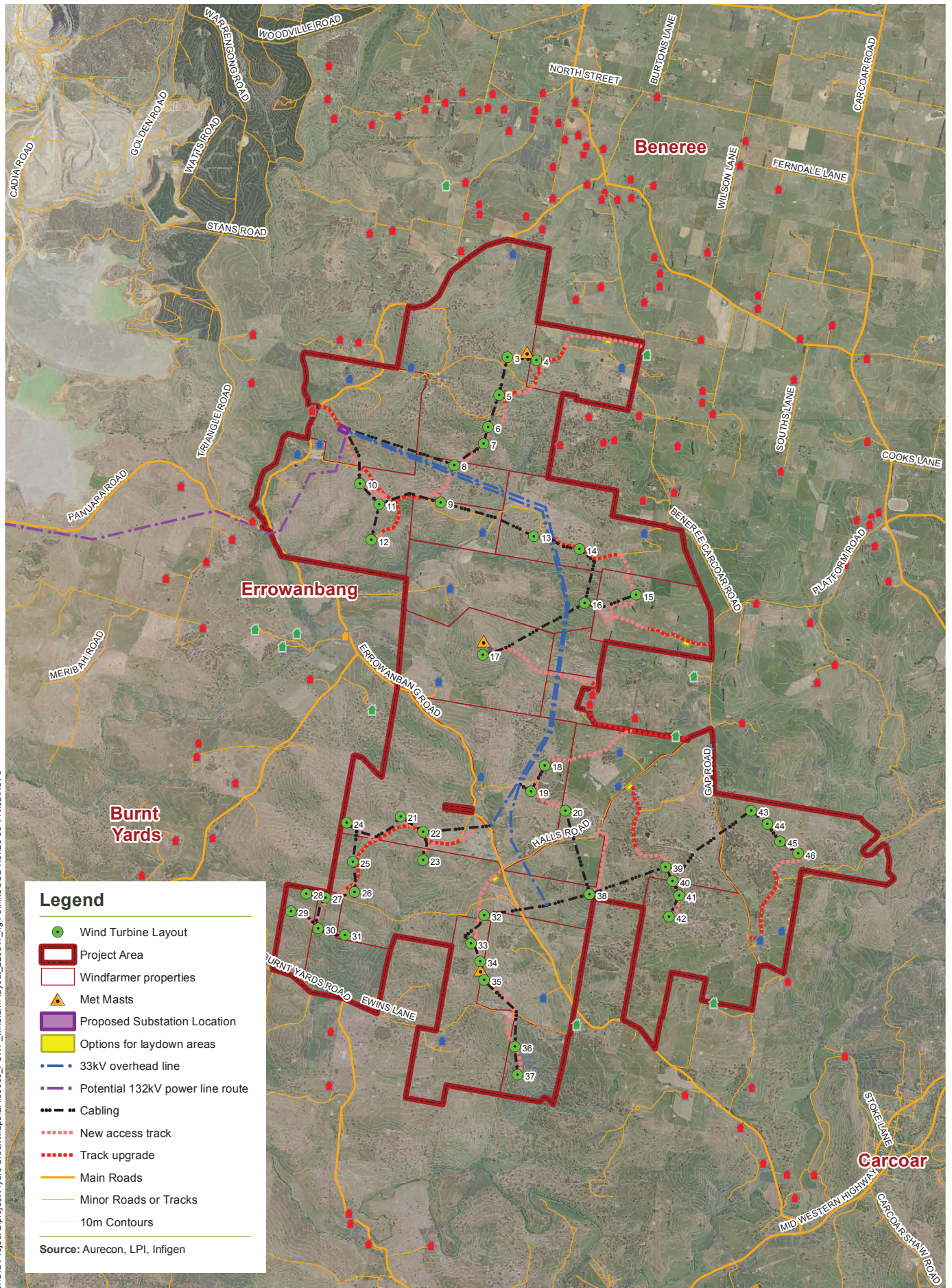


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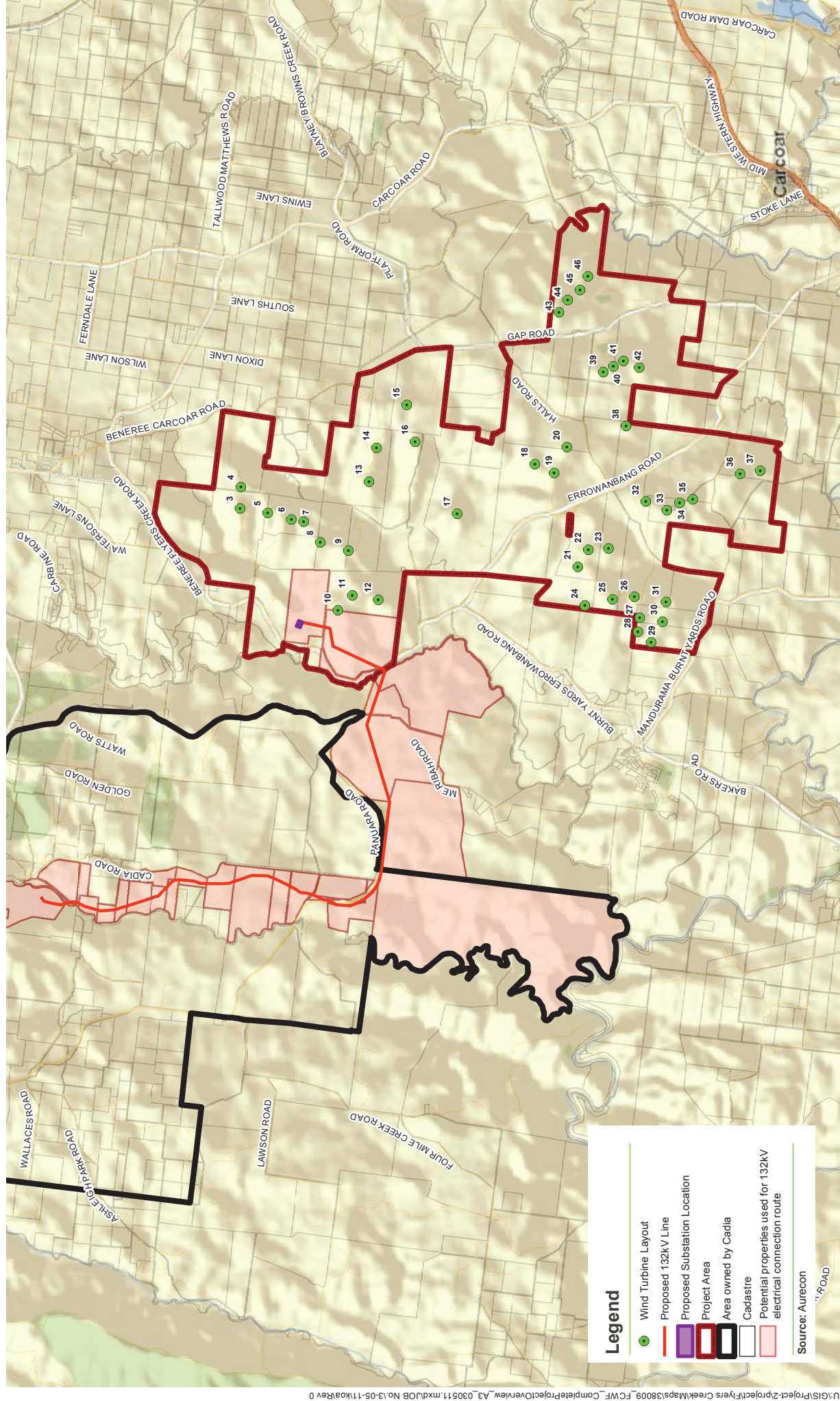


1:80,000
0 1 2kilometres

Projection: GDA 1994 MGA Zone 55


Flyers Creek Wind Farm **Environmental Assessment**

FIGURE 1.5: Wind Farm Layout on aerial photograph and contours



Flyers Creek Wind Farm **Environmental Assessment**

FIGURE 1.6: Complete Project Overview



In addition to the above, the following organisations have a direct association with the land or facilities to be developed:

