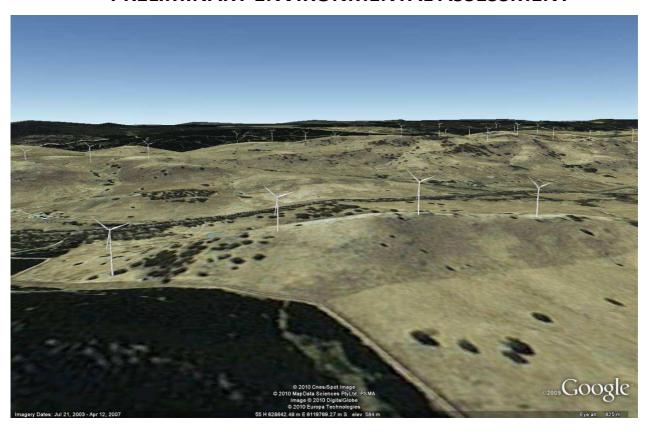


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ADJUNGBILLY WIND FARM

PRELIMINARY ENVIRONMENTAL ASSESSMENT



PREPARED BY

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29 JUNE 2010

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INTRODUCTION

CBD ENERGY LIMITED HAS PREPARED THIS PRELIMINARY ENVIRONMENTAL ASSESSMENT OF THE PROPOSED ADJUNGBILLY WIND FARM PROJECT FOR CONSIDERATION AND APPROVAL BY THE NSW DEPARTMENT OF PLANNING UNDER PART 3A OF THE "ENVIRONMENTAL PLANNING AND ASSESSMENT ACT (1979)" AND IN DOING SO SEEKS THE ISSUE OF THE DIRECTOR-GENERAL'S ENVIRONMENTAL ASSESMENT REQUIRMENTS.

THE NSW MINISTER FOR PLANNING ON 19 MARCH 2010 FORMED THE OPINION THAT THE PROPOSAL IS DEVELOPMENT OF A KIND THAT IS DESCRIBED IN SCHEDULE 1, GROUP 8, CLAUSE 24 OF "STATE ENVIRONMENTAL PLANNING POLICY (MAJOR DEVELOPMENT) 2005" NAMELY DEVELOPMENT FOR THE PURPOSE OF A WIND ELECTRICITY GENERATION FACITITY THAT HAS A CAPITAL INVESTMENT VALUE OF MORE THAN \$30 MILLION AND IS THEREFORE DECLARED TO BE A PROJECT TO WHICH PART 3A OF THE "ENVIRONMENTAL PLANNING AND ASSESSMENT ACT (1979)" APPLIES FOR THE PURPOSES OF SECTION 75B OF THAT ACT.

THIS PRELIMINARY ENVIRONMENTAL ASSESSMENT PROVIDES A DESCRIPTION OF THE DEVELOPMENT PROPOSAL, LISTS THE RELEVANT PLANNING INSTRUMENTS, PROVIDES A GENERAL DESCRIPTION OF THE KEY ENVIRONMENTAL ISSUES AND OUTLINES THE STUDIES TO BE UNDERTAKEN AS PART OF THE PART 3A DEVELOPMENT PROCESS.

PROJECT DESCRIPTION

Applicant Details

This Preliminary Environmental Assessment (PEA) has been prepared by CBD Energy Limited (CBD Energy). CBD Energy is a diversified renewable energy and energy storage company providing integrated sustainable solutions for fossil fuel and CO₂ emission reduction. CBD Energy is listed on the Australian Stock Exchange and is headquartered in Sydney.

PROJECT OVERVIEW

This PEA has been prepared to support a project application under Part 3A of the NSW *Environmental Planning and Assessment Act (1979)* (EP&A Act) for the proposed Adjungbilly Wind Farm ("the proposal") which includes turbine installation, electrical transmission network and grid connection. The proposal, located within Gundagai Shire, will have a capacity of 39 megawatts (MW) produced by 26 wind turbines. The site is located approximately 350 kilometres south-west of Sydney, 799 meters above sea level and covers 84 km². The proposal will be preferably connected to the 132kV Wagga Wagga-Yass transmission line located to the north of the site. The second, or fall back option, is connection to the 132kV Tumut-Burrinjuck-Yass transmission line to the south of the site. Both of these lines are owned and operated by Transgrid. Construction and commissioning of the proposal is expected to occur over a period of approximately four to six months.

