number of turbines	Up to 115
blade tip height	Approximately 180 m
rotator diameter	Approximately 140 m

*The actual output of the wind farm will depend on the size and type of turbine chosen during the detailed design phase. Regardless of the size of the wind farm generation capacity, the Project will still need to comply with the Queensland Wind Farm State Code and supporting Planning Guidelines, particularly in relation to acoustic amenity and setback criteria. The maximum specifications listed in the table provides flexibility for any innovation in turbine design between now and the time of detailed design and construction.



AGL Energy in action.

AECOM

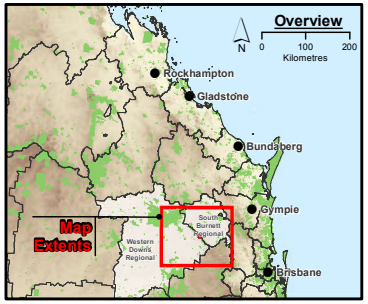
DATUM GDA 1994, PROJECTION MGA ZONE 56

0 5 10 Kilometres

1:700,000 (when printed at A4)

Legend

- Study Area
- Locality
- Watercourse (stream order 3 to 8)
- Highway; Freeway
- Main Road
- Railway
- Suburb
- Suburbs that intersect the study area (South Burnett Regional Council)
- Suburbs that intersect the study area (Western Downs Regional Council)
- Forest Reserve
- National Park
- State Forest



