# Kyoto energypark

Appendix A(i)

- Referral of Proposed Action to the DEWHA
- Notification of Referral Decision DEWHA CEG Consult
  - (May 2008)





Australian Government

#### \* Department of the Environment and Water Resources

# Referral of proposed action

### What is a referral?

The Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) protects matters of national environmental significance (NES), and the environment, in relation to Commonwealth actions, and actions on (or impacting upon) Commonwealth land. The purpose of a referral is to determine whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister for the Environment and Water Resources' decision as to whether approval is necessary and, if so, the type of assessment that will be taken. These decisions are made within 20 business days.

#### When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on matters protected by Part 3 of the EPBC Act:

- World Heritage (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Marine environment (sections 23 and 24A)
- Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
- Protection of the environment from Commonwealth actions (section 28

#### OR

- actions that may have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land)
- actions taken on Commonwealth land that may have a significant impact on the environment generally
- actions by Commonwealth Authorities that are likely have a significant impact on the environment require approval.

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure.

To help you decide whether or not your proposed action requires approval (and, therefore, if you should make a referral), read the following documents, available from the Department web site:

- the Policy Statement titled *Principle Significance Guidelines 1.1 – Matters of National Environmental Significance*. Additional sectoral guidelines are also available.
- the Policy Statement titled Principle Significance Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.
- the interactive map on the web site-enter a location to obtain a report on what matters of NES may occur in that location.

#### A staged or component action

An action that is a component of a larger action may not be accepted separately and may require referral of the larger action for consideration under the EPBC Act. Refer to *Fact Sheet 6: Staged Developments/Split Referrals.* 

If you want to make a referral for a staged or component referral, contact the EPBC Act Referrals Section (1800 803 772).

#### Permits

Some activities may also require a permit under other sections of the EPBC Act, whether or not approval is required. Information is available on the Department web site.

#### Completing the referral form

Completing this form will help ensure that you submit the information required by the EPBC Regulations.

All referrals MUST be published on the Department's web site for public comment (the Department will arrange this) and should generally be:

- readily understood by the public
- no longer than 25 A4-sized, single-sided pages
- typed (main text no smaller than 11 points)
- have clearly legible maps and diagrams
- supplied unbound or electronically.

Provide supporting documentation, such as environmental reports or surveys, as attachments. However, the referral form must contain the core information, so that it provides an adequate basis for public comment and decision-making.

Provide coloured maps, figures or photographs to help explain the project and its location. Aerial photographs, in particular, can provide a useful perspective and context. Figures should be good quality as they may be scanned and viewed electronically as black and white documents. Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

## Using the MS Word file to enter your information

You can complete your referral by entering your information into this Word file.

Instructions are provided in green text. If you do not see the instructions you need to reveal 'hidden' text. A toolbar with buttons to turn the instructions on and off should be visible when you open the file.

Normally the instruction text will not print. (If you wish to print a copy of the form with the instructions you will need to select the Options button in the Print dialog and select Hidden text.)

#### Submitting the referral form

#### By mail to

EPBC Act Referrals Section Environment Assessment Branch Department of the Environment and Water Resources GPO Box 787

#### CANBERRA ACT 2601

#### By fax to 02 6274 1789

- Referrals must be of sufficiently clear quality to be scanned into electronic format.
- Address the fax to the mailing address, and clearly mark it as a 'Referral under the EPBC Act'.
- Follow up with a mailed hardcopy including copies of any attachments or supporting reports.

#### By email to epbc.referrals@environment.gov.au.

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- To ensure file sizes are not too large (below two megabytes), enclose maps and figures as separate files if necessary. If unsure, send a question to the email address.
- Follow up with a mailed hardcopy including copies of any attachments or supporting reports.

### What happens next?

The Department will write to you at the end of the 20 business day period to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is needed. There are three types of decisions about the referral.

### The proposed action is NOT LIKELY to be significant and does NOT NEED approval

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any state or local government requirements).

### The proposed action is NOT LIKELY to be significant IF undertaken in specified manner

The specified manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the specified manner to the Department.

### The proposed action is LIKELY to be significant and does NEED approval

The proposed action is subject to a public assessment process before it can be considered for approval. The level of assessment will be decided at the same time. (Further information about the levels of assessment and basis for deciding the approach are available on the web site.)

If the action is likely to be significant it is called a *controlled action* and the particular matters upon which the action may have a significant impact (such as World Heritage or threatened species) are known as the *controlling provisions*.

#### **Compliance audits**

The Department may audit your project at any time to ensure that it was completed in accordance with the information provided in the referral or the stated particular manner. If the project changes, such that the degree of significance could vary, you should write to the Department to advise of the changes, and likely significance, or discuss with the EPBC Act Referrals Section (1800 803 772).

#### For more information

- call the Department of the Environment and Water Resources Community Information Unit on 1800 803 772 or
- visit the web site <u>www.environment.gov.au/epbc</u>

All the information you need to make a referral, including documents referenced in this form, can be accessed from this web page.

### **Referral of proposed action**

Project title	Kyoto Energy Park, Middlebrook Station, Middlebrook Road and
-	Mountain Station, Owens Gap, SCONE

### 1 Contacts

1.1	Referring party	Person, agent or agency who is making the referral
		Contact: Philip Conacher
		Director
		Conacher Environmental Group
		PO Box 360
		GOSFORD NSW 2250
		Ph: (02) 4324 7888 Fax: (02) 4324 7899
		Email: conacherenviro@bigpond.com
1.2	Responsible party	Person responsible for or who will carry out the proposed action.
		If same as 1.1, write 'as above'
		Mr Mark Dixon
		Project Manager
		Pamada Pty Ltd
		Level 16, 14-24 College St (PO Box 1446)
		Sydney 1300
		Ph: (02) 9969 3608 Fax: (02) 9383 8321
		Email: mark.dixon@pamada.com
1.3	Proponent	Person responsible for preparing assessment documentation, if approval
		is required. If same as 1.2, write 'as above'

As above

### 2 Summary of proposed action

NOTE: You must attach an A4 size map/plan(s) showing the location and approximate boundaries of the area in which the project is to occur. The summary below should encompass any alternative locations, timeframes or activities that are listed in Section 3.2.

2.1	Short description	The proposed development is for the construction of an Energy Park
		which will utilise a combination of various energy producing
		technologies as outlined below. The site is located near Scone in the
		Hunter Valley of NSW.

**Wind Turbine Generators**: It is proposed to construct approximately 12 turbines on Middlebrook Station and a maximum of 35 turbines within Mountain Station. The turbines are expected to be between 80 -105m in height with a blade length of 45m and will be positioned along the ridgelines to enable access to prevailing winds. Construction will require the clearing of 40x50m of vegetation to provide for construction of 20 x 30m anchorage pads with a further clearance of 10m on all sides, and also access roads which will mostly follow existing unformed tracks.

**Solar Thermal Plant:** The solar thermal plant will initially cover approximately 12 hectares and may be upgraded to between 50-100 hectares of existing cleared land on the plateau of Mountain Station, it is expected that clearing of native vegetation will not be required for its construction.

**Closed Loop Hyrdo Plant:** The closed loop hydro plant will be located within the central valley of Mountain Station where the steep slopes are able to provide sufficient water velocity to generate power. Construction of this plant will require the removal of native vegetation and habitat disturbance to provide for the pipeline loop and construction of access roads and infrastructure.

**Visitors and Education Centre**: This centre will be located on the cleared plateau of Mountain Station in the vicinity of the Solar Thermal Plant. The proposed area is already cleared and it is unlikely that further clearing for bushfire protection areas and access will be required.

#### **Associated Infrastructure:**

The proposal also includes infrastructure and associated developments such as:

- Construction depot
- Substation and Switchyard
- Material storage areas
- On-site quarries (already existing)
- Managers residence
- Operational offices
- Construction access
- Permanent tracks
- Bushfire Asset Protection Zones (APZs)
- Water, electrical and telephone services including underground and overhead lines.
- Transmission lines connecting to the state electricity grid.