The following is a review of the environmental issues associated with the development, which will assist the Director-General of Department of Planning NSW to determine appropriate environmental assessment requirements.

This document sets out:

- Potential impacts arising from the proposals development and operation;
- Potential timeframe;
- An overview of planning context and assessment process; and



• Proposed approach to the assessment of key potential impacts.

Figures 1 to 5 are maps/diagrams of the proposal which show the location of the site, proposed turbine layouts and grid connection options.

For the purposes of this PEA the project will be divided into the "Adjungbilly Cluster" (containing 19 turbines) (Lot/DP 200/750970, 54/750970, 142/750970, 2/1000839, 252/750978, 64/750978 and 2/792771) and the "Stockdale Cluster" (containing 7 turbines) (Lot/DP 11/1107266, 3/1063043 and 208/750987) (Figure 2).

LOCATION DETAILS

The location of the proposal in relation to metropolitan centres and key infrastructure is shown in Figures 1 and 2. The Adjungbilly Cluster is located approximately 26km east of the Gundagai and approximately 30km north-east of Tumut whereas the Stockdale Cluster is located approximately 22km north-east of Gundagai and approximately 17.5km south of Jugiong. The turbines of the Adjungbilly Cluster extend over a series of north-south facing ridgelines whereas the Stockdale Cluster extends across a single east-west ridgeline. All turbines are located on land ranging from approximately 481m to 799m Australian Height Datum (AHD).

All neighboring properties will be assessed against the potential noise and visual impacts of the proposal and appropriate setback distances will be a key design consideration in finalising the proposed layout.

LANDOWNERS

CBD Energy has executed formal agreements with three landholders to lease land for the proposal.

TURBINE LAYOUT

The indicative layout for the proposal is shown in Figures 3 and 4. It is anticipated that the final positions of the turbines will be refined through the assessment process due to economic, social, environmental or engineering issues.

TURBINE SPECIFICATIONS AND OPERATION

The proposed wind farm layout has been modelled using a wind turbine with a nominal capacity of 1.5MW, producing a total wind farm capacity of approximately 39 MW and an annualised production yield of approximately 90 - 100 GW/h's per annum. However, for the purpose of this PEA CBD Energy seeks support and approval for a maximum of 26 wind turbines to be installed rather than the generating capacity.

It is proposed that the turbines will have a tower height of 68 metres, hub height of 70 metres and a blade length of 41 metres (rotor diameter of 82 meters), giving a maximum blade tip height of 111m.

All wind turbines will be automated to face into the wind with cut in and cut out speeds. Typically each turbine will begin generating electricity at 3 meters per second (m/s) and shut down at around 23 m/s to avoid damage to the equipment and prevent unsafe operation.



INTRA-SITE ELECTRICAL CONNECTION

As discussed above, this PEA seeks approval under Part 3A of the EP&A Act for the proposal which includes turbine installation, substation infrastructure, electrical transmission, grid connection and other necessary infrastructure.

All proposed turbines will be connected electrically by an underground 33kV circuit to a new substation constructed on site (if possible). The Adjungbilly Cluster will contain approximately 11.14km of cables whereas the Stockdale Cluster will contain approximately 9km of cables. Both of these clusters will connect together at the substation, most likely situated near Adjungbilly Road in order to minimize disturbances to the landowners when in operation (Figure 5). The Stockdale Cluster will be connected to the substation via an 11.5km overhead 33kV line, while the Adjungbilly Cluster will be connected through the underground circuit. The transformers in the substation will elevate the voltage from 33kV to 132kV in order for preferential connection to the 132kV Transgrid line as discussed above.