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COOPERS GAP WIND FARM
ENVIRONMENTAL IMPACT STATEMENT

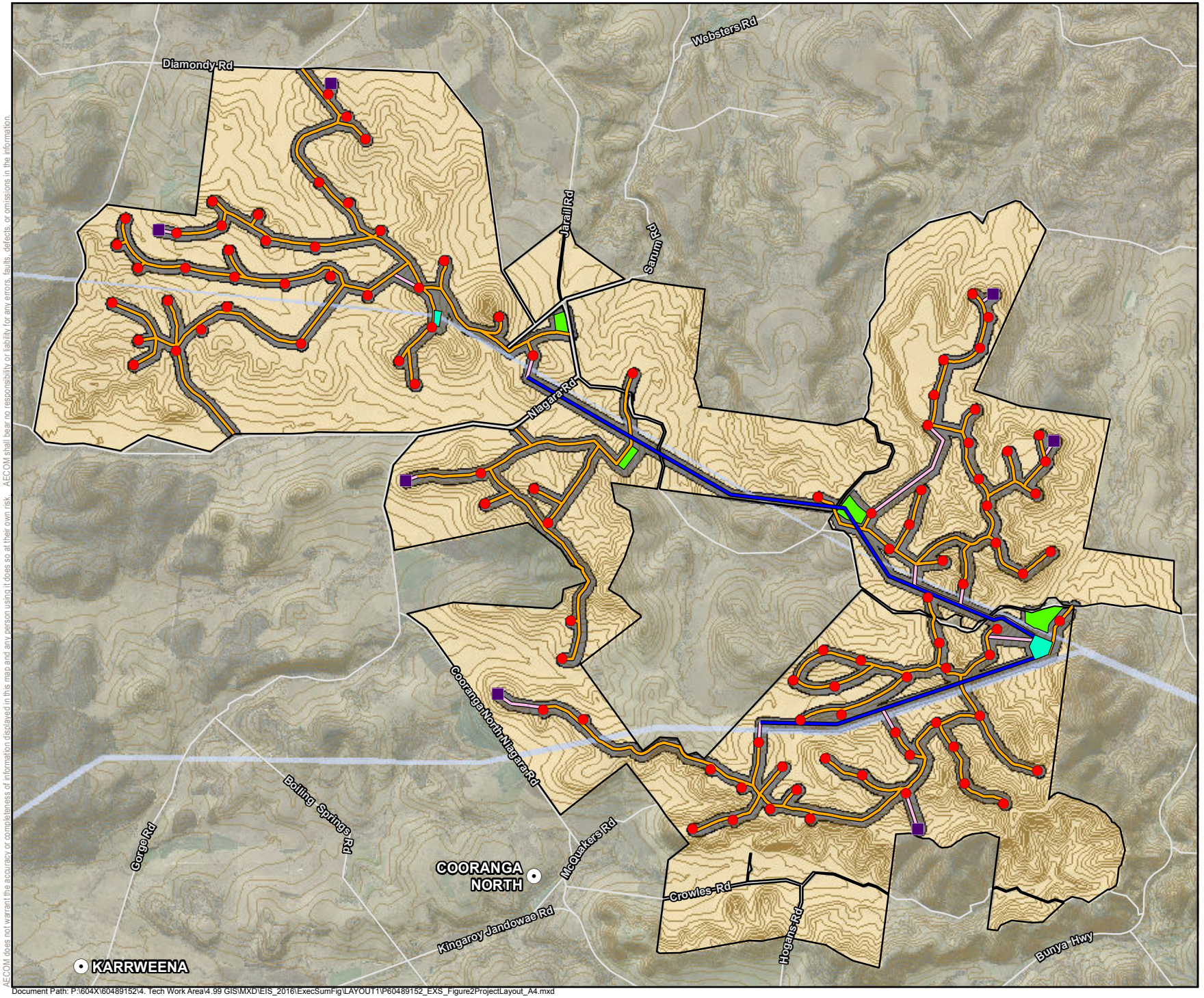
REGIONAL CONTEXT

PROJECT #:	60489152
CREATED BY:	BM
LAST MODIFIED:	BM: 5/09/2016
VERSION:	1

Figure 1

A4 size

Document Path: P:\604X\60489152\4. Tech Work Area\4.99 GIS\MXD\EIS_2016\ExecSumFig\LAYOUT1\P60489152_EXS_Figure1_RegionalContext_A4.mxd



AGL Energy in action.

AECOM

DATUM GDA 1994, PROJECTION MGA ZONE 56

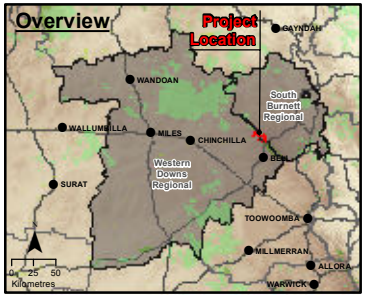
0 1 2

Kilometres

1:80,000 (when printed at A4)

Legend

- Project Site
- Study Area
- Locality
- Turbine
- Met Masts
- Proposed Service Road / Cable
- Proposed Underground Cable
- Proposed 33kV Overhead Cable
- Contours 10m
- Road
- Existing High Voltage Transmission Line Easement
- Proposed Substation
- Proposed Laydown Areas



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COOPERS GAP WIND FARM
ENVIRONMENTAL IMPACT STATEMENT

PROJECT LAYOUT

PROJECT #:	60489152
CREATED BY:	BM
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VERSION:	1

Figure 2

Document Path: P:\604X\60489152\4. Tech Work Area\4.99 GIS\MXD\EIS_2016\ExecSumFig\LAYOUT1\P60489152_EXS_Figure2ProjectLayout_A4.mxd

A4 size

The land available for development (the Study Area) covers approximately 10,200 ha (the combined areas of all participating properties), with the Project Site (land where the Project infrastructure will be located, allowing for micro siting) occupying a smaller area within the Study Area; approximately 2,048 ha.

The Project Site represents approximately 20% of the Study Area. However, the construction footprint of the Project will be much less (approximately 360 ha). The operational footprint will occupy approximately 100 ha. Land not occupied by infrastructure following the construction and rehabilitation period will continue to be used for rural and agricultural purposes.

Legislation and guidelines

As a renewable energy development, the Project is aligned with a number of international, national, state and regional/local agreements and policies that are based on responding to the threat of climate change and the forward development of renewable energy infrastructure.

The Project has been declared a 'coordinated project' by the Coordinator-General for which an EIS is required under section 26(1)(a) of the *State Development and Public Works Organisation Act 1971*.

The Project will be developed in accordance with applicable Commonwealth and State legislation and will seek to achieve the outcomes sought by various international, national, regional and local policies.

Community consultation

Community consultation and engagement is a fundamental part of the planning process. Since becoming proponent of the Project in 2008, AGL has undertaken community consultation and engagement activities for the Project in accordance with relevant guidelines and AGL's broader community engagement strategic approach.

The following consultation events and activities have been undertaken to date:

- Community information "drop-in" sessions
- Guided tour to an operational wind farm
- Establishment of a Community Consultative Committee with regular meetings to discuss the latest developments with the Project
- Community newsletters
- Individual discussions with nearby landowners (participating and non-participating)
- Consultation with Western Downs and South Burnett Regional Councils
- Consultation with State Government Agencies
- Consultation with State and Federal members of parliament.

Community feedback from public consultation events has informed the layout of the Project and been considered within the technical assessments undertaken in this EIS.