2.2	Latitude and longitude		Midd	lebrook St	tation	Мо	untain Sta	tion	
		Location Point	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds	
		N. extent	31	57	00	32	00	50	
		S. extent	32	00	50	32	04	05	1
		E. extent	150	50	20	150	46	30	
		W. extent	150	46	50	150	43	10	
2.3	Locality	Middlebrook NSW Mount	ain Statio	n – Appro	oximately	9-14km \	west of S	cone NSV	N
2.4	Size of the development	Total area of							
	footprint or work area (hectares)	to be affected	d = approx	cimately 8	ha. This ir	ncludes cle	earing for	wind turbi	ine
	(nectares)	pads (each 20 and associate							
		unformed trac			structure v		mosuy ic		шų
		Total area of							
		to be retain				641ha (	other larg	ge areas	С
2.5	Street address of the site	WBYBBRGW							
	Sheet address of the site	Middlebrook S Mountain Sta	,		,	one			
2.6	Lot description	Middlebrook S				26 and 12	7 in DP 7	50941;	
	-	Mountain Sta	<i>tion</i> - Lots	20, 21, 2	23, 24, 30	- 39, 43,	50, 51, 53	3, 54, 60, 6	
		65 – 71, 74,		02, 106,	114 – 116	i, 118 in E	P 75093	9 and Lots	s /
2.7	Local Government Area and	and B in DP 1							
	Council contact (if known)	Upper Hunte	er Shire C	ouncii					
2.8	Project life	Staged Cons			'ears fror	n date of	approval		
		Operation:	20+ Yea	rs					
2.9	Alternatives	No							
		√ Yes,	complete	section 3.	2				
2.10	State assessment	No							
		Yes,	complete	Section 3	.5				
2.11	Component of larger action	√ No							
		Yes.	complete	Section 3	6				

### **3 Detailed project description**

NOTE: The proposal described here is the action(s) on which ALL subsequent decisions under the EPBC Act will be made, including decisions on significance, level of assessment (if needed) and approval (if needed). It is therefore important that the description is complete and includes all components and activities associated with the action, as well as any specific alternatives to be assessed. If certain related components are not intended to be included within the scope of the referral, this should be clearly explained in Section 3.6.

#### 3.1 Description of proposal

The proposed development is for the construction and operation of an Energy Park which will comprise the utilization of a combination of various energy producing technologies as outlined below.

#### Wind Turbine Generators:

It is proposed to construct approximately 12 turbines on Middlebrook Station and a maximum of 35 turbines within Mountain Station. Turbines are expected to be sited on a reinforced concrete footing approximately 4-6 metres in diameter. A 20 x 30 metre levelled pad is constructed from compacted earth material adjacent to the turbine to allow for safe and efficient erection of turbine components using heavy lifting cranes. A further clearance of at least 10 metres on all sides of the support pad is used to allow access for delivery of turbine parts efficient erection tolerance. Each turbine pad will therefore occupy an area of 30 x 40m or 0.12 hectare. The turbine towers are to be between 80 - 105m in height with a blade length of 45m. The turbines will be positioned along the ridgelines to enable access to prevailing winds. The siting of the turbines will predominantly be within existing cleared or pasture areas, removal of native vegetation will be kept to a minimum. Construction will require the clearing of a maximum of 0.12 happen turbine (totalling 5.8ha for all pads) to provide for construction of support pads and further clearing for access roads which will generally follow existing unformed tracks. It is proposed to remove a total of up to 8ha of White Box - Yellow Box - Blakely's Redgum Grassy Woodland and Derived Native Grassland for some of the proposed turbine pads and associated sections of road. The remaining turbine pads are situated within other vegetation communities such as Pasture or Box/Ironbark/Redgum Woodland which are not classified as endangered ecological communities within the EP&BC Act (1999).

#### Solar Thermal Plant:

The solar thermal plant will initially cover 12 hectares but may be upgraded to between 50-100 hectares of existing cleared / pasture land on the plateau of Mountain Station, it is expected that clearing of native vegetation will not be required for its construction.

#### Closed Loop Hydro Plant:

The closed loop hydro plant will be located within the central valley of Mountain Station where the steep slopes are able to provide sufficient water velocity to generate power. Construction of this plant will require the removal of a maximum of 0.75ha (10 x 750m) of White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland to provide for the construction of the north-western and southern sections of the pipeline and associated access/maintenance road (see Figure 1.2).

#### Visitors and Education Centre:

This centre is likely to occupy approximately 1.0ha and will be located on the cleared plateau of Mountain Station in the vicinity of the Solar Thermal Plant. The proposed area is already cleared and it is unlikely that further clearing for bushfire protection areas and access will be required.

#### Associated Infrastructure:

The proposal also includes infrastructure and associated developments such as:

- Construction depot / Maintenance Facility situated in existing cleared pasture.
- Substation and Switchyard situated in existing cleared pasture.
- Material storage areas associated with the maintenance facility.

- On-site quarries existing operating quarries located on Middlebrook station.
- Manager's residence located in existing cleared / pasture area near turbine No 22.
- Operational offices located near Maintenance facility.
- Construction access / permanent tracks existing roads will be used wherever possible.
- Bushfire asset protection zones unlikely to be required for Turbines, Closed Loop, Visitors Centre, Maintenance Facility or Solar Arrays.
- Water, electrical and telephone services including underground and/or overhead lines to be incorporated into road construction on-site.
- Connection of the power output to the state electricity grid via overhead transmission lines.

#### 3.2 Alternative locations, time frames or activities that form part of the referred action

#### Alternative Locations

Wherever possible, the locations of these facilities have been chosen to minimise the removal of native vegetation. The philosophy throughout this project / action is to retain as much native vegetation as possible with particular emphasis on retaining the critically endangered ecological community known as White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland (WBYBBRGW) as defined in the EP&BC Act (1999) and as defined in the Policy Statement for the White Box – Yellow Box – Blakely's Redgum Woodlands and Derived Native Grasslands (DEH, 2007).

#### Time Frames

The construction phase of this project is expected to be undertaken in a staged manner over a period of approximately 3-8 years. The project consists of several sub-projects, each with differing timetables and requirements. It is likely that construction of some projects will be completed before others are started. This staging is driven by and dependent on approvals, funding, numerous dissimilar construction and engineering tasks, advances in technology / science, and the necessity for design revisions or refinement as the project progresses.

#### Alternative Activities

Alternative activities within the proposed action/s are:

- Limiting the scale or placement of some projects within the proposal if they are likely to have a significant impact on the environment,
- Expanding the scale or placement of some projects within the proposal that are determined to have little or no significant impact on the environment.

#### 3.3 Previously considered alternatives and the 'do nothing' case

The alternatives are:

- Previous siting alternatives were considered, however the suitability of the subject site for wind turbines, the availability of unobstructed open spaces for the solar/thermal arrays and the previous disturbance within the majority of the proposed development area will minimise the immediate and long-term impacts on the local environment compared to other sites nearby.
- The closed loop hydro plant could be located elsewhere in the region, however, it is ideally situated near the other alternative power sources proposed as these facilities are likely to operate in tandem (ie. The wind turbine or solar power can be tapped to pump water to the top of the hydro loop in times of low power consumption on the state electricity grid, conversely, during times of high power consumption on the state grid the hydro loop can quickly generate peak electricity output for short periods). The site has the necessary topography and the other associated facilities / infrastructure nearby such as the required environmentally friendly, renewable/sustainable electricity from the other facilities within the proposed energy park and a viable connectivity to the state electricity grid.
- To not construct the electricity generating facilities that are clean, environmentally friendly and sustainable, and to rely on the continued use of fossil fuels or to switch to currently unpopular alternatives such as nuclear power generation.

 Do nothing – the subject site/s will continue to provide for pastoral use, pastoral use will still be a viable land use during construction and after the various projects have been completed. The site has been determined to be ideal for a wind farm with respect to the local topography and wind patterns. The do nothing approach will however prevent the use of the site as a 'wind farm / solar-thermal / closed loop hydro' electricity generation and visitor education facility.