ACCESS ROUTES

Intra-site access roads will be required between each turbine and built (wherever possible) on the same route as the underground electric cables in order to minimise impacts. Preliminary options for access roads have been identified (Figures 3 and 4) and it is expected that access roads will need to be 12m wide during construction and subsequently downgraded to 6m post commissioning.

The suitability and acceptability of these options will be refined and adjusted as necessary throughout the planning process based on the findings of the environmental assessments and planning studies.

Several access points will be required to connect intra-site access roads with local roads in the area. Possible locations include Adjungbilly Road, Stockdale Road and some forestry tracks to the east of the project.

CONSTRUCTION MATERIAL SUPPLIES

During the construction phase it will be necessary to obtain a range of materials. Supplies of concrete for turbine footings, substation construction works and gravel for surfacing access roads will be sourced locally wherever possible. The concrete supply may require temporary batching plants to be constructed on site and, if necessary, impacts from this activity will be addressed by the Environmental Assessment.

PROJECT CONTRACTOR

CBD Energy will be the nominated lead contractor.

ELECTRICAL CONNECTIVITY- TRANSGRID

Two options exist for electrical connection to the NSW power grid. Option one is the preferred option and involves connection to the 132KV Wagga Wagga-Yass line to the north of the site (Figure 5). Option two is connection to the 132kV circuit between the Burrinjuck Substation and the Tumut Substation to the south of the site (Figure 5). Easements may be required on surrounding private lands in order to connect the proposal to the Transgrid network.

An enquiry process will be initiated with Transgrid in order to assess the technical feasibility of each option.

PROJECT TIMEFRAME

Initial assessments have identified that a suitable wind resource is available and agreements have been established with relevant landowners. Availability of the necessary equipment and associated costing are currently being sought to confirm the feasibility of the proposed timeframe and to determine the final design.

This PEA is provided to seek environmental assessment requirements. Assuming that assessment requirements are issued in July 2010 then Environmental Assessments are expected to be completed by November 2010 with the objective of obtaining planning approval by early 2011. This is consistent with the objectives and timeframes of the NSW Government for Part 3A approval processes.

PLANNING INSTRUMENTS AND CONTEXT

RELEVANT LEGISLATION AND REGULATIONS

STATUTORY PLANNING REQUIREMENTS

The development of wind farms in NSW is subject to the EP&A Act, its regulations, various NSW environmental legislations, State Environmental Planning Policies, any relevant Regional Environmental Plans and the Commonwealth Environment Protection and Biodiversity Conservation Act (1999) (EPBCA).

LOCAL ENVIRONMENTAL PLANS

The site has no zoning under the current Gundagai Local Environmental Plan (LEP) 1997. Under the draft Gundagai LEP 2010 the site is zoned 1(a) Rural.

STATE ENVIRONMENTAL PLANNING POLICY (MAJOR DEVELOPMENT) 2005

The State Environmental Planning Policy (Major Development) 2005 provides a framework to identify major developments assessed under Part 3A of the EP&A Act. The proposal has been granted major development status as it is a facility for electricity generation harnessing wind and has a capital investment value of approximately \$75 million. These criteria satisfy Clause 24 of State Environmental Planning Policy (Major Development) 2005. This interpretation is consistent with the determination received on 19th March 2010 from the Director General of Department of Planning NSW.

WIND FARM PRECINCTS

In 2009, the New South Wales Government established six wind precincts across the State with the intention of encouraging wind farm development and providing incentives to boost the development of renewable energy resources. These areas include:

- The NSW/ACT Cross Border Region;
- The Central Tableland;
- The New England Tableland;
- Cooma/ Monaro;
- The Upper Hunter; and
- The South Coast.

The proposal is located within the NSW/ACT Cross Border Region. Pursuant to this initiative, renewable energy projects generating more than 30 megawatts of power and with capital investment value of more than \$30million will benefit from major development status and gain prioritised assessment.