Environmental Impact Statement objective and scope

The Project's Terms of Reference were established in July, 2016 and set out the mandatory requirements of an EIS, with matters identified as either critical (requiring detailed treatment) or routine (detail proportional to the risk or magnitude of impacts).

The EIS has been prepared to consider the potential direct and indirect environmental, social, and economic impacts associated with the development and operation of the Project. Mitigation measures are provided to avoid or minimise potential impacts to an acceptable level.

The EIS has been developed to provide information for all stakeholders, relevant local governments and public sector entities, as well as other affected or interested bodies and/or parties.

Summary of Environmental Impact Statement findings

The EIS considers the critical and routine matters as determined by the Terms of Reference for the Project. Critical matters are those that may reasonably be expected to have one or more of the following characteristics:

a) a high or medium probability of causing serious or material environmental harm or a high probability of causing an environmental nuisance

b) considered contentious in the public domain, for example, has been the subject of extensive media coverage and/or there is a public perception that an activity has the potential to cause serious or material environmental harm or an environmental nuisance (regardless of the likelihood of occurrence).

Routine matters are those considered to be relevant to the Project, but with the level of detail proportional to the risk or magnitude of impacts.

An overview of the potential environmental impacts and their mitigation measures have been summarised in the sections below.

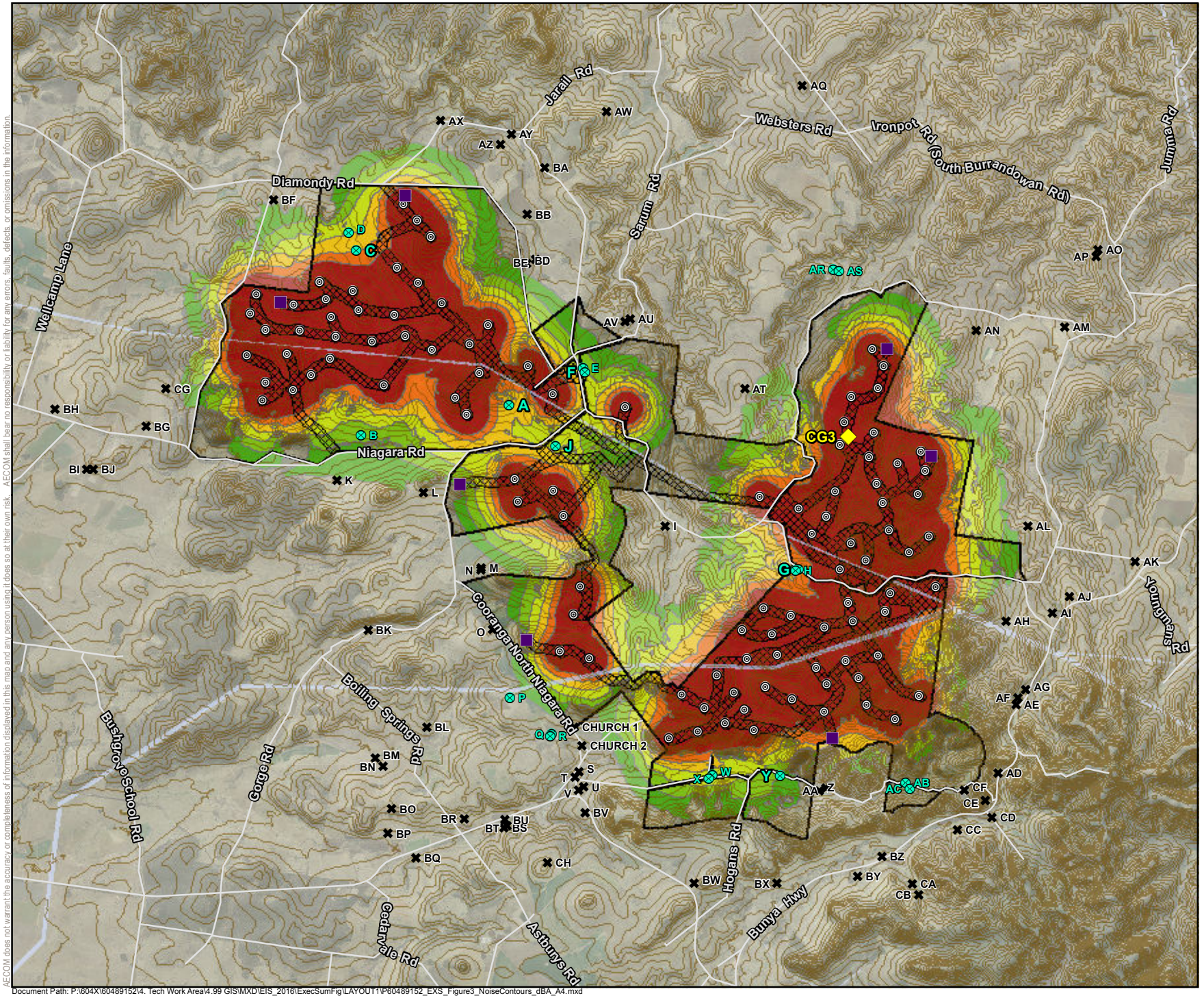
Critical Matters

Noise and vibration

A noise impact assessment was conducted for the operation of the Project in general accordance with the requirements of the Queensland Wind Farm State Code and supporting Planning Guideline. Operational noise limits were defined from the acceptable outcomes of the Queensland Wind Farm State Code and background noise levels measured on site prior to construction of the Project.

A noise model of the Project Site was created to predict noise levels at the nearest sensitive receptors to the Project. A noise-compliant wind turbine layout was generated and has formed the basis of the Project Site (Figure 3). The noise predictions demonstrate the noise limits are expected to be complied with during operation of the Project. On this basis, the current 'noise-compliant' wind turbine layout can be considered to protect the existing environmental values in the area from impacts by noise and vibration from the Project.

Compliance measurements will be undertaken at a selected number of the potentially most affected sensitive receivers following the commissioning of the Project. In lieu of a compliance methodology within the Queensland Wind Farm State Code, a methodology has been proposed in the noise impact assessment. Testing will be undertaken once all noise sources associated with the Project are in operating mode, i.e. all turbines have been switched on and are operating correctly.



AGL Energy in action.

AECOM

