Land Use and Planning – Summary of Key Outcomes

The proposed Development Site is approximately 4 km north of the township of Dalton. Land use immediately surrounding the Development Site is predominantly rural enterprises on large to medium size holdings.

The Development Site is located in an area that is zoned RU2 Rural Landscape, with parts of the Gas Pipeline (northern section) and Access Road, as well as the Gas Pipeline (southern section) zoned RU1 Primary Production. Zoning RU1 Primary Production and RU2 Rural Landscape, provide that "power generation" facilities are permissible with consent.

The proposal would result in changes to the land use of the development footprint itself as it is currently used primarily for agricultural purposes. An area of 183.26 ha (approximately 36 % of the Site) would form part of the Offset Area which would be conserved and managed appropriately (refer to **Chapter 13** for further details). The remainder of the Site would also be managed appropriately (refer to **Chapter 13** for further details). Therefore AGL considers that the land use change would be an overall positive one due to the higher conservation outcomes of the land use change from agricultural use and production to conservation.

Consideration was given to cumulative impacts with other major projects being undertaken or considered in the Upper Lachlan Shire Council area. The current major projects listed on the DoP register of major projects in the Upper Lachlan Shire Council area are all windfarms. The dominance of electricity generation projects is due to the presence of wind resources and infrastructure associated with electricity generation in the region.

These projects are located between 5 km and more than 20 km from the Dalton Power Project. These projects are in a range of stages from consideration of DGRs to operation having commenced. Timing of the projects for construction and operation (for those not having already commenced) is unknown and dependant on the respective proponents. Based on the distance between Dalton Power Project and other windfarm projects, potential differences in timing of construction between projects, and differences in key environmental impacts between gas fired generation and wind generation, there would not be a negative cumulative impact from the Dalton Power Project.

Mitigation measures detailed in this Environmental Assessment relate to the control of the development's impact on noise levels, air and water quality, traffic and transportation, visual amenity and other environmental matters. These mitigation measures would be implemented to ensure that the proposed Project is managed in an effective and efficient manner, with minimal impact on existing or possible future surrounding land uses.

Chapter 16 Land Use and Property Impacts

16.1 Introduction

This chapter describes the land use patterns present in the areas surrounding the proposed Dalton Power Project and assesses the potential impacts of the construction and operation of the proposal on adjoining land uses.

16.2 Existing Land Use – Development Site

The three farm holdings comprising the AGL Site currently operate as rural landholdings with sheep and cattle grazing. **Figure 4-1** shows the existing structures and land uses on the Development Site.

The Development footprint encompasses and traverses land which is zoned RU2 Rural landscape and RU1 Primary Production under the Upper Lachlan Local Environment Plan 2010.

16.3 Existing Land Use – Surrounding Areas

The Development Site is approximately 4 km north of the township of Dalton. Developments immediately surrounding the Development Site are predominantly rural enterprises on medium to large size holdings, with adjoining properties. The existing nine residences which are closest to the Development Site are identified in **Figure 12-1**.

16.4 Land Use Issues Arising From Consultation

Consultation with adjacent landowners as well as with the general community was conducted leading up to and during preparation of this Environmental Assessment as detailed in **Chapter 6** *Consultation*.

Surrounding land users predominantly graze livestock (mostly sheep) and no issues were raised during consultation that effect existing land uses, other than the poor condition of the Elms and Riverview properties regarding noxious weed infestations and the potential for further spread. It is noted that the proponent has commenced a noxious weed eradication program in consultation with Upper Lachlan Shire's Weed Officer and neighbouring property owners. It was also identified that one neighbouring landowner operates an extractive industry from their property and utilises Walshs Road occasionally for that purpose. This was not considered by the proponent or the neighbour to be impacted by the proposed Dalton Power Project.

No surrounding landowners consulted engaged in aerial fertilisation of their property in recent (or generally memorable) history, however this was carried out across part of the "Holmes" property a number of decades ago. This proved uneconomic, and the aerial spraying subsequently ceased..

16.5 Potential Existing Land Use Conflicts

16.5.1 Construction Phase Impacts and Mitigation Measures

The main potential for impacts of construction activities on surrounding land uses include:

- air quality;
- soils and geology;
- traffic flow effects;

- noise impacts; and
- flora and fauna.