ROADS ACT (1993)

Permits may be required under Section 138 of the NSW *Roads Act (1993)* for underground cabling that could pass under public roads if necessary.

ENVIRONMENTAL ASSESSMENT

The matters to be addressed by the Environmental Assessment are specified by the Director-General of Planning NSW and generally referred to as the Director-General's Requirements (DGR's). Key reference documents setting out planning criteria for wind farm projects include:

- The draft Impact Assessment Guidelines for Wind Energy Facilities (June 2003) prepared by the NSW Department of Planning;
- South Australian EPA: The Environmental Noise Guidelines (2003); and
- The Wind Farm Precincts Policy.

The Environmental Assessment will describe the potential impacts of the proposal and how they will be managed. A Statement of Commitments will be compiled as required.

ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT (1999)

The proposal will be referred to the Commonwealth Department of the Environment, Water, Heritage and the Arts for consideration under the EPBCA.

CIVIL AVIATION REGULATION 1998

Tall structures

The proposal is likely to contain wind turbines which will exceed 110m Above Ground Level (AGL). Because of this the Civil Aviation Saftey Authority (CASA) and the Royal Australian Air Force (RAF) will be informed of the proposal in accord with AC 139-08(0).

The information to be provided to CASA and RAF includes:

- "as built" coordinates of each tower (expressed in latitude and longitude);
- · Final height in meters AHD of each tower; and
- The ground level of the site in meters AHD for each tower.

Subsequent to the grant of any development approval for the proposal, an additional and related approval will be sought from CASA for on-site cranes (temporary obstacles) that exceed 110m AGL that may be used during the wind turbine installation phase.

STAKEHOLDERS

Consultation will be held with relevant stakeholders, including government agencies, neighbours and the broader local community. To support the consultation process a series of consultations seminars involving Gundagai Shire Council will be held to keep the community updated on the progress of the proposal.



ENVIRONMENTAL SETTING

The site is located in a rural area that has been extensively cleared for gazing and other agricultural pursuits. The proposed site consists of gently and steeply undulating ridgelines that are sparsely covered with a mixture of remnant native vegetation and introduced and native grasslands. The site is currently used for agricultural purposes and is subject to regular land management practices such as pasture improvement, grazing, herbicide application and cultivation. The proposal is unlikely to result in the clearing of extensive areas of existing native vegetation on the site or adjoining sites due to grid connection. It is expected that existing land uses will continue after installation of the proposal.

The land where the overhead and underground cables that will be built over/ under; will be of similar agricultural purpose. There is no native vegetation on the lots of land involved site no clearing is expected during construction.

The geology of the sites is yet to be determined and a geotechnical assessment will be commissioned as part of the Environmental Assessment.

ENVIRONMENTAL ISSUES AND MANAGEMENT

WIND FARM LAYOUT

The proposed turbine layout is contained in Figures 3 and 4 which maximises utilisation of the available wind resource in accord with regulatory and broad community acceptance. The planning and design stages of the proposal will consider all potential environmental impacts on flora communities, fauna habitat, heritage aspects, nearby residences etc. It is expected that some adjustment of the turbine locations will occur during the planning and environmental assessment phase.

Access routes will be designed to achieve practical transport paths that minimise disruption to the local traffic and environmental impacts. Initial options are currently being reviewed with further detailed studies necessary to reflect both practicality and acceptability to the Gundagai Shire Council, landowners and local road users.

CONSTRUCTION PHASE

The construction phase is expected to extend over 4 – 6 months and will expect to involve:

- Transport of equipment and materials to site;
- Daily movement of a small work force between the site and Gundagai or Tumut;
- Earthworks for access tracks, turbine footings, underground cables and a substation;
- Erection of turbines, substation structures and construction of a facilities building;
- Electrical connections within the wind farm and to the Transgrid transmission grid;
- Commissioning of the wind farm, and
- Restoration of any disturbed areas of lands.

All construction will be undertaken in accordance with an approved Environmental Management Plan.