DATUM GDA 1994, PROJECTION MGA ZONE 56

0 1 2 Kilometres

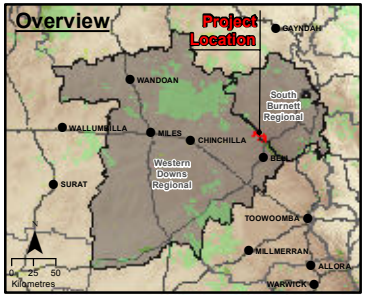
1:110,000 (when printed at A4)

Legend

- Project Site
- Study Area
- Turbines
- Participating Landowners
- Non-Participating Landowners
- Existing Met Mast used in noise modelling
- Met Masts
- Contours 10m
- Road

$L_{Aeq,10min}$ noise levels at 4 m above the ground (reference wind speed: 10 m/s at hub height)

- ≤ 37 dB(A)
- ≤ 39 dB(A)
- ≤ 41 dB(A)
- ≤ 43 dB(A)
- ≤ 45 dB(A)
- >45 dB(A)



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COOPERS GAP WIND FARM
ENVIRONMENTAL IMPACT STATEMENT

$L_{Aeq,10MIN}$ NOISE CONTOUR MAP

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Figure 3

A4 size

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Landscape and visual

There are few landscapes in which a wind farm will not introduce a new and distinctive feature. In order to perform their function effectively, wind turbines are likely to be tall and frequently located in open or elevated landscapes. Consequently they are difficult (virtually impossible) to conceal. Accordingly, all wind farms will result in some significant changes to the landscape and visual resource due to their size and prominence.

Even the most well-sited and designed wind farms result in substantial changes to the existing environment. The key issues in relation to landscape and visual amenity are the changes in the character of the landscape close to the Project Site and visual impacts on individual properties nearest the Project (Figure 4).

In comparison with other, well-established forms of development in the countryside (e.g. infrastructure associated with arable farming and grazing industries), wind turbines are relatively unfamiliar, prominently vertical and have the unique characteristic of movement. Individually or in groups, they will be distinctive features in the landscape. However, the anticipated landscape and visual impacts of the Project need to be considered in parallel with a multitude of matters, such as the following:

- The limited locational flexibility of wind farms (e.g. require windy locations, feasible connection to the grid and/ or supply network) and the need to find a balance between maximising energy capture whilst minimising impacts (i.e. siting can be influenced by non-operational factors, including local landscape characteristics)
- Although the Project Site comprises a strong rural character with a sense of remoteness and tranquillity, it is a sparsely-populated location, therefore limiting the volume of visual receptors
- The residual loss of landscape features (e.g. mature vegetation) required as a result of installing the wind farm components within the Project Site is likely to be relatively small, and the turbines and associated infrastructure will be situated to avoid vegetation wherever possible
- Modifications to the landform and drainage required as a result of installing the wind farm components within the Project Site (e.g. levelling of land and an increase in impermeable surfaces in a rural landscape) is likely to be minimal
- The existing site has a history of modification for farming practices (including vegetation clearance and landform modifications) and already contains 275 kV transmission line infrastructure.