#### 3.4 Context, planning framework and state/local government requirements

The context of the proposed action is to generate electricity in a clean, safe, non-polluting and renewable manner. The federal and state governments have a philosophy and responsibility to facilitate the production of cleaner and renewable energy and to reduce the carbon output from energy production. These aims are in line with the general opinion of the population. There are few planning frameworks for the construction of non-coal fired or hydro electricity schemes, other than continued general debate about reducing carbon outputs and to what degree or percentage should we reduce carbon output, and in what timeframe this should be achieved. This project is pro-active, environmentally friendly and entrepreneurial in its approach and would be unique within the region.

### 3.5 Environmental impact assessments under Commonwealth, state or territory legislation

The proposed action has been assessed within the Flora and Fauna Assessment Report (*Conacher Travers Pty Ltd*, 2007, Ref: 7091F) in accordance with the *Threatened Species Conservation Act* (1995). A total of seventeen (17) vegetation communities have been identified within the subject site by *Conacher Travers* or previous surveys (Hill *et al.*, 2001 and Peak, 2006). The community descriptions for those vegetation types mapped by the previous surveys and not sampled in this study have been adapted from their corresponding reports (Hill *et al.*, 2001 and Peak, 2006).

The communities;

- Dry Rainforest Closed Forest
- Ironbark Box Open Forest
- Ironbark Open Forest
- Ironbark-Stringybark Open Forest
- Grey Gum Ironbark Open Forest
- Grey Gum Stringybark Open Forest
- Grey Gum Apple Open Forest
- Slaty Gum Open Forest
- Box Woodland
- Box Ironbark Grassy Woodland (corresponds to White Box Yellow Box Blakely's Redgum Grassy Woodland and Derived Native Grassland)
- Box Ironbark Red Gum Woodland
- Exposed Ironbark Woodland
- Exposed Ironbark Cyperus Woodland
- Red Gum Woodland
- Exposed Acacia Low Open Woodland
- Rocky Heathland on Sandstone Benches
- Grassland with Scattered Trees

The distribution of the vegetation and proposed development within the subject site are depicted in Figures 2.1a and 2.1b.

A flora species list and general description of the vegetation communities is provided within the attached Flora and Fauna Assessment Report (Conacher Travers 2007) (Appendix 1).

The Flora and Fauna Assessment Report, with respect to the *NSW Threatened Species Conservation Act* (1995), concluded that:

- i) One endangered flora population (*Cymbidium canaliculatum*) was detected within the subject site.
- ii) Seven (7) threatened fauna species, the Glossy Black-Cockatoo, Speckled Warbler, Greycrowned Babbler, Grey-headed Flying-fox, Yellow-bellied Sheath tailed-bat, Common Bentwing-bat and the Eastern Cave Bat were observed within the subject site.
- iii) One endangered ecological community, White Box Yellow Box Blakely's Redgum Grassy Woodland and Derived Native Grassland was observed within the subject site.
- iv) The proposed development is not likely to have a significant effect on threatened species, populations or ecological communities or their habitats.
- v) A Species Impact Statement should not be required for the proposed development.

In relation to the EP&BC Act one critically endangered ecological community (White Box - Yellow Box - Blakely's Redgum Grassy Woodland and one vulnerable/threatened species (Grey-headed Flying Fox) were observed on the site.

#### 3.6 A staged development or component of a larger project

NOTE: The Minister for the Environment and Water Resources may not accept a referred action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act).

If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the EPBC Act Referrals Section (1800 803 772).

This referral is not a staged referral, or part of a larger action. The proposed actions are likely to be staged with respect to construction commencement and completion times, however, all proposed actions within this group of actions have been disclosed and assessed.

### **4** Affected environment

NOTE: You must attach a map(s)/plan(s) clearly showing the location of the action in relation to any matters of national environmental significance

The following figures are attached:

Figure 1.1 General layout sheet – Middlebrook Station Figure 1.2 General layout sheet – Mountain Station Figure 2.1 Vegetation Communities and Threatened Flora Locations -Middlebrook Station Figure 2.2 Vegetation Communities and Threatened Flora Locations -Mountain Station Figure 3.1 Fauna Survey and Threatened Fauna locations - Middlebrook Station Figure 3.2 Fauna Survey and Threatened Fauna locations - Mountain Station Figure 3.3 Prefered Transmission Line Route and Connection Options

The affected area consists of Pastoral Land with remnant native vegetation. The remnant vegetation is comprised of up to 17 different vegetation types ranging from pasture with sparse trees to various forest types. Two of the forest types (Box Woodland and Box – Ironbark Grassy Woodland) corresponds to White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland which is a Critically Endangered Ecological Community as listed in the *EP& BC Act* (1999). A total of up to 47 wind turbines are proposed to be erected within Middlebrook Station (12 turbines) and Mountain Station (35 turbines). Nine (9) of these wind turbines and associated access roads are located within the Box Woodland and Derived Native Grassland critically endangered ecological community within Middlebrook Station as shown in Figure 2.1 while a further 6 wind turbines and associated access roads are located within Mountain Station as shown in Figure 2.2. As a result, the proposed action will require the removal of a maximum of 8ha of White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland.

#### 4.1 Matters of national environmental significance

#### 4.1 (a) World Heritage Properties

A point search with a 25km buffer originating at a point central to Middlebrook and Mountain stations was undertaken on the Protected Matters Search Tool at <u>www.environment.gov.au</u>, (see Appendix 2). This search found no World Heritage Properties within the search area, therefore it is considered that the proposed action is not likely to have any detrimental impact on any World Heritage property.

#### 4.1 (b) National Heritage Places

The search tool (see Appendix 2) found no National Heritage Places within the search area, therefore it is considered that the proposed action is not likely to have any detrimental impact on any National Heritage Places.

#### 4.1 (c) Wetlands of International Significance (Ramsar)

The search tool found one (1) Wetland of International Significance within the search area. This wetland is the Hunter Estuary Wetlands which are located in the same catchment as the subject site. The Hunter Estuary Wetlands are situated approximately 125km south-east of the subject site, therefore it is considered that the proposed action is not likely to have any detrimental impact on any Wetlands of International Significance.

#### 4.1 (d) Listed threatened species and ecological communities

#### **Ecological Communities**

Two of the vegetation communities observed within the subject site correspond in part with the critically endangered ecological community, White Box, Yellow Box, Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands.

Detailed condition sampling was completed in accordance with the guidelines for assessment identified within the EPBC Act Policy Statements – White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands (DEH 2006).

The results of 15 approximately 0.1ha sample plots, identified 4 areas of this community that failed to adequately meet the understorey condition criteria set by the DEH (2006) for determining the presence of White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands. These areas were generally restricted to the severely overgrazed portions of Mountain Station.

The distribution of White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands within the subject site is provided in Figures 2.1 and 2.2. These remnants cover approximately 649ha of the subject site. The proposal is likely to impact on a maximum of 8ha or 1.2% of this communities extent within the subject site.

With regard to the Box Woodland present on the subject site, several criteria must be assessed to satisfy the requirements of the EP&BC Act (1999). Criteria identified within the *EPBC Act Administrative Guidelines on Significance July* (2000) are addressed below in order to determine the significance of the impact upon White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and whether the development is subsequently classed as a controlled action.

An action has, will have, or is likely to have a significant impact on a critically endangered or endangered ecological community if it does, will, or is likely to:

#### • lead to a long-term adverse affect on an ecological community, or

The areas of this remnant White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands present within the subject site have been highly disturbed by partial clearing of the tree and shrub layers, 'pasture improvement' activities, intensive grazing and trampling by livestock and moderate to high levels of weed invasion.

It is considered that the majority of the Box Woodland likely to be impacted by the proposal has already suffered long-term adverse affects and is unlikely to recover to its former structure and floristics without a comprehensive management plan and a large amount of effort and expense to rehabilitate the areas concerned.