It is expected that the turbines will be imported through Port Kembla. The transport of materials and equipment to the site during the construction phase will involve a temporary increase in local traffic volume. Vehicles accessing the site will include a range of "over-size" (up to 50 metres in length) and "over-weight" (up to 80 tonnes) vehicles. Preliminary



indications are that several access points from public roads will be needed to access the site and the Environmental Assessment will include a review of the suitability of roads that can be used to access the site and any potential impacts to road safety and local traffic movements. Where necessary, mitigation measures will be proposed and incorporated within a Traffic Management Plan.

Initial site works will include establishment of a temporary construction site office, preparation of access tracks to turbine sites, excavation of footings for turbines and trenching for underground cables. The potential for soil erosion and dust generation during construction will be assessed and mitigated.

Earthworks also have the potential to disturb any surface or shallow sub-surface heritage items. Accordingly, an assessment of indigenous or non-indigenous heritage values of the site will be undertaken by a specialist consultant in conjunction with relevant stakeholders prior to the excavation of any earthworks.

Noise impacts can be associated with the construction phase arising from the transport of materials and equipment to site as well as general construction activity. Controls will be incorporated in the Environment Management Plan and will include adoption of specific working hours and use of compliant equipment appropriate to the development.

Site restoration following construction works will focus on re-vegetation of disturbed ground, control of weed invasion and prevention of significant soil erosion and sedimentation.

Construction contractors will, in consultation with the Rural Fire Service, implement fire prevention procedures during the wind farm construction phase. Fire fighting equipment will be located on site and all site vehicles will have diesel engines to minimize fire risk. Construction activities will be modified to suit any fire bans whenever appropriate.

OPERATIONAL PHASE

Once constructed and commissioned the proposal will operate for a 20-25 year period. A regular maintenance program will be an integral part of the operation and any repairs will be undertaken as required. The operation of the proposal may have various impacts, as detailed below.

VISUAL

Wind farms are an addition to the landscape. As such, visual impacts on neighbours will be assessed by a comprehensive visual assessment including a landscape assessment, view analysis, preparation of photomontages from representative view points and review of options for mitigation of the visual impacts. The issues of shadow flicker and glint will also be addressed.

CBD Energy is confident that visual amenity impacts will minimal as the site is located far from urban centres and is sparsely populated.

NOISE

Once commissioned, the main potential for noise impacts will be from on-going operation and the substation facility. As part of the Environmental Assessment a suitably qualified consultant will be appointed to assess acoustic impacts and potential impacts on nearby residences. If necessary, a management plan will be prepared and implemented to address potential impacts.

FLORA AND FAUNA

A Flora and Fauna Assessment will be undertaken for the site in relation to observed or likely species. In particular, specialist advice will be sought in relation to the proposals impact on avifauna and micro-chiropteran species. CBD Energy has been advised by the NSW Department of Environment, Climate Change and Water that the proposal is located near to possible Eastern Bentwing Bat maternity caves. Because of this CBD Energy will engage a suitably qualified micro-chiropteran expert to analyse potential impacts from the proposal using industry best practice scientific survey methodology and propose suitable mitigation proposals if necessary.

TELECOMMUNICATIONS

An assessment of local telecommunications services will be made. Potential interference from the proposal (both during construction and operation) will be made at locations surrounding the site. Mitigation measures will be identified for the potential impacts and a management plan developed where necessary.

AIRCRAFT SAFETY

As the tip height the wind turbines are taller than 110m AGL consultation with CASA, Airservices Australia, the Defence Department and the Aerial Agricultural Association of Australia will be incorporated into community consultation program for the proposal. Requirements for notification will be complied with and actions to ensure the safe operation of the proposal with regards to aircraft will be undertaken, which may include aviation warning lights at selected locations if required.