The potential impacts of the construction phase of the proposed development on surrounding land uses are discussed in relevant chapters of the EA, including **Chapter 9** *Air Quality*, **Chapter 8** *Soils, Geology and Groundwater*, **Chapter 11***Traffic and Transport*, **Chapter 12** *Noise* and **Chapter 13** *Flora and Fauna*. The potential effects of the proposed construction activities on surrounding land uses are briefly summarised below.

Air Quality

A range of dust suppression measures and erosion and sedimentation controls would be implemented during the construction phase of the proposed power station. These controls would be incorporated in a construction soil and water management plan to be developed as part of the Construction Environmental Management Plan (CEMP).

Soils and Geology

A soil and water management plan would include procedures and controls to ensure that water runoff from construction activities is minimised, contained and disposed of appropriately (if required), and to prevent chemical spillages from construction equipment from entering water channels.

Traffic and Transport

Temporary upgrades or reconfigurations of the local road network may be required to facilitate over mass and over dimensional haulage of plant and equipment to the site during the construction phase. AGL are committed to ongoing consultation with the relevant local authorities regarding these requirements and would contribute financially towards these works as detailed in **Chapter 11**.

Noise

The construction of the proposed development is not expected to have significant noise impacts upon local residents. During the construction phase some localised and temporary noise impacts may occur. A preliminary assessment of noise during the construction phase shows no exceedances at the existing residential receivers. Implementation of noise mitigation measures to be included in a CEMP would minimise construction noise impacts.

Flora and Fauna

A Weed and Pest Management Plan, developed as part of the CEMP for the Site, would minimise the impacts of the development on flora and fauna during construction. The plan would include active control of feral animals (primarily foxes and rabbits). Implementation of these mitigation measures would ensure that the proposed Project would not have any impact on surrounding land use from a flora and fauna perspective.

16.5.2 Operation Phase Impacts and Mitigation Measures

The main potential for environmental impacts associated with the operation of the Project on surrounding land uses include:

- air quality;
- visual impacts;
- traffic flow effects;
- noise impacts;
- flora and fauna;
- water management;
- hazard; and

The potential impacts of the operational phase of the proposed power station on surrounding land uses are briefly summarised below but are discussed in greater detail in relevant chapters of the Environmental Assessment, including **Chapter 8** *Air Quality*, **Chapter 10** *Landscape and Visual*, **Chapter 11** *Traffic and Transport*, **Chapter 12** *Noise*, **Chapter 13** *Flora and fauna*, **Chapter 14** *Water Management* and **Chapter 18** *Preliminary Hazard Analysis.*

The proposal would result in considerable changes to the land use of the site itself as the site is currently used primarily for grazing. Approximately 5% of the Site would be utilised for the Dalton Power Project. Even so, the rural zoning of the site permits some non-rural uses. Land within the AGL Site Boundary is zoned RU2 Rural Landscape, with parts of the Gas Pipeline (northern section) and Access Road, as well as the Gas Pipeline (southern section) zoned RU1 Primary Production. Zoning RU1 Primary Production and RU2 Rural Landscape, provide that “power generation” facilities are permissible with consent.

The Project has a lifespan of 30 operating years. Operation of the Project is not likely to have a significant impact on surrounding land uses due to the operating hours (up to 15 % of the year) of the power station and the large buffer between the proposed plant and surrounding residences.

An area of 183.26 ha (approximately 36 % of the Site) would form part of the Offset Area which would be conserved and managed appropriately (refer to **Chapter 13** for further details). The remainder of the Site would also be managed appropriately (refer to **Chapter 13** for further details). Therefore AGL considers that the land use change would be an overall positive one due to the higher conservation outcomes of the land use change from agricultural use and production to conservation.

Air Quality

The results of the worst case dispersion modelling for local air quality showed that ground level concentrations of NO_2, PM_{10}, CO and SO_2 were below the NSW DECCW criteria; and VOC, including PAH were found to be below the NSW DECCW criteria. In conclusion, the assessment considered that the impacts on local air quality from this development would be minor and adverse impacts are unlikely for surrounding land uses.

Landscape and Visual

The Landscape and Visual Assessment concluded that the Project would have a low visual impact on people in areas surrounding the site due to a range of measures including:

- screening from existing trees and natural landforms;

- restricting the views to the stacks to upper portions of the stack structures;
- using materials and colours to minimise the visual contrast;
- lighting design which would avoid direct line of sight from residences that are located to the east and west of the site; and
- no visible emissions would be discharged from the turbine stacks.