It is considered that ongoing park activities associated with the Energy Park such as tourism access, maintenance of infrastructure etc. will have little impact on the habitat for the existing WBYBBRW ecological community.

The proposed action will require the removal of a maximum of 8ha or 1.2% of the total occurrence of this community within the subject site for the construction of the roads and footprints of the wind turbines.

#### • reduce the extent of a community, or

The areas of this remnant White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands present within the subject site have been highly disturbed by partial clearing of the tree and shrub layers, 'pasture improvement' activities, intensive grazing and trampling by livestock and moderate to high levels of weed invasion.

The distribution of White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands within the subject site is provided in Figures 1.1 and 1.2. These remnants cover approximately 649ha of the subject site. The proposed action will require the removal of a maximum of 8ha or 1.2% of the total occurrence of this community within the subject site for the construction of the roads and footprints of the wind turbines.

It is considered that the majority of the White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands likely to be impacted by the proposal has already suffered long-term adverse affects and is unlikely to recover to its former structure and floristics without a comprehensive management plan and a large amount of effort and expense to rehabilitate the areas concerned.

However, despite the low quality and low viability of this community within the subject site the removal of areas of vegetation within the subject site for the proposed development are likely to reduce the extent of this community locally.

#### • fragment an occurrence of the community, or

The remnants of White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands within the subject site are part of a mosaic of remnant trees in Pasture (grassland) that is extensive throughout the local area. The tree cover within the subject site and surrounding properties is not contiguous and therefore it is considered that the community is already fragmented. The proposed development is expected to remove some isolated poor quality remnants of this community however it will not further fragment this community within the local area.

#### • adversely affect habitat critical to the survival of an ecological community, or

The subject site has not been designated as habitat critical to the survival of White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands. Therefore the proposed development will not adversely affect habitat critical to the survival of White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands.

### • modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for the community's survival, or

The proposed development is not expected to significantly modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for the community's survival.

### • result in invasive species that are harmful to the critically endangered or endangered community becoming established in an occurrence of the community, or

The distribution of White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands within the subject site is provided in Figures 1.1 and 1.2. These remnants cover approximately 649ha of the subject site. The proposed action will require the removal of approximately 8ha or 1.2% of the total occurrence of this community within the subject site for the construction of the roads and footprints of the wind turbines.

The proposed development is expected to remove highly disturbed vegetation that is already affected by high levels of exotic weed invasion. The proposal is also likely to provide an opportunity to manage the site with regards to weeds and the intensive grazzing to minimise the future impact

of invasive species that are harmful to the critically endangered or endangered community in the local area.

#### • interfere with the recovery of an ecological community.

The proposed development is not expected to interfere with the recovery of Grassy White Box Woodland in the local area.

#### Birds

#### Swift Parrot (Lathamus discolor)

This species migrates from Tasmania and forages within woodlands with winter flowering eucalypts. The subject site provides suitable foraging habitat for this species. The proposed development is unlikely to impact upon this species or its habitat. This species was not observed within the subject site during detailed searches. This species would use the entire potential habitat within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of the species.

#### Superb Parrot (Polytelis swainsonii)

The Superb Parrot has a range of habitats from the River Red Gum forests of the Murray Riverina area to the Forests and Woodlands of the south-west slopes containing White Box, Yellow Box and Blakely's Red Gum. The Superb Parrot occurs from northern central south to the Barmah Forest area of northern Victoria (Blakers *et al.* 1984). Breeding is confined to Red Gum forests along the Murray and Edwards Rivers near Deniliquin and Mathoura; along the Murrumbidgee River from Wagga Wagga to about Darlington Point; and along the Lachlan River to near Cowra. Breeding occurs from September to December usually in a hollow branch or, sometimes in the hollow trunks of tall eucalyptus trees. (Higgins, P.J. 1999)

The subject site provides suitable foraging and roosting habitat for this species. The proposed development is unlikely to impact upon this species or its habitat. This species was not observed within the subject site during detailed searches. This species would use the entire potential habitat within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Australian Painted Snipe (Rostratula australis) – Syn. Rostratula benghalensis

The Australian Painted Snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled. Though some individuals are apparently resident in some areas, other individuals appear to be nomadic, temporarily occupying areas where suitable habitat exists.

The subject site provides very limited suitable foraging and roosting habitat for this species. This species was not observed within the subject site during detailed searches. The proposed development is unlikely to impact upon this species or its habitat as this species would use the entire potential habitat from within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Regent Honeyeater (Xanthomyza phrygia)

The Regent Honeyeater inhabits mostly dry eucalypt woodlands and forests dominated by box ironbark eucalypts; on inland slopes of Great Divide, especially associations in moister more fertile sites, along creeks, broad river valleys and on lower slopes of foothills. (Higgins, P.J., J.M. Peter & W.K. Steele 2001). Nectar is the principle food but sugary exudates from insects are also used, and insects are essential for breeding. (Oliver 1998, 2000). The Regent Honeyeater is known to breed along the western Slopes of the Great

Dividing Range in New South Wales (Bundarra-Barraba district, Capertee Valley). Occasionally breeding elsewhere (Franklin *et al* 1989. Schodde *et al.*, 1992).

The subject site provides suitable foraging and roosting habitat for this species. This species was not observed within the subject site during detailed searches. The proposed development is unlikely to impact upon this species or its habitat as this species would use the entire potential habitat from within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Mammals

#### Large-Eared Pied Bat (Chalinolobus dwyeri)

It is probable that the Large-eared Pied Bat forages for insects below the forest canopy. During the day these bats may roost in caves, mine tunnels and the abandoned nests of Fairy Martins (Dwyer, 1991). The Large-eared Pied Bat may also utilise tree hollows (Schultz *et. al.* 1994). The Large-eared Pied Bat is mainly found in drier habitat including dry sclerophyll and woodland, east and west of the Great Dividing Ranges. However Hoye and Dwyer (1995) suggest that from records of the species in sub alpine woodland, moist eucalypt forest and near rainforest, it may tolerate a greater range of habitats. The distribution of this bat ranges from inland and south-eastern QLD to central-eastern and north-eastern NSW (Parnaby 1992).

The subject site provides suitable foraging and shelter habitat for this species. The proposed development is unlikely to impact with this species or its habitat. This species was not observed within the subject site during detailed searches. This species would use the entire potential habitat within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Spotted-tailed Quoll (Dasyurus maculatus)

The Spotted-tailed Quoll inhabits a number of habitats including dry to moist open forests or closed forests containing rock caves, hollow logs or trees for shelter / breeding. Although the subject site provides some suitable foraging and breeding habitat, this species was not detected within the subject site.

The subject site provides suitable foraging and shelter habitat for this species. The proposed development is unlikely to impact with this species or its habitat. This species was not observed within the subject site during detailed searches. This species would use the entire potential habitat within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Eastern Long-eared Bat (Nyctophilus timoriensis).

In mainland Australia this species prefers semi-arid areas. Greater Long-eared Bats roost in tree hollows, fissures in branches and dried sheets of bark. (Churchill 1998). This species forages within the understorey feeding mostly on insects.

The subject site provides suitable foraging and shelter habitat for this species. The proposed development is unlikely to impact with this species or its habitat. This species was not observed within the subject site during detailed searches. This species would use the entire potential habitat within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Brush-tailed Rock-wallaby (Petrogale penicillata)

The Brush-tailed Rock-wallaby is found in suitable rocky areas in a wide variety of habitats including rainforest gullies, wet and dry sclerophyll forest, open woodland and rocky outcrops in semi arid country, where it feeds mainly on grasses and forbs.