- Country Energy is the owner and operator of the existing 132 kV line from Orange to the Cadia Mine Substation
- Blayney Shire has responsibility for local roads and represents the interests of its constituent community.
- Department of Lands is the custodian of the Calvert and Hopkins Trig Stations and crown land road reserves.
- Crown Castle/Optus leases the land on which a mobile phone tower is situated to the south of the wind farm project area. Telstra also has equipment on the same tower.
- APA is the owner of a high pressure gas pipeline that passes through the project area
- A project contractor will be appointed to supply the wind farm equipment and undertake the construction works.

The NSW Minister for Planning will be the Approval Authority for the project.

Aurecon has been engaged by Flyer Creek Wind Farm Pty Ltd to coordinate the environmental impact assessment studies, to assist with consultation for the project and to prepare this Environmental Assessment.

1.6.1 Flyers Creek Wind Farm Pty Ltd

Flyers Creek Wind Farm Pty Ltd is the project proponent and is a company formed specifically for this project. Its parent company, Infigen Energy (formerly Babcock & Brown Windpower Pty Ltd) is involved with development of new power generation capacity sourced from renewable energy sources and consistent with this objective has proposed the development of the Flyers Creek Wind Farm. Infigen Energy has its headquarters in Sydney and is listed on the ASX (IFN).

While its principal function is to develop and operate commercially viable renewable energy projects, in carrying out this function, Infigen Energy strives to ensure that all of its projects will:

- (a) Operate efficiently and safely
- (b) Comply with statutory environmental requirements
- (c) Sensitively consider the concerns of the local and indigenous community.

The parent company for Flyers Creek Wind Farm Pty Ltd has been involved with the planning, construction, development and operation of other Australian wind farms and sites as shown in Table 1.1. In fact, Infigen Energy is currently the largest owner of wind farms in Australia.

Table 1.1 – Proponent’s other Australian wind farm generation projects

Name of Wind Farm Project	State where wind farm is located	Number of turbines	Total generation capacity (MW)	Status of development
Alinta	Western Australia	54	89	Operating
Lake Bonney 1	South Australia	46	80	Operating
Lake Bonney 2	South Australia	53	159	Operating
Lake Bonney 3	South Australia	13	39	Operating
Capital	NSW	67	140	Operating
Woodlawn	NSW	23	48	Under Construction
	Totals	256	555	

The Capital Wind Farm is the largest wind farm in NSW, over four times the size of the next largest operating wind farm. The Capital Wind Farm was officially opened in October, 2009 by the Prime Minister of Australia and Premier of NSW at the time. Together, Infigen Energy’s Australian wind farms generate about 1,600,000 MWh of clean, pollution free electricity, enough to power 300,000 typical Australian homes.

1.6.2 Project contractor

Flyers Creek Wind Farm Pty Ltd will engage contractor(s) to supply the required equipment, including wind turbine generators, and to construct the Flyers Creek Wind Farm. There are a range of contractors that can potentially undertake the construction of the wind farm and the contractor will be selected through a tender process.

Flyers Creek Wind Farm Pty Ltd will ensure that the contract specification addresses the ‘Statement of Commitments’ provided in this document, as amended in respect of any conditions of the Project Approval. Flyers Creek Wind Farm Pty Ltd will work with its contractor to finalise design elements, complete planning and, subject to obtaining the necessary approvals, to progress the implementation of the wind farm.

Most of the wind farm equipment suppliers are familiar with the construction issues and generally have well developed environmental management systems. In selecting the project contractor, Flyers Creek Wind Farm Pty Ltd will review the contractor’s prior performance and ensure that the contractor has an effective environmental management system that will ensure that the project’s environmental commitments are achieved. The project contractor will be required to implement and comply with a Constructional Environmental Management Plan (CEMP).