The implementation of the above measures would minimise the impact of the proposed Project on surrounding land uses.

Traffic and Transport

The traffic and transport assessment found that the arterial road network can satisfactorily and safely accept the additional traffic generated by the proposed development during the construction, operational and maintenance phases.

Noise

No exceedances of operational noise have been predicted for the existing six residences. Mitigation measures are proposed that are not considered excessive and are considered to be relatively easily achieved. Further information with respect to design would be provided during the detail design assessment once the final selection of the turbine is complete.

Flora and fauna

Implementation of the offset strategy and mitigation measures for the Project would ensure that the overall biodiversity of the local area would be 'maintained or improved'.

A Weed and Pest Management Plan developed as part of the OEMP for the site would minimise the impacts of the development on flora and fauna during operation. The plan would include active control of feral animals (primarily foxes and rabbits). Implementation of these mitigation measures would ensure that the proposed Project would not have any impact on surrounding land use from a flora and fauna perspective.

Water

Mitigation measures would be employed to minimise the erosion of soils during construction such that discharge from the sedimentation pond would be through an appropriately designed dissipating structure to minimise soil erosion potential. Appropriately bunded areas would be established for storage of fuels, oils and chemicals and areas within the operational plant area would be appropriately drained so that surface runoff would be prevented from infiltrating directly onto the ground and from reaching the groundwater. Implementation of these measures would minimise adverse impacts on surrounding land uses.

Wastewater volumes have been estimated and management strategies developed to maintain zero discharge from the site except for part of natural surface flows and ensure minimal impact on surrounding land uses.

Hazard

Despite the conservativism built into the risk assessment, the results show that the risk associated with this development is very low. The proposed Project complies with the most stringent risk criteria stipulated by the DoP, are adhered to and therefore the Project does not pose issues for the surrounding landholders.

16.6 Potential Future Development

16.6.1 Current Land Use Zoning

Land within the AGL Site Boundary is zoned RU2 Rural Landscape, with parts of the Gas Pipeline (northern section) and Access Road, as well as the Gas Pipeline (southern section) zoned RU1 Primary Production. Zoning RU1 Primary Production and RU2 Rural Landscape, provide that "power generation" facilities are permissible with consent.

The Dalton Power Project falls within the definition of *"electricity generating works"* contained in the Upper Lachlan LEP 2010. Accordingly, the Dalton Power Project falls within the list of permissible uses of the zoning in the Upper Lachlan LEP 2010. The current zoning of surrounding areas permits activities such as agriculture, rural housing and open space.

16.6.2 Summary of Development Planning in the Region

The section provides a summary of the development planning in the region and addresses the following strategies, strategic reviews, and policies in the context of implications for the Project:

- Sydney to Canberra Corridor Regional Strategy 2006 – 2031.
- Upper Lachlan Strategy Plan 2020.

Sydney to Canberra Corridor Regional Strategy 2006 - 2031

The Sydney to Canberra Corridor Regional Strategy applies to all local government areas between the fringe of Sydney through to the Australian Capital Territory, and includes the Upper Lachlan Shire Council, which is where the Dalton Power Project is located.

The current population of the region is approximately 137,000, with both the northern and southern ends of the region experiencing high growth, reflecting their proximity to Sydney and Canberra. The Region's population is projected to be 183,350 by 2031, a growth of 46,350 people, requiring an additional 25,200 dwellings and 27,800 jobs.

The economy of the region is diverse, reflecting the range of agricultural landscapes, the growing population, key national transport links and the influence of Sydney and Canberra on large parts of the region. One of the challenges for the region is to maintain the rural character of the landscape whilst acknowledging other uses of rural land and the strategies contains policies and objectives that seek to achieve this balance.

Encouraging economic development relies on many factors, including industries establishing in the area. Gunning has been identified in the Strategy as a town generally reliant on higher order centres such as Yass or Goulburn for employment opportunities. The Project is consistent with the aim and

objectives of the Strategy and is an example of new industry in the area that would provide employment opportunities for the local workforce during both the construction and operational phases of the Project.