The subject site provides suitable foraging and shelter habitat for this species. The proposed development is unlikely to impact with this species or its habitat. This species was not observed within the subject site during detailed searches. This species would use the entire potential habitat within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Grey-headed Flying-fox (*Pteropus poliocephalus*)

The Grey-headed Flying-fox is found in a variety of habitats including rainforest, mangroves, paperbark swamps, wet and dry sclerophyll forests and cultivated areas (Churchill, 1998). Grey-headed Flying-foxes congregate in large camps of up to 200,000 individuals, depending on availability of surrounding blossoming plants, from early until late summer (Churchill, 1998). Camps are commonly formed in gullies, typically not far from water and in vegetation with a dense canopy. Roost sites are an important resource where mating, birth and rearing of young occurs as well as providing refuge (Strahan, 1995).

The subject site provides suitable foraging and shelter habitat for this species. The proposed development is unlikely to impact with this species or its habitat. Two Greyheaded Flying-foxes were observed flying over the Glen Ridge on Middlebrook Station during nocturnal surveys conducted on the evening of the 9<sup>th</sup> May 2007. This species would use the entire potential habitat within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### **Ray-finned Fishes**

#### Murray Cod (Maccullochella peelii peelii)

The Murray Cod is the largest freshwater fish found in Australia. It is a long lived predator species that is highly territorial and aggressive. It occurs naturally in the waterways of the Murray–Darling Basin in a wide range of warm water habitats that range from clear, rocky streams to slow flowing turbid rivers and billabongs. (above info from DEWR info sheet, 2007). There are no waterways suitable for this species within the proposed development area. It is therefore considered that the presence of this species within the subject site is unlikely and that that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Reptiles

#### Namoi River Turtle (Elseya belli)

This species is known only from the headwaters of the Namoi and Gwydir Rivers, west of Armidale NSW, between 700 and 800m ASL (Cogger *et al.* 1993; Cann 1998). Localities in the two catchments are separated narrowly by the Nandewar Ra. Known localities include the Macdonald R. (also known as Muluerindie Ck) west of Uralla and Roumalla Ck near Kingston (Cogger *et al.* 1993). (above info from DEWR info sheet, 2007). The subject site is outside the known distribution of this species, therefore it is considered that the presence of this species within the subject site is unlikely and that that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Border Thick-tailed Gecko (Underwoodisaurus sphyrurus)

This species is patchily distributed throughout the north-western slopes and northern tablelands of NSW and the Stanthorpe region of southern Qld (Czechura & Covacevich 1985; Cogger et al. 1993). Occupied sites in NSW have been found between 550 and 1030m ASL (P. Spark in prep. 2001). The distribution in NSW is bounded by the top of the Great Dividing Range to the east, the Liverpool Range in the south and Gunnedah in the west (P. Spark in prep. 2001). (above info from DEWR info sheet, 2007). The subject site is outside the known distribution of this species, therefore it is considered that the presence of this species within the subject site is unlikely and that that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Plants

#### Cynanchum elegans (White-flowered Wax Plant)

This species is a climber or twiner with stems to 1 metre long. Small white flowers to 5mm long and 10 - 12 mm diameter appear in summer. Found from Gloucester to Wollongong in rainforest gullies and scrub and on scree slopes. Despite detailed targeted searches within suitable habitat, this species was not found within the subject site. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### *Digitaria porrecta* (Finger Panic Grass)

Finger Panic Grass is a loosely tufted grass growing to 60 cm tall. This species ccurs in NSW and Queensland. In NSW it is found on the North West Slopes and Plains, from near Moree south to Tambar Springs and from Tamworth to Coonabarabran. Occurs in Native grassland, woodlands or open forest with a grassy understorey, on richer soils. Frequently associated tree species are *Eucalyptus albens* and *Acacia pendula*. Flowering season is summer or late summer from mid-January to late February. Despite targeted searches within suitable habitat, this species was not found within the subject site. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Diuris sheaffiana (Tricolour Diuris) - Syn. Diuris tricolour

This species is a terrestrial orchid with up to three basal leaves 20 – 30cm long and up to 4mm wide. This species often grows in sclerophyll forest amongst grasses. The flowering period for this species is September to November. It is considered that the subject site provides sub-optimal habitat for this species due to the past and present land uses including grazing and the associated trampling. Despite targeted searches this species was not found within the subject site. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Ozothamnus tessellatus

A dense shrub which favours sandstone eucalypt woodland and is restricted to a few locations north of Rylstone. While currently located outside of the known distribution, the subject site provides potential habitat for this species. No specimens of this species were observed within the subject site during surveys. The proposal will not require the removal of this species habitat within the subject site. Large areas of suitable and known habitat for this species are retained within the local conservation network of the upper hunter, including Goulbourn River NP, Wollemi NP and the adjoining Towarri NP. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Prostanthera cryptandroides subsp. cryptandroides

This low-spreading shrub favours rocky ridgelines on Narrabeen Group Sandstones. No specimens of this species were observed within the subject site during surveys. The proposal will not require the removal of this species habitat within the subject site. Large areas of suitable and known habitat for this species are retained within the local conservation network of the upper hunter, including Goulbourn River NP, Wollemi NP and the adjoining Towarri NP. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species..

#### Rulingia procumbens

This species is a prostrate shrub with slender trailing stems to 30 cm long arising from woody stolons. The plant is stellate-hairy on all parts and grows in sandy sites. It is mainly confined to the Dubbo - Mendooran - Gilgandra region, also in Pilliga and Nymagee areas. This species flowers in early summer. Despite targeted searches this species was not found within the subject site. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Thesium australe

The flowering period for *Thesium australe* is Spring to Summer. The preferred habitat for *T. australe* is in Grassland or Woodland, often in damp sites. It is widespread in the northern half of NSW but is considered rare (Harden, 1994). Despite targeted searches within small areas of sub-optimal habitat, this species was not observed within the subject site. The previous land uses such as clearing, pasture improvement and livestock grazing on the subject site indicate that the presence of this species is unlikely. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### 4.1 (e) Listed migratory species

The Protected Matters Search on the DEWR web page lists the following migratory bird species as potentially occurring within the 25km buffer search area. These species are:

#### Migratory Terrestrial Birds

#### White-bellied Sea Eagle (Haliaeetus leucogaster)

This species is unlikely to occur within the subject site except if it overflew the area whilst migrating. It is unlikely that this species would hunt within the subject site due to a lack of large waterbodies supporting fish of suitable prey size. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### White-throated Needletail (Hirundapus caudacutus)

The White-throated Needletail inhabits most open spaces of sky above most terrains. This species migrates from its breeding grounds in Asia to Australia's north in the spring reaching the south-east by summer. The White-throated Needletail forages on insects on the wing rarely touching or landing on the ground, it may even roost on the wing although there are several records of roosting in trees etc. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Rainbow Bee-eater (Merops ornatus)

The Rainbow Bee-eater inhabits most woodland areas of Australia preferring more open terrain to thick forests. This species is insectivorous foraging mostly on larger insects, usually on the wing congregating in small flocks. The rainbow Bee-eater migrates from Australia's north, flying south to the southern states to breed in the summer. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Black-faced Monarch (Monarcha melanopsis)

The Black-faced Monarch inhabits rainforests, mangroves and eucalypt forests and woodland. This species is insectivorous foraging mostly by gleaning of tree foliage finding insects and occasionally sallying to take an insect on the wing. The Black-faced Monarch migrates in the summer from northern Australia to the south-eastern areas of Australia to breed, nesting in thick foliage generally within gullies. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Satin Flycatcher (Myiagra cyanoleuca)

The Satin Flycatcher inhabits a variety of habitats from forests and woodlands to mangroves and coastal heath. This species is insectivorous foraging within foliage and regularly sallying to take insects on the wing. The Satin Flycatcher migrates in the summer from northern Australia to the south-eastern areas of Australia to breed, nesting high in the outer branches of trees. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### Regent Honeyeater (Xanthomyza phrygia)

The Regent Honeyeater inhabits mostly dry eucalypt woodlands and forests dominated by box ironbark eucalypts; on inland slopes of Great Divide, especially associations in moister more fertile sites, along creeks, broad river valleys and on lower slopes of foothills.