In terms of impacts to scenic amenity, although the Project is likely to be visible from northern elevated and/or exposed parts of the Bunya Mountains National Park, there are no formal walking tracks through this part of the National Park and the Project will not fundamentally alter the reasons for which this national asset was designated. The turbines are unlikely to be visible from the key walking tracks and associated lookouts within the northern part of the National Park that typically look westwards (e.g. Mt Kiangarow and Ghingion), and lookouts in the southern part of the National Park also typically look westwards (e.g. Barker Creek and Pine Gorge).

Existing view from Viewpoint 3: North westerly view from Niagara Road East

Photomontage view from Viewpoint 3: North westerly view from Niagara Road East

Shadow flicker

Shadow flicker is the term used to describe the casting of a moving shadow over neighbouring areas. This may occur under certain combinations of geographical position and time of day, when the sun passes behind rotating blades of a wind turbine. When viewed from a stationary position, the moving shadows cause periodic flickering of the light from the sun, giving rise to the phenomenon of shadow flicker.

The assessment of theoretical shadow flicker durations shows that seven sensitive receptors are predicted to experience some of level of theoretical shadow flicker within 50 m of the receptor location. Six sensitive receptors are predicted to be affected by theoretical shadow flicker durations greater than the Queensland Wind Farm State Code and supporting Planning Guideline recommended limits of 30 hours per year or 30 minutes per day within 50 m of the receptor location.

Approximation of the degree of conservatism associated with the worst-case results has been conducted by calculating the possible reduction in shadow flicker duration due to cloud cover. The results of this analysis show that five sensitive receptors are predicted to experience actual annual shadow flicker durations within 50 m of the sensitive receptor location that are in excess of the 10 hour limit recommended in the Queensland Wind Farm Planning Guideline.

All sensitive receptors for which the modelling of predicted actual annual shadow flicker indicates exceedances of the limit are participating landowners. The calculations of the predicted actual shadow flicker duration does not take into account any reduction due to turbine orientation, low wind speed, vegetation or other shielding effects around each building in calculating the number of shadow flicker hours. Therefore, the values presented may still be regarded as an overly conservative assessment.

If shadow flicker presents a problem, mitigation strategies to reduce the duration of shadow flicker experienced at a sensitive receptor can include the installation of screening structures or planting of trees to block shadows cast by the turbines, or the use of turbine control strategies which shut down turbines when shadow flicker is likely to occur.

AGL will consult with landowners hosting wind turbines on their properties who may experience shadow flicker impacts to identify feasible and reasonable management and mitigation measures.

Electromagnetic interference

Broadcast towers and transmission paths around the Project were investigated to see if electromagnetic interference (EMI) would be experienced. This investigation considered fixed point-to-point links, fixed point-to-multipoint links, other license types, emergency services, meteorological radar, trignometrical stations, Radio Frequency Identification (RFID), Citizens Band (CB) radio, mobile phones, wireless internet, satellite television and internet, radio broadcasting and television broadcasting. No impacts on telecommunications systems were identified through consultation with relevant stakeholders.

Point to multipoint type fixed licences are located near to the Project Site. The nearest licence is at Mt Mowbullan near Wengenville, around 17.5 km south east of the Project, and is operated by the Bureau of Meteorology. Consultation with potentially affected operators of point to multi-point type fixed licences in the vicinity of the Project has been undertaken. For the majority of the licenses that were considered, either the operator responded to indicate that they do not foresee any interference to their services from the Project, or the assessment determined that the station was sufficiently distant from the Project that interference is unlikely.

There are no foreseeable impacts to other licence types, emergency services, meteorological radar, trigonometrical stations or radio-frequency identification systems.

Digital television signals could experience potential interference, although interference is typically limited to around five kilometres from the broadcast transmitter and is a function of the visibility of the wind turbines and that transmitted from the receptor.