BUSHFIRE

CBD Energy will maintain a limited fire fighting capability on site at all times to control small grass fires and to assist fire authorities in controlling any larger fires that may occur on or adjacent to the site. All site vehicles during the operation phase will have diesel engines and will use the sites access roads to minimize the likelihood of igniting dry grass. On a very rare occasion it is possible that equipment malfunctions could cause a fire on site and an appropriate Occupational Health and Safety management will be implemented to deal with such an event. Agreed procedures for liaison with fire fighting authorities will be developed to address the possibility of a bushfire occurring on site.



Preliminary Environmental Assessment – Adjungbilly Wind Farm

PROPOSED SURVEYS

It is proposed that the Environmental Assessment will provide a comprehensive assessment of all relevant environmental issues. In turn, these issues and their management strategies will play a key role in determining the final turbine layout and consent conditions. The Environmental Assessment will address the Director General's Requirements and is expected to include the following key specialist assessments as shown in Table 1 below:

TABLE 1: PROPOSED SITE SURVEYS

ISSUES	PROPOSED SCOPE OF ASSESSMENT
VISUAL	A detailed Visual Impact Assessment will be undertaken that assesses impacts on major view lines through the preparation of photomontages and visibility analysis at key viewpoints surrounding the proposal. Issues of shadow flicker and glint will be assessed and documented in the Environmental Assessment as well as potential mitigation measures.
NOISE	A comprehensive Noise Assessment will be undertaken in accordance with the South Australian EPA's Environmental Noise Guidelines (2003).
FLORA AND FAUNA	A review of vegetation on and surrounding the site will be conducted with a focus on native vegetation. Important areas of vegetation and fauna habitat will be identified and conserved and embellished if possible. Significant impacts on flora and fauna would only occur subject to agreement with relevant authorities and the necessary mitigation measures being incorporated into the proposal. Significantly, assessment of relevant avifauna and micro-chiropteran species will be undertaken as discussed above.
ARCHAEOLOGICAL / HERITAGE	A heritage assessment will be undertaken by a suitable specialist in conjunction with relevant indigenous stakeholders.
TRAFFIC ASSESSMENT	A comprehensive assessment may be required to determine the suitability of local roads to cope with the increased traffic load and specifically impacts associated with over-size and over-weight vehicles accessing the site during the construction phase.
GEOLOGY SOILS AND GEOTECHNICAL INFORMATION	Geological and geotechnical studies will be conducted and incorporated in the Environmental Assessment.
WATER SUPPLY AND SITE DRAINAGE	The proposals requirements for water supply during construction and operation will be assessed. In addition, any potential for the proposal to impact on hydrological systems at or surrounding the site will be determined.
AIR SAFETY, BUSHFIRE RISK, CATCHMENT ISSUES, COMMUNITY CONSULTATION,	A comprehensive risk management report will be conducted for the proposal and incorporated into the Environmental Assessment. Three community consultation seminars are envisaged to be held at various locations.

CONCLUSION

The Adjungbilly Wind Farm proposes to be an environmentally sensitive sustainable development which will assist in meeting national renewable energy targets and provide economic development opportunities for the Gundagai Shire.

Through community and stakeholder consultation, compliance with planning requirements, conducting environmental assessments and employing mitigation measures where necessary the project aims to create minimal environmental impact during construction and operation.

Accordingly, CBD Energy seeks the Director-General's Environmental Assessment Requirements pursuant to Part 3A of the EP&A Act.

APPENDIX	
FIGURE 1	PROPOSED LOCATION OF ADJUNGBILLY WIND FARM.
FIGURE 2	INDICATIVE LOCATION OF PROPOSED ADJUNGBILLY WIND FARM — SHOWING "STOCKDALE CLUSTER" AND "ADJUNGBILLY CLUSTER".
FIGURE 3	ADJUNGBILLY WIND FARM "ADJUNGBILLY CLUSTER" — PROPOSED TURBINE LOCATIONS.
FIGURE 4	ADJUNGBILLY WIND FARM "STOCKDALE CLUSTER" — PROPOSED TURBINE LOCATIONS.
FIGURE 5	ADJUNGBILLY WIND FARM — PROPOSED GRID CONNECTION TO EXISTING POWER LINES.