(Higgins, Peter & Steele 2001). Nectar is the principal food but sugary exudates from insects are also used (Oliver 1998, 2000). The Regent Honeyeater is known to breed along the western Slopes of the Great Dividing Range in New South Wales. The subject site provides potential habitat for this species. This species was not observed on-site during the breeding season. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of this species.

#### **Migratory Wetland Birds**

The Protected Matters Search on the DEWR web page lists the following migratory wetland bird species as potentially occurring within the 25km buffer search area. These species are:

White Egret (*Ardea alba*), Cattle Egret (*Ardea ibis*), Latham's Snipe (*Gallinago hardwickii*), and Painted Snipe (*Rostratula benghalensis*)

The subject site has very limited wetland habitat which is restricted to small to medium sized farm dams, ponded waters associated with existing quarrying activities, and small streams few of which are semi-permanent. Few of these waterbodies support wetland or emergent vegetation. Due to the limited amounts and poor quality of available wetland within the subject site, and the retention of most of the existing wet habitats, it is considered that the action proposed is not likely to have an adverse effect on the life cycle of any migratory wetland bird species.

#### **Migratory Marine Birds**

The Protected Matters Search on the DEWR web page lists the following migratory marine bird species as potentially occurring within the 25km buffer search area. These species are:

Fork-tailed Swift (Apus pacificus), White Egret (*Ardea alba*), and Cattle Egret (*Ardea ibis*),

There is no marine habitat within the subject site. It is expected that migratory marine birds may overfly the subject site but are unlikely to forage or roost within the site. It is considered that the action proposed is not likely to have an adverse effect on the life cycle of any migratory marine bird species.

#### 4.1 (f) Nuclear actions

The proposed action is not a nuclear action, therefore it is expected that this action will not have any nuclear effects within the local area.

#### 4.1 (g) Commonwealth marine areas

No Commonwealth Marine Areas were listed within the output from the Protected Matters Search Tool (see Appendix 2). Therefore it is considered that the proposed action will have no effect on any Commonwealth Marine Areas.

#### 4.2 Important or unique aspects of the environment, if relevant

#### 4.2 (a) Soil and vegetation characteristics

#### Soils

The soil characteristics of the subject site are shallow to very shallow well to moderately drained Claustic Ridosols and Orthic Tenosols on crests and side slopes of the Wingen Maid soil landscape; Shallow to deep well to moderately drained Black Red and Brown Chromosols and Dermosols on crests and side slopes of the Ant Hill soil landscape; Moderately well drained, moderately deep Haplic Mesotrophic Black Dermosols across the plateau surfaces. These soil types are located throughout the wider local area and are not unique to the proposed development area.

#### Vegetation

A total of seventeen (17) vegetation communities have been identified within the subject site by *Conacher Travers* or previous surveys (Hill *et al.*, 2001 and Peak, 2006). Refer to Section 2.2 within the attached Flora and Fauna Assessment Report for details. Two vegetation communities described within the Flora and Fauna report correspond (wholly or in part) to the White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland community (WBYBBRGW) which is listed as a critically endangered ecological community within the *EP&BC Act* (1999). The proposed action will require the removal of approximately 8ha or 1.2% of the sites approximately 760.

#### 4.2 (b) Water flows, including rivers, creeks and impoundments

The subject site consists of gently sloping plains with steep-sided plateaus and rises (see Figures 1a and 1b). With regard to water flows including rivers, creeks and impoundments there is a small river in the eastern parts of Middlebrook Station. This stream is perennial however the flow is slow and usually only has significant flows during or shortly after storm events. Middlebrook and Mountain stations have numerous intermittent streams that only flow during and immediately following storm events. Impoundments within both properties consist of small to medium sized farm dams, most of which do not contain any wetland or emergent flora.

#### 4.2 (c) Outstanding natural features, including caves

There are numerous eroded or wind-sculpted caves in the exposed rocky steep rises and escarpments. These eroded escarpments are a visually appealing feature of the local area. The caves may contain suitable habitat for bird and bat roosts. The proposed action will not require the removal of any caves, therefore the proposed action is not expected to have a detrimental effect on the caves within the area.

#### 4.2 (d) Gradient

The gradients within the two properties are highly variable, from almost flat in the eastern half of Middlebrook Station and on top of the plateau in the central-southern parts Mountain Station, to the steep escarpments as the plateaus rise. Within both properties the slopes range from almost flat (2%) to near vertical (97-98%)

#### 4.2 (e) Buildings or other infrastructure

There are at least two disused rural dwellings within Mountain Station which do not have any official historical status. There is a currently occupied rural dwelling on Middlebrook Station, and not far away is an operating 'Farmstay' facility. Neither of these buildings have any official historical status. Other infrastructure within Middlebrook Station includes several gravel quarries some of which appear non-operating or disused. There is an existing operating heavy haulage road from these quarries which traverses Middlebrook Station southwards to the sealed public road.

#### 4.2 (f) Marine areas

There are no marine areas within the locality, therefore the proposed action is unlikely to directly impact upon any area of marine habitat.

#### 4.2 (g) Kinds of fauna

A comprehensive Flora and Fauna Assessment Report was undertaken for this project (*Conacher Travers Pty Ltd*, 2007, Ref: 7091F). This report contains vegetation community descriptions; lists of flora and fauna observed within the site; threatened flora and fauna species, populations and ecological communities which are listed within the *NSW Threatened Species Conservation Act* (1995) including their habitat potential; and assessments of the likely impact of the proposed action upon the flora and fauna. This Flora and Fauna Assessment Report is included as Addendum 1 to this referral.

#### 4.2 (h) Current state of the environment

#### Vegetation

The proposed development areas currently consist of Pasture under various remnant vegetation types. The surveys undertaken for the Flora and Fauna Assessment Report were undertaken in the latter stages of the recent drought (9<sup>th</sup> to 11<sup>th</sup> May 2007) and shortly after recent rains (12<sup>th</sup> to 14<sup>th</sup> June 2007) and cryptic flora surveys on 17<sup>th</sup> September 2007. The groundcovers during the drought survey period consisted of sparse, mostly dead grasses with few herbs. The ground layers during the second survey period was undergoing a flush of growth, mostly from exotic or annual herbs and forbs common to highly grazed land. It is expected that if rains continue, the ground layer will recover to its former state of a grassy pasture with some herbs.

#### Erosion

Erosion is present within the two properties, but only in a limited sense and not in any large areas. The erosion is limited to small areas associated with intermittent water flows and small areas of open pasture where only groundcovers are present, resulting in minor topsoil slippage on steeper areas.

#### Weeds

Much of the groundcover layer associated with the Pasture (with numerous overstorey vegetation types – see vegetation community descriptions in Addendum 1 – Flora and Fauna Assessment Report) is affected by varying degrees of weed infestation, mostly by common pasture weeds associated with sheep grazing. The level of weed invasion is more pronounced due to the sparse groundcover during the drought, and the high grazing pressure of the sheep, compared to the recent after rain flush of quick growing annuals which at the time of the second flora survey dominated over the slower growing grasses.

#### Feral animals

During the flora surveys several feral animals (pigs, goats and foxes) were detected either by direct observation or from tracks, scats or other marks. The numbers of any one of these feral animals were quite low.

#### 4.2 (i) Commonwealth Heritage Places and places on the Register of the National Estate

No Commonwealth Heritage Places were listed in the output from the Protected Matters Search Tool (see Appendix 2). Therefore it is concluded that no Commonwealth Heritage Places will be affected by the proposed action.