There is low potential for impacts to occur to CB radio service and mobile telephone reception. However, should impacts arise, this could easily be mitigated by moving a short distance in order to improve signal quality. Current mobile telephone reception in the area around the Project is variable and in some instances extremely marginal and the presence of the Project would not be expected to worsen the existing conditions.

FM signals may be susceptible to interference from wind turbines which could result in potential distortion of the FM signal. In the unlikely event that this occurs, this could be offset by the installation of a high-quality antenna.

Aviation

The risk to aviation operations in the vicinity of the Project has been determined as being low. However, the height of the proposed wind turbines (approximately 180 m) will mean that the tips of the blades will penetrate navigable airspace. There is also some evidence that low level military jet operations could occur in the area. Consultation with CASA, AirServices Australia and the Department of Defence is ongoing to determine the potential risk to aviation operations and to identify appropriate risk mitigation (which could include obstacle lighting, marking of met masts and/ or other risk mitigation strategies as appropriate).

Hazard, health and safety

A preliminary hazard assessment (PHA) has been undertaken to determine the potential risks to people and property that may be associated with the Project.

Minor quantities of hazardous substances will be stored on the Project Site during the construction and operation of the Project. The hazardous substances may pose an acute risk to people, property and the environment due to their chemical or physical properties. However, the monitoring of hazardous substance use and storage, through the implementation of standard hazard and risk procedures, is expected to adequately address the potential risk posed by the utilisation of these substances.

The Project Site is situated within land identified to have a medium to very high level of potential bushfire hazard due to the nature of the surrounding environment. Prior to construction, a Bushfire Management Plan will be prepared in consultation with relevant stakeholders following a detailed risk assessment to guide the mitigation requirements and site specific controls.

With the appropriate design and mitigation measures in place, the impacts to the Project following a bushfire event are considered to be low and the Project should have the ability to function after an event, should one occur. The local community will not be impacted by any temporary downtime following an event, as they are not directly dependant on the electricity supply from the Project.

The Project is not considered to present a significant hazard or risk to people or property following the application of relevant industry standards, practical mitigation, controls and management measures.

Socio-economic

The Project is expected to have a positive economic stimulus within the region including employment, income, business development and tourism within the surrounding area. No long-term impacts on land values are anticipated to result from the construction or operation of the Project.

A literature review of scientific, peer-reviewed publications does not provide any evidence that noise, shadow flicker or electromagnetic interference from wind farms has an adverse effect on human health. Therefore, it is not anticipated that the operation of the Project will cause adverse health impacts.

Being a relatively significant development within the region and the State, there is opportunity for the wider community to benefit from the Project through up-skilling and employment during construction and operation. From a regional, State and national perspective, the Project will contribute to the achievement of legislation and policy around renewable energy generation and ecologically sustainable development.

Land use and planning

A land use and planning assessment has been undertaken to describe and characterise the existing land use values that have the potential to be affected by the Project. This assessment has determined that the Project is largely aligned with relevant regional planning initiatives such as those outlined in the Wide Bay Burnett Regional Plan and the Darling Downs Regional Plan, through delivering ecologically sustainable development and renewable energy to the region.

Some changes to the rural amenity of the area are to be expected as a result of the Project (through the introduction of wind turbines in a generally undeveloped rural area), however it is not expected that this will cause a significantly adverse impact.

No significant adverse impacts upon existing agricultural activities in the area are expected. The Project presents an opportunity for the economic diversification of the community, which may promote the viability of existing rural enterprises and improve tourism within the area.

There are certain land use and planning impacts that may not meet a particular standard and cannot be fully mitigated. However, this is considered generally acceptable given the positive contribution to the ecological, social

and economic attributes of the area. The Project has been refined to take into account, and avoid where possible, areas of high ecological, natural, and biodiversity value.

Flora and fauna

The Project Site and Study Area have been assessed through desktop and on-site surveys to understand the likely impacts to flora and fauna and to determine the mitigation measures required to manage those impacts.

The Project is located in a highly cleared landscape where much of the original vegetation and habitat has been removed for grazing and cropping. The Project Site largely avoids areas of ecological significance, which has been achieved through a process of site verification and design refinement.

Decisions on the final location of infrastructure (micro-siting) during detailed design and construction will potentially allow for the further protection of species, habitat and features of localised conservation significance.

Impacts on threatened bat species and bird populations are not considered to be significant. However, it is recognised that there is the potential for occasional mortalities to occur. Ongoing monitoring during operation of the Project will help to determine whether further mitigation is required.