1.6.3 Country Energy

Country Energy is a NSW electricity retailer that also operates and maintains a large network of transmission and distribution infrastructure in rural NSW. It is also the owner and operator of the existing 132 kV transmission line between Orange and the Cadia Mine site. As this line is part of the national electricity grid, the technical rules for generator connections are largely determined by the National Electricity Rules. The network service provider, in this case, Country Energy, will play a key role in working with the proponent, and Cadia Valley Operations, to reach a suitable grid connection design that enables the wind farm to generate electricity while maintaining security of the electricity network. The grid connection is described in detail in Chapter 3.

1.7 Greenhouse Gas Emissions

The Fourth Assessment Report of the International Panel on Climate Change (IPCC) released in 2007 provides evidence of the significant increase in atmospheric greenhouse gases since pre-industrial times and includes the following findings:

- “very high confidence that the globally averaged net effect of human activities since 1750 has been one of warming” and that “warming of the climate system is unequivocal”
- “carbon dioxide is the most important anthropogenic greenhouse gas” and “global increases in carbon dioxide concentrations are due to fossil fuel use and land use change”
- “global greenhouse gas emissions have grown by 70% between 1970 and 2004”
- “there is substantial economic potential for mitigation of greenhouse gas emissions over the coming decades”.

To reduce greenhouse gas emissions, state and federal governments have already introduced a range of initiatives including encouraging people to buy energy generated from renewable sources. Introduction of mandatory schemes, such as the Federal Government’s Renewable Energy Target (RET) Scheme, require electricity retailers to buy a certain amount of electricity from renewable sources (or pay a substantial fine). The RET scheme requires retailers to purchase about 20% of their electricity from renewable sources by 2020. Flyers Creek Wind Farm Pty Ltd has responded to these initiatives by planning and developing the Flyers Creek Wind Farm project.

Estimation of the Flyers Creek Wind Farm’s potential net greenhouse gas emissions savings is described in Chapter 15. In summary, the Flyers Creek project is estimated to save 305,000 tonnes of greenhouse gas emissions annually utilising the NSW Government’s wind farm projected greenhouse gas emissions saving tool. This level of greenhouse gas reductions is equivalent to taking approximately 70,000 cars off Australian roads.

1.8 National Electricity Market

The output of the wind farm will be sold into the National Electricity Market (NEM). The electricity generated by the project will also qualify for creation of Renewable Energy Certificates (RECs) that can be sold to liable parties under the expanded Renewable Energy Target (RET) Scheme.

1.9 Outline of Planning Requirements and Purpose of this Document

The State Environmental Planning Policy (Major Projects) 2005 specifies the types of developments which are classified as Part 3A projects under the EP&A Act. Clause 24 of Schedule 1 of the SEPP identifies an electricity generation facility which has a capital investment of greater than \$30 million and uses wind generation as project to which Part 3A applies. The Flyers Creek Wind Farm is an electricity generation facility that has a capital investment value of more than \$30 million. Based on preliminary project information and indicative project costing, the Director-General of the Department of Planning as delegate of the Minister for Planning advised on 24 November 2008 that the Flyers Creek Wind Farm proposal will be subject to Part 3A of the EP&A Act and determination by the Minister for Planning (Appendix A1).

On 11 November 2009 the Flyers Creek Wind Farm was also declared to be Critical Infrastructure. The Minister for Planning advised that she had formed the opinion that the project was in the category of development that is essential for the State for economic reasons, and for social reasons, and for environmental reasons and declared it to be one of several projects categorised as ‘Critical Infrastructure’.

Under Part 3A of the EP&A Act, the Approval Authority is the NSW Minister for Planning and a Project Application is required to be supported by an Environmental Assessment. The NSW Department of Planning provides the administration of the planning process.

The Environmental Assessment is required to address key project impacts as set out in requirements specified by the Director-General, Planning on 19 January 2009 (Appendix A2). The purpose of this document is to satisfy the requirements of the Environmental Planning and Assessment Act, 1979 in respect of the proposed wind farm development in accordance with the Director-General's requirements for the Environmental Assessment of the proposal. It examines the potential environmental impacts associated with the proposed development and describes measures to mitigate those impacts. The mitigation measures are incorporated in the Project's 'Statement of Commitments' provided with this Environmental Assessment.

Further details on the planning context for the project are provided in Chapter 5 of this Environmental Assessment.