A total of 14 places on the Register of the National Estate (RNE) were listed in the output from the Protected Matters Search Tool (Appendix 2). These were;

#### Historic

Fitzgerald Bridge NSW Invermein NSW Kelvinside, Outbuildings and Surrounds NSW M Campbell and Company Stores (former) & Outbuilding NSW Murrurundi Urban Conservation Area NSW Railway Station NSW Scone Courthouse (former) & Theatre NSW Segenhoe Homestead and Outbuildings NSW St Aubins House NSW Natural Burning Mountain Nature Reserve NSW Cedar Brush Nature Reserve NSW Manobalai Nature Reserve (1978 boundary) NSW Mount Wingen (Burning Mountain) Area NSW Wingen Maid Nature Reserve NSW

The preferred transmission line route is route 1a which is shown in blue on Figure 3.3. The proposed electrical transmission lines are predominantly existing road reserves and freehold land. The transmission lines are likely to cross areas designated as Travelling Stock Routes (TSR). The TSRs likely to be impacted by the proposed transmission lines are not listed as any Commonwealth Heritage Place and are not listed on the Register of the National Estate.

The proposed action is not to be undertaken by any Commonwealth agency, it is not located near any of these RNE places, nor is it to be undertaken within any Commonwealth Land. Therefore it is considered that the proposed action will not have a detrimental effect on any of these places.

#### 4.2 (j) Known Indigenous heritage values

The indigenous heritage values of the proposed development area is unknown at this time. Further research or surveys would be required to ascertain the indigenous heritage value of the site. The proposed action is not within Commonwealth Land, nor is it to be undertaken by any Commonwealth agency.

#### 4.2 (k) Other important or unique values of the environment

The following State and Territory Reserves are known in the region, these are:

Burning Mountain Nature Reserve, NSW Cedar Brush Nature Reserve, NSW Manobalai Nature Reserve, NSW Towarri National Park, NSW Wingen Maid Nature Reserve, NSW

It is expected that the proposed action will not have a direct detrimental effect upon any of these State and Territory Reserves.

#### 4.2 (I) Tenure of the action area (eg freehold, leasehold)

The subject sites (Middlebrook Station and Mountain Station) are freehold. The land for the proposed transmission lines is predominantly Road Reserve

#### 4.2 (m) Existing land uses

The proposed development areas are currently used as rural lands for sheep and cattle grazing.

#### 4.2 (n) Proposed land uses

The proposed development area is to be used as an environmentally friendly electricity generation facility using three different technologies (Wind Turbines, Solar Arrays and a Closed Loop Hydro facility). It is expected that the surrounding lands will continue to be used for stock grazing following the construction of the generating facilities.

A narrow corridor is required for the transmission lines to connect the power output to the state electricity grid. These transmission lines are expected to be installed mostly along existing road reserves.

### **5 Nature and extent of likely impacts**

### 5.1 Likely impacts on matters of national environmental significance (NES)

#### 5.1 (a) Likely impact on the world heritage values of a declared World Heritage property

The proposed action is not within or near any World Heritage properties, therefore it is considered unlikely that the proposed action will adversely impact upon any declared World Heritage property.

#### 5.1 (b) Likely impact on the heritage values of a listed National Heritage place

No listed National Heritage places were present in the output from the Protected Matters Search Tool on the DEWR website (See Appendix 2). It is therefore unlikely that the proposed action will directly impact upon the heritage values of any National Heritage place.

#### 5.1 (c) Likely impact on the ecological character of a declared Ramsar wetland

One Ramsar Wetland (The Hunter Estuary Wetlands) is listed in the output from the Protected Matters Search Tool on the DEWR website (see Appendix 2). The Hunter Estuary Wetlands are located approximately 125km to the south-east of the proposed action. It is therefore concluded that the proposed action is not likely to have a direct impact upon the Hunter Estuary (Ramsar) Wetlands.

### 5.1 (d) Likely impact on the members of a listed threatened species or ecological community, or their habitat

Two Grey-headed Flying Foxes which are listed as Vulnerable within the EP&BC Act (1999) were observed flying westwards over the northern part of Middlebrook Station during nocturnal fauna surveys on 9<sup>th</sup> May 2007. This species would use large areas of the potential roosting and foraging habitat within the local area and not the subject site exclusively. Therefore, the action proposed is not likely to have an adverse effect on the life cycle of this species.

One critically endangered ecological community is present within the proposed development area. This is the White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland community (WBYBBRGW). It is planned to remove approximately 8 hectares and retain a further 752 hectares of WBYBBRGW present within the two properties. The removal of approximately 8 hectares is required to construct the wind turbines and associated access roads and services that are located within this community on Middlebrook and Mountain Stations.

#### 5.1 (e) Likely impact on the members of a listed migratory species or their habitat

No listed migratory species were observed within or overflying the subject site, notwithstanding, it is expected that the proposed action will not adversely affect any listed migratory species or its habitat.

#### 5.1 (f) Likely impact on the environment in part of the Commonwealth marine area

There are no marine areas within the locality, no marine areas were listed in the output from the Protected Matters Search Tool (see Appendix 2), therefore the proposed action is unlikely to directly impact upon any area of marine habitat.

## 5.2 Likely impacts for nuclear actions, actions affecting Commonwealth land or actions taken by the Commonwealth

Two Commonwealth lands were listed in the output from the Protected Matters Search Tool on the DEWR website (see Appendix 2), these were:

- Communications, Information Technology and the Arts Australian Postal Corporation,
- Communications, Information Technology and the Arts Telstra Corporation Limited.

The proposed action is not upon either of these Commonwealth lands, therefore the proposed action is not likely to have a detrimental effect upon these lands.

The proposed action is not a nuclear action, it is not to be undertaken by the Commonwealth or any Commonwealth Agency, nor will it affect Commonwealth Land. Therefore it is considered that the proposed action will not have a detrimental effect upon any Commonwealth Land.

### 6 Measures to avoid or reduce impacts

As stated earlier in Section 3.2, - The philosophy throughout this project / action is to retain as much native vegetation as possible with particular emphasis on retaining the critically endangered ecological community known as White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland (WBYBBRGW) as defined in the EP&BC Act (1999) and as defined in the Policy Statement for the White Box – Yellow Box – Blakely's Redgum Woodlands and Derived Native Grasslands (DEH, 2007).

It is planned to remove a maximum of 8 hectares and retain a further 641 hectares of WBYBBRGW present within the two properties. The removal of approximately 8 hectares is required to construct the wind turbines, parts of the Hydro Loop, and associated access roads and services that are located within this community on Middlebrook and Mountain stations. The WBYBBRGW to be removed represents 1.2% of the total occurrence of WBYBBRGW known to occur within the two station properties.

#### Wind Turbines

The removal of approximately 3 hectares of WBYBBRGW is required to construct 15 hardstand areas located within or close to the WBYBBRGW vegetation community. Each area will act as a stable base and anchor for the wind turbines and is to be 20 x 30m consisting of compacted earth which will be revegetated with a clearance of a further 10m of vegetation on all sides, totalling 0.2ha per pad. In addition, some sections of access roads will need to be constructed through the WBYBBRGW. These roads will generally follow the existing unformed tracks within the proposed development areas, however some widening to 5m wide is likely to be required, necessitating the removal of up to 4 hectares of WBYBBRGW along the roadsides in some sections of road.

#### Hydro Loop

A further 0.75 hectare of WBYBBRGW will require clearing for the construction of the proposed Closed Loop Hydro pipeline which traverses through the WBYBBRGW in the north-western and southern parts of the loop. The clearing required for the pipeline construction and maintenance track is expected to be 10 metres wide (6m wide for the track and other infrastructure, and 4m for the pipeline) and approximately 750 metres long, totalling approximately 0.75 hectare.

#### Impact Reduction

Wherever possible the proposed facilities have been designed and located to minimise the impacts upon the local environment.

- The placement of these electricity generating facilities is mindful of retaining as much native vegetation as possible with particular emphasis on retaining the critically endangered ecological community known as White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland (WBYBBRGW) as defined in the EP&BC Act (1999) and as defined in the Policy Statement (DEH, 2007). As a result, wherever possible the proposed facilities have been located in existing cleared areas or in areas where the vegetation is more disturbed than elsewhere. The planning process for this project is under constant review due to advances in technology, changing legislation and other matters, therefore minor deviations from the current proposal are most likely to be achievable.
- The proposed development is expected to require the removal of approximately 8 hectares of White Box Yellow Box Blakely's Redgum Grassy Woodland and Derived Native Grassland. The two properties will therefore retain approximately 752 hectares of this critically endangered ecological community.
- The wind turbines have been widely separated which will reduce the potential for a phenomenon known as 'flicker', where the visual effect of the blades crossing each

other causes an annoying interference pattern to develop which is an undesirable visual effect.