Transport

A traffic and transport assessment has been prepared with reference to the Guidelines for Assessment of Road Impacts of Development (DMR, 2006) to identify the Project's impact on State-controlled roads.

The traffic and transport assessment determined that the potential impacts on Queensland's road network during the construction phase are likely to be on pavement condition and/or to traffic operation.

During the construction phase, the assessment indicated that the potential impacts are likely to be along four roads: the Bunya Highway, Dalby-Jandowae Road, Kingaroy-Jandowae Road and Niagara Road.

Through the development of Traffic Management Plans (TMP), mitigation measures will be established for the Project to assist in minimising the extent of road traffic and pavement impacts. These plans will be prepared prior to the commencement of construction in consultation with the Department of Transport and Main Roads, regional councils and other relevant stakeholders and implemented as part of the Construction Environmental Management Plan (CEMP). Other management strategies such as a Driver Fatigue Management Plan and an Emergency Management Plan will also be implemented to minimise the potential for incidents.

During the operational phase, as the wind turbines are largely self-operating once constructed, the only impact on the road network is expected to be from the maintenance workforce. A small number of inspection and maintenance workforce trips are expected on a regular basis during the operational phase. However, the volumes of these trips (and consequent traffic impacts) are expected to be significantly less than during the construction phase.

Any residual impacts which may remain after the implementation of proposed mitigation measures are expected to be negligible and not significant over the construction period.

Routine Matters

Surface water and groundwater

The Study Area falls within the catchments of the Burnett and Condamine Rivers and is underlain by the sediments of the Great Artesian Basin (GAB). The catchments and the GAB are regulated under the *Water Act 2000* and have current Water Resource Plans and Resource Operation Plans which impose rigid operational conditions. The overall condition of the Burnett and Condamine Rivers catchments is considered moderate, with reach conditions varying from poor to very good.

The surface water assessment determined that potential impacts of stormwater discharges from the Project on surface water quality and quantity arise from a range of activities associated with the construction, operation and decommissioning phases. The assessment determined that the impacts associated with the Project could be appropriately managed by implementing a range of standard mitigation measures during the various phases of the Project. The Project is therefore not expected to have an adverse impact on the overall condition of the Burnett and Condamine catchments. Any impacts associated with the Project will be localised, temporary and reversible.

The Project is not expected to have a significant impact on the overall groundwater regime within the Study Area. Potential impacts associated with the Project are considered to relate to the extraction of groundwater for

construction purposes. The potential impacts of the Project activities on groundwater quality and quantity arise from a range of activities associated with the construction and operation phases. The assessment determined that the impacts associated with the Project can be appropriately managed by the implementation of a range of mitigation measures during the various phases of the Project.

The construction contractor will be responsible for developing and ensuring suitable procedures are in place to protect environmental values. This will include erosion and sediment control procedures, a Materials Handling Plan, and emergency response and spill response procedures. These procedures and plans will be contained within a site specific CEMP.

Soils, geology and topography

The Study Area is characterised by a number of ridgelines, predominantly orientated in a north-west to westerly direction. Generally, the proposed wind turbines are located along these ridgelines to maximise exposure to the wind resource within the area.

Cracking clay soils are common in the Darling Downs region and commonly form on basalt bedrock and characterise alluvium plains, which are predominant in the Study Area. These are commonly considered good agricultural soils, particularly for cropping land.

The prominent land use throughout the Study Area is rural and much of the Study Area is mapped as Class A and Class B land under the Agricultural Land Classification. To achieve the State interest, Class A and Class B land should be protected from fragmentation, inappropriate development and land degradation.

The layout of the Project has been developed so that existing property owners can continue agricultural uses in conjunction with the development and ongoing operation of the Project. Owners of properties containing the wind farm infrastructure are willingly involved in the Project and will continue agricultural activities on their properties. The physical footprint of wind turbines and access road infrastructure is relatively minor and will not cause significant severance of productive land. It is anticipated that the Project can co-function with existing agricultural practices.

An assessment into erosion risks as a result of the Project's activities determined that residual risks were low following the application of suitable mitigation and control measures.

Waste management

Generation of waste will occur throughout the construction, operation and decommissioning of the Project. Project activities will generate solid and liquid wastes which can be broadly classified as:

- Regulated waste: wastes that require specific controls or actions as defined by legislation. Listed, hazardous, regulated, controlled or trackable wastes typically have unique handling and disposal requirements in order to manage specific hazards associated with them
- General waste: wastes not defined as regulated waste under legislation. General wastes comprise putrescible wastes (easily decomposed, recyclable by composting) and non-putrescible wastes (not easily decomposed, may be recyclable)
- Recyclable waste: waste types that are able to be reconditioned, reprocessed or reused.