The following stages of the development process have been either initiated and are in progress or have been completed:

Table 1.2 – Stages of the project planning process and status

Stage of planning process	Timing
Director-General declared Flyer Creek Wind Farm a Part 3A project	24 October 2008
Planning Focus Meeting at Blayney Shire	19 November 2008
Project Application	15 December 2008
Director General's requirements issued	19 January 2009
Project declared Critical Infrastructure	11 November 2009
Environmental Assessment preparation	2009 and 2010
Project Application updated and submitted with Environmental Assessment	January 2011

Table 1.3 sets out various aspects of the project planning and environmental assessment and the status of these aspects.

Table 1.3 – Status of key project planning aspects

Project planning aspect	Status
Initial planning (wind monitoring and wind energy assessment)	Complete
Site selection and feasibility study based on conceptual design	Complete
Negotiation of landowner agreements to enable Flyer Creek Wind Farm Pty Ltd to proceed with project planning	Complete
Landowner lease agreements for construction and operation	Complete
Site specific planning and environmental studies	Complete
Community consultation including two community information days in November 2010	Ongoing
Government agency consultation	Ongoing
Equipment review, suitability, availability and pricing. Design refinements	Options being monitored
Preparation of the Environmental Assessment	Complete
Submission of the Environmental Assessment to NSW Dept. of Planning	Complete
Public exhibition of the Environmental Assessment	EA available to public
Review of Environmental Assessment and all submissions	Future
NSW Minister for Planning to determine the Project Application	Future
Tender process to confirm equipment supplier, wind farm layout, equipment to be used and to confirm project cost and viability	Future
Pre-construction arrangements and development of CEMP	Future
Construction phase in accordance with Construction EMP	Future
Commissioning and commencement of operation	Future

The key stages in the overall planning and approvals process are also outlined in Table 1.3.

1.9.1 Submission of the Environmental Assessment and its Exhibition

A Project Application and Preliminary Environmental Assessment (PEA) were initially lodged with NSW Department of Planning in December 2008. Based on the PEA, the Director-General of Planning (19 January 2009) issued assessment requirements for this Environmental Assessment.

This Environmental Assessment addresses the matters set out in the Director-General's assessment requirements. It has been reviewed by the Department of Planning for adequacy prior to formal acceptance by Department of Planning and subsequent public exhibition. Details of each of the key completed stages of the planning process and available documentation are provided on the Department of Planning's web-site.

The public exhibition of the Environmental Assessment enables stakeholders and the broader community to review the Environmental Assessment and provide submissions in regard to the proposal and its potential impacts. In parallel, the relevant government agencies will also provide submissions to Department of Planning and comment on any recommendations for potential conditions of approval. All submissions are subject to review by the Department of Planning and are taken into consideration in determination of the Project Application. Department of Planning will provide an assessment report to the Minister together with proposed conditions for the Minister's consideration and if appropriate, approval.

1.10 Contributors to the environmental assessment process

The organisations involved in the project scoping, assessment of impacts and the preparation of the Environmental Assessment as well as key organisations that have provided advice in relation to potential impacts on their facilities at the site or areas of jurisdiction are shown in Table 1.4.

Table 1.4 – Contributors to the environmental assessment and planning process

Project Component / Aspect	Organisation
Project management and initial project engineering	Flyers Creek Wind Farm Pty Ltd
Wind farm design	Flyers Creek Wind Farm Pty Ltd, development project contractors and potential equipment suppliers
Preparation of Environmental Assessment and selected environmental impact studies	Aurecon
Flora and fauna assessment	Kevin Mills & Associates (KMA)
Bat fauna assessment	Greg Richards & Associates (GRA)
Aboriginal heritage assessment	Austral Archaeology
Aboriginal cultural heritage	Orange Local Aboriginal Corporation Enid Clarke, Jirrah Freeman Shawn and Wayne Williams
Planning Focus Meeting (PFM) involvement and advice regarding assessment requirements	Flyers Creek Wind Farm Pty Ltd Department of Planning Department of Primary Industries – Mineral Resources Department of Primary Industries – Forestry Department of Primary Industries - Fisheries Blayney Shire Council Department of Environment, Climate Change and Water (DECCW) Aurecon
Trig station review	Land and Property Management Authority (LPMA)
Telecommunications facility on Hope Hill	Crown Castle/Optus, Telstra
Point to point microwave link path	TransGrid
High pressure gas pipeline operator within project area	APA
Aviation issues	Civil Aviation Safety Authority (CASA) Airservices Australia, Aerial Agricultural Association of Australia (AAAA), Orange City Council (owner of Orange Airport)
Community consultation	Flyers Creek Wind Farm Pty Ltd, Aurecon, neighbours to the wind farm and the broader community
Transmission connection	Flyers Creek Wind Farm Pty Ltd, Country Energy, Cadia Valley Operations, potential project contractor and Aurecon.