Upper Lachlan Shire 2020 Vision Strategy

The objective of developing the Upper Lachlan Shire 2020 Vision Strategy ("the Strategy") was to guide the ongoing sustainable management of land use decisions to 2020. As part of the research for developing the Strategy, investigations into the suitability and capability for growth in the Upper Lachlan LGA were undertaken. The Strategy will form the basis of planning and land use decisions up until 2020.

The agriculture, forestry and fishery industries are the largest employers in the Upper Lachlan LGA, with nearly a third of the region's population employed in those sectors.

Consultation with local communities identified some ideal future directions for the area. For the Dalton area, the future direction included a need for the "integration of people, population, rezoning and advertising to create a vibrant community heritage town with future sustainable industries". Respondents in the Gunning area asserted that new industries which complement existing businesses should be encouraged to the area. One of the primary drivers behind this is providing employment opportunities within the area. Respondents also emphasised that any proposed industrial sites should be located outside of the town with a buffer zone to protect residential amenity, aesthetics and noise levels.

The Strategy identified a number of planning objectives for the Upper Lachlan Shire. These were Environmental (including water quality, protecting native flora and fauna, weed control and retaining agricultural lands); Social (including providing for a variety of land uses and preserving the rural landscape and character of the area); and Economic (including promoting development in areas of low agricultural value and providing opportunities for employment growth). There was also an emphasis on land use harmony. A suggested solution for conflicting land uses was to use natural and man-made barriers to create buffers between residential development and incompatible land uses.

Population growth is one of the goals for the Upper Lachlan Shire. Key areas that would promote growth, as identified in the Strategy include attracting new industry to the area, and the associated job creation. The proposed development of a gas-fired power station at Dalton is in keeping with these aims. It also does not compromise the goals for the retention of Gunning as rural town centre, as it will not impact on the Village zone.

16.7 Potential Future Land Use Conflicts

AGL is not aware of any future planned land use or zoning changes which may apply to the immediate vicinity of the Project. While a number of effects have been identified as part of this Environmental Assessment, none of them will negatively impact surrounding land owners, nor will they have an effect on those land owners being able to continue using their land for rural purposes.

AGL has committed to implementing mitigating measures identified in this Environmental Assessment.

Chapter 16 Land Use and Property Impacts

16.8 Cumulative Impacts

Consideration was given to other major projects being undertaken or considered in the Upper Lachlan Shire Council area. Projects currently listed (website access 4 March 2011) on the DoP register of major projects are presented in **Table 16-1**.

Table 16-1 Summary of current major projects in the Upper Lachlan Shire Council area

Project	Proponent	Proximity to Dalton Power Project	Status
Epuron Rye Park Windfarm	Epuron	Approximately 5 km west	DGRs issued.
Crookwell 3 Windfarm	Crookwell Development P/L	More than 20 km north east	DGRs issued.
Crookwell II Windfarm	Crookwell Development P/L	More than 20 km north east	Approved 2005.
Gullen Range Windfarm	Gullen Range Windfarm Pty Ltd	More than 10 km north east	Approved 2010.
Cullerin Windfarm	Origin Energy	More than 5 km north east	Approved 2007. Commenced operation 2009.
Bango Windfarm	Bango Windfarm Pty Ltd	More than 20 km north east	DGRs issued.
Rugby Windfarm	Suzlon Energy Australia & Windlab Developments Pty Ltd	More than 20 km north east	DGRs issued.

The current major projects in the Upper Lachlan Shire Council area are all windfarms. The dominance of electricity generation projects is due to the presence of wind resources and infrastructure associated with electricity generation in the region.

These projects are located between 5 km and more than 20 km from the Dalton Power Project. These projects are in a range of stages from consideration of DGRs to operation having commenced. Timing of the projects for construction and operation (for those not having already commenced) is unknown and dependant on the respective proponents.

The cumulative impact of the Dalton Power Project with these projects considered the following:

- Construction:
  - Distance between Dalton Power Project and other windfarm projects.
  - Potential differences in timing of construction between projects.
  - Potential for cumulative impacts relating to construction traffic and socio economic depending on the timing of construction of the other projects, and impacts to flora and fauna.
- Operation
  - Differences in key environmental impacts between gas fired generation and wind generation.
  - Potential for cumulative impacts relating to operation noise, visual.