The construction phase is considered to generate the most potential for waste generation. Upon completion of construction, disturbed areas outside of the operational footprint will be reinstated. Operational activities will have reduced demand for workforce, material and transport, when compared with construction. Consequently, the operational phase of the Project is expected to generate significantly smaller volumes of waste to be managed.

AGL will use a hierarchical approach to waste management, from the most preferable (reduce, reuse or recycle wastes) to the least preferable (disposal), and prioritise waste management strategies to avoid waste generation. Where waste cannot be avoided, waste materials will be segregated by type for collection and removal (for processing or disposal) by licensed contractors.

Aboriginal cultural heritage

Four Aboriginal cultural heritage sites are recorded in the Study Area. A further nine recorded places, including grinding grooves and artefact scatters, are located within one kilometre of the Study Area. The small stone artefact assemblage within the Study Area suggests transient usage by male hunting parties, with the small flakes and backed blades associated with hunting tool repair dominating the collection. While there has been no detailed

exploration of pre-colonial Aboriginal life in the Study Area itself, research has indicated that low intensity use of the site began around 4300 years ago.

Given the extent of the Project Site, and the involvement of multiple Aboriginal Parties, a Cultural Heritage Management Plan (CHMP) under Section 7 of the *Aboriginal Cultural Heritage Act 2003* will be developed and negotiated with the relevant Aboriginal Parties prior to construction.

Historic (non-Aboriginal) cultural heritage

The region in and around the Study Area was first explored in 1827. The Study Area was initially opened for selection as a part of the New England pastoral district in 1839 and by the 1840s, colonial settlement had occurred approximately 25 km south west of the Study Area. By 1860, pastoralists were turning to cattle, primarily dairy, as there was less chance of disease and they were generally 'more suitable to the area'.

A search of Commonwealth, State and local heritage registers did not identify any recorded historical sites within the Study Area. The closest historical heritage site is the State and locally listed Wylarah Homestead, which is located approximately 10 km to the north of the Study Area.

The preferred mitigation measure for known Aboriginal and historic cultural heritage places is to avoid impact wherever possible. At present, all known heritage places and places of high archaeological potential lie outside of the areas affected by Project activities and so are considered unlikely to be impacted. To facilitate the identification of Aboriginal and historical cultural heritage, information will be incorporated into the general site induction. A process has been identified to stop work and recover material should it be found.

The Project is considered unlikely to cause a significant impact on known cultural heritage.

Sustainability and climate change

Wind electricity is one of the most technically advanced sources of renewable energy. Wind power is recognised as a clean energy source that can meet a percentage of Australia's electricity requirements with no operational greenhouse gas emissions.

A sustainable development and climate change assessment was undertaken to determine the potential greenhouse gas emissions that will be produced as a result of the construction phase of the Project. The greenhouse gas emissions from the construction phase will be emitted from fuel consumption, electricity consumption, stationary energy use and embodied energy from construction materials. Greenhouse gas emissions will be reduced, where possible, by raising awareness through staff inductions, implementing energy and fuel efficiency measures, and choice of materials.

The Project will have significant benefits, such as providing a clean, low emission energy source to meet future demand (while displacing equivalent megawatts in fossil fuel-based electricity), as well as broader sustainable development benefits relating to net environmental impact, energy security, and regional economic development.

The Project could supply power to service approximately 236,000 households or would be the equivalent to taking approximately 438,515 petrol cars off the road each year.

Conclusion

The Project is a renewable energy development that, if constructed, would help achieve the goals and targets around renewable energy and ecologically sustainable development contained within international, Commonwealth and State legislation, policy and agreements. The Project is also aligned with regional and local planning initiatives.

Wind farm infrastructure is the least expensive form of renewable energy, and experience (both internationally and within Australia) shows that wind farms are compatible with existing land uses. The EIS has determined that the Project is unlikely to have any significant adverse impacts on the natural environment or surrounding land uses. Any potential impacts are expected to be minor in nature and manageable through appropriate mitigation strategies.

The Project is also expected to produce benefits for the local community, including financial benefits for landowners, creation of locally-sourced jobs during the construction and operational phases, potential for local contractors to be involved in the Project, opportunities for the local accommodation and service sectors, and tourism associated with an operational wind farm.