1.11 Structure and content of this Environmental Assessment

The content of this Environmental Assessment is largely determined by:

- Specific assessment requirements of the Director-General of NSW Department of Planning
- Relevant guidance documents of the key regulatory bodies with responsibilities in relation to the issues considered as part of planning process. Agency requirements are set out in Appendix A
- Relevant environmental impact assessment guidelines including Department of Planning's Wind Energy Facilities Environmental Impact Assessment Guidelines, Auswind Best Practice guidelines and SA EPA Noise assessment guidelines for wind farms as well as literature review for similar projects

To satisfy the assessment requirements, specialist practitioners have investigated the various technical and environmental issues (Table 1.4) relating to the proposal. The reports of these practitioners form appendices to the Environmental Assessment. The main body of the Environmental Assessment provides an abbreviated form of the specialist assessments with the aim of clearly stating the potential impacts and any measures to be implemented for their mitigation. The purpose of this presentation is to provide an Environmental Assessment that describes the proposed development to the extent possible at this stage of planning and which can be clearly understood by the general public while providing supporting studies for those that require more detail.

The structure of the Environmental Assessment is intended to assist the reader to gauge the potential impacts of the proposal. Specific key environmental issues are addressed generally in the following format:

- Introduction to the specific issue in relation to a wind energy proposal
- Description of assessment methodology
- Existing character of the environment
- Potential impacts relative to specific key issue
- Measures proposed to mitigate the impacts
- Conclusion

Table 1.5 provides a brief summary of the matters covered by this Environmental Assessment.

Table 1.5 – Structure and content of the EA

Chapter	Description
2	outlines the context for wind energy developments, Flyer Creek Wind Farm Pty Ltd business objectives, its reasons for selection of the Flyers Creek Wind Farm site and alternatives considered during the formulation of the project
3	provides a detailed description of the project activities and stages and an outline of the proposed management of those activities
4	Property details
5	outlines the planning context for the development
6	consultation undertaken and proposed
7-17	provide a review of relevant environmental issues, setting out the existing environment, potential environmental impacts and proposed mitigation measures
18	provides the 'Statement of Commitments' as required by the Director-General
19	describes the justification for the project proceeding
20	lists references
Appendices	Description
A	Director Generals Requirements
B	Correspondence
C	Visual Assessment and Shadow Flicker Analysis
D	Flora and Fauna assessment
E	Assessment of Bat species
F	Heritage assessment
G	Noise assessment
H	Telecommunications assessment

1.12 Contact Details for Further Information

The contact details for Flyers Creek Wind Farm Pty Ltd are listed below in Table 1.6.

Persons with enquiries regarding the development application and the review process or wishing to make a submission regarding the project may contact the proponent or the Department of Planning.

Table 1.6 – Contact details for the proponent and the NSW Department of Planning

	Flyer Creek Wind Farm Pty Ltd	Department of Planning
Contact	Jonathan Upson	Department of Planning – Major Project Assessments Branch
Phone:	(02) 8031 9900	(02) 9228 6111
Facsimile:	(02) 9247 6086	(02) 9228 6191
email:	Jonathan.upson@infigenenergy.com	Website: www.planning.nsw.gov.au
Address:	Level 22, 56 Pitt Street, Sydney 2000	GPO Box 39, Sydney NSW 2001