16.8.1 Construction Cumulative Impacts

Traffic

Cumulative construction traffic impacts would depend on the convergence of timing of construction periods for the above projects. Construction traffic to the Rye Park, Crookwell, and Gullen Range windfarms is likely to utilise Hume Highway and then turn off at the relevant local roads. It is assumed traffic for Crookwell and Gullen Range windfarms would leave the Hume Highway before traffic for the Dalton Power Project. It is assumed that traffic for the Rye Park windfarm would continue beyond the turn off for Dalton. The traffic route access for these projects on the local roads would therefore be likely to be different beyond the turnoff from the Hume Highway. Therefore, should the construction timing converge, the cumulative traffic impact of the projects would be along the Hume Highway.

The Hume Highway is classified National Highway 31 and State Highway 2. The Hume Highway is part of the Auslink National Network and is a vital link for road freight transport between Sydney and Melbourne. For approximately 92 % of its length in NSW and in close proximity to Gunning, the Hume Highway consists of a dual carriageway (two lanes in each direction) with a posted speed limit of 110 km / hr.

Therefore it is considered that as the Hume Highway is a vital link for road freight transport that it is designed in a manner that would accommodate traffic for all four projects should construction timing converge.

Flora and Fauna

It is likely development of these projects would all require some level of vegetation clearing. Each Project would be required to consider the local and regional impacts of vegetation clearing to ensure the principles of ‘maintain and improve’ are followed. To minimise the potential impact of the Dalton Power Project, the Flora and Fauna Assessment contains detailed recommended mitigation measures. These measures include management plans for the construction and operational stages of

the project, clearing strategies, habitat replacement plans and rehabilitation and land management strategies. In addition to these measures, in order to offset the potential impact of the Project on Box Gum Woodland and Natural Temperate Grassland, AGL propose to offset the following:

- 77.57 ha of Box Gum Woodland within the AGL owned lands adjoining the development footprint, and
- 80.71 ha of Native Temperate Grassland and 24.97 ha of exotic pasture that has the potential, with appropriate management to meet the criteria for recognition as Natural Temperate Grassland within the AGL owned lands adjoining the development footprint.

Implementation of the offset strategy and mitigation measures for the Project would ensure that the overall biodiversity of the local area would be 'maintained or improved' as per the requirements of the DEC (2005) guidelines. Given that the flora and fauna aspects of the project have been assessed as satisfying the 'maintain or improve test', the project would not produce any negative cumulative impacts with respect to flora and fauna.

Socio-economic

Timing of the projects for construction and operation (for those not having already commenced) is unknown and dependant on the respective proponents.

A high level assessment of employment impacts identified that there was a relatively high proportion of construction workers in both the Upper Lachlan SLA and the South Eastern SD. This means the construction labour required for both stages of the Dalton Power Project should be easily sourced from the local region. It is considered that there may be differing skill sets required between the two types of projects (gas fire generation and wind generation) and the region may be able to service multiple projects should the construction timing converge.

16.8.2 Operation Cumulative Impacts

Noise

The noise assessment for the Dalton Power Project found that the noise criteria can be achieved with no further noise mitigation measures beyond those already proposed by AGL. Consequently, the impacts of the operation of the plant are not expected to degrade the existing acoustic environment nor create annoyance to the community surrounding the facility. Therefore it is considered that the distance to the other Projects and noise profile is such that it would not create additional cumulative impact on the existing acoustic environment with other projects.

Visual

The Visual Assessment concluded that the proposed Dalton Power Project would have a low visual impact on people in areas surrounding the Development Site. This is due to a combination of existing trees and natural landforms, views to the stacks being generally restricted to upper portions of the stack structures, views to the lower sections of the power plant and associated infrastructure mitigated by existing trees and local undulating landform. Therefore it is considered that the siting of the Dalton Power Project is such that it would not create additional cumulative impact on the views within the surrounding region.

16.9 Mitigation Measures

The proposal would result in changes to the land use of the site itself as the site is currently used primarily for grazing. However, the proposed site is located in an area that is zoned rural and development for the purposes of 'generating works' is permissible with development consent. Mitigation measures detailed in this Environmental Assessment relate to the control of noise levels, air and water quality, traffic and transportation, visual amenity and other environmental matters, as detailed in **Chapter 7** through **Chapter 18,** would be implemented to ensure that the proposal is managed in an effective and efficient manner, with minimal impact on existing or possible future surrounding land uses.