- This wide separation of the wind turbines will lessen the overall or general visual impact of the wind farm. The wide separation does not present itself as a 'wall' of impeller blades.
- The wide separation of the turbines is also beneficial by allowing native or migratory species to detect and negotiate the spaces between the turbines in order to fly through the wind farm safely. This is expected to significantly reduce the strike-rate on native bird species.
- The Solar Arrays and Closed Loop Hydro facilities are located on the plateau and/or in a hollow such that they are not visible from surrounding lands. This removes any visual impact that these electricity generating facilities might have upon neighbouring properties. Nevertheless, some of the wind turbines will be highly visible from certain aspects surrounding the sites.

### 7 Conclusion on the likelihood of significant impacts

NOTE: Under the EPBC Act, you must identify in the referral whether or not you believe significant impacts on the matters protected under the Act are likely. If you identify that significant impacts are likely, you must identify the relevant protected matters in section 7.2.

#### Do you THINK your proposed action is likely to have significant impacts?



No, complete section 7.1

Yes, complete Section 7.2

#### 7.1 Proposed action is NOT LIKELY to have significant impacts

#### Key reasons

The proposed action is likely to remove a maximum of approximately 8 hectares of the critically endangered ecological community known as White Box – Yellow Box – Blakely's Redgum Grassy Woodland and Derived Native Grassland (WBYBBRGW). The remaining 752 hectares of the WBYBBRGW ecological community present within the subject sites will be retained. There are also other areas of WBYBBRGW within the local area which will not be impacted upon by this action.

Comprehensive bird surveys within the subject site were undertaken in accordance with Wind Farms and Birds: Interim Standards for Risk Assessment (Auswind / Brett Lane and Associates Pty Ltd, 2005). No bird species listed within the EPBC Act (1999) likely to suffer bird strike from the wind turbine blades were observed within the subject site

#### 7.2 Proposed action is LIKELY to have significant impacts

#### Matters likely to be impacted

sections 12 and 15A (World Heritage)
sections 15B and 15C (National Heritage places)
sections 16 and 17B (Wetlands of international importance)
sections 18 and 18A (Listed threatened species and communities)
sections 20 and 20A (Listed migratory species)
sections 21 and 22A (Protection of the environment from nuclear actions)
sections 23 and 24A (Marine environment)
sections 26 and 27A (Protection of the environment from actions involving Commonwealth land)
section 28 (Protection of the environment from Commonwealth actions)

#### Key reasons

n/a - see Section 7.1

### 8 Assessment approach under the EPBC Act

NOTE: If a decision is made that a proposal needs approval under the Act, the Minister will also decide the assessment approach needed to satisfy the objectives of the Act. While the information you have provided in this referral will be taken into account in making this decision, the final decision rests with the Minister.

#### Level of assessment

Bilateral Agreement appliesAccredited assessmentAssessment on referral informationPreliminary informationPublic Environment ReportEnvironmental Impact StatementCommission of InquiryNo comment/Not sure

Key reasons

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**9 Environmental history of the responsible party** NOTE: The EPBC Act Regulations provide for the environmental history of the party proposing to take the action to be taken into account when deciding the assessment approach for actions that need approval under the Act.

		Yes	No
9.1	<ul><li>Does the party taking the action have a satisfactory record of responsible environmental management.</li><li>If Yes, provide details</li></ul>	<ul> <li>Image: A start of the start of</li></ul>	
9.2	<ul> <li>Is the party taking the action subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</li> <li>If Yes, provide details</li> </ul>		~
9.3	<ul> <li>For an action for which a person has applied for a permit under the EPBC Act, is the person making the application subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</li> <li>If Yes, provide details</li> </ul>		~
9.4	<ul> <li>If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?</li> <li>If Yes, provide details of environmental policy and planning framework</li> </ul>	~	

### **10 Information sources and attachments**

#### 10.1 References

- Australian Wind Energy Association (July 2005) Wind Farms and Birds: Standards for risk Assessment.
- Blakers, M., Davies, S., and Reilly, P.N (1984) *The Atlas of Australian Birds*. RAOU Melbourne University Press.
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- Cogger, H.G., E.E. Cameron, R.A. Sadlier & P. Eggler (1993). *The Action Plan for Australian Reptiles*. [Online]. Australian Nature Conservation Agency. ANCA, Canberra. Available from: <u>http://www.environment.gov.au/biodiversity/threatened/action/reptiles/index.html</u>.
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- Franklin.,D.C. Menkhorst.,P.W. Robinson.,J.L. (1989) *Ecology of the Regent Honeyeater* <u>Xanthomyza phrygia</u> in Emu Vol.89 Pt.3 Sept.1989
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- Higgins, P.J., J.M. Peter & W.K. Steel. (Eds) 2001. *Handbook of Australian New Zealand and Antartic Birds. Volume 5: Tyrant-flycatchers to Chats.* Oxford University Press, Melbourne.

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- Oliver, D.L. (2000) Foraging Behaviour and Resource Selection of the Regent Honeyeater Xanthomyza phrygia in Northern New South Wales. In Emu Vol.100 Pt.1 March 2000.
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- Schultz, M., deOliviera, M.S. and Eyre T.J. (1994) Notes on the Little Pied Bat *Chalinolobus pictatus* in Central Queensland. *Queensland Naturalist* 33:35-38.

Spark, P. (2001). Northwestern Ecological Services.

Strahan, R. (Ed)(1995) The Mammals of Australia The Australian Museum/Reed Books Sydney.

Threatened Species Conservation Act (1995), New South Wales Government

#### **10.2 Reliability of information**

#### 10.3 Attachments

You must attach	figures, maps or aerial photographs showing the project locality (section 2)	$\checkmark$
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 4)	V
lf relevant, attach	copies of any state or local government approvals and consent conditions (section 3.4)	
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 3.5)	$\checkmark$
	copies of any flora and fauna investigations and surveys (section 4)	$\checkmark$
	technical reports relevant to the assessment of impacts on protected matters and that support the arguments and conclusions in the referral (section 4 and 5)	$\checkmark$
	report(s) on any public consultations undertaken, including with Indigenous Stakeholders (section 4)	





Flora and fauna survey locations are approximate and have not been fixed by land surve





Flora and fauna survey locat	ions are approximate and have not been fixed by land	d survey.	
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		ue, Mt. Penang Parklands, Highway, Kariong NSW 2250	
TRAVERS		0 0677 Fax (02) 4340 2367	Ver.FX By.SC
	e-mail: ecology	@conachertravers.com.au	07/01/08 Ref.No.CE40
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Figure	3.3	-
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Transmission Line options

X Rd, Suburb

Source: DLWC 1:25,000 Aerial Photograph,

**11 Signatures and declarations** NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (Section 489, EPBC Act).

	Project title	
11.1	Party who prepared the referral	I declare that the information contained in this form is, to my knowledge, true and not misleading. I request that the person named in 11.3 below (if any) be designated as the proponent for the action.
	Signature	P. a. Conarke.
	Date	21 January 2008
	Full name	Phillip Anthony Conacher
11.2	Party who is responsible for action	I declare that the information contained in this form is, to my knowledge, true and not misleading.
	Signature	5 January 2008
	Date	S January 2000
	Full name	Mark Dixon
11.3	Proponent (complete only if different from 11.2)	I, being the person nominated in Section 1.3 of this referral form as the nominated proponent (or agent acting on behalf of), agree to be designated as the proponent for the action described above if it is decided that the action requires approval under Part 9 of the EPBC Act.
	Signature	
	Date	
	Full Name	

If the referring party is a small business (fewer than 20 employees), estimate the time, in hours and minutes, to complete this form (include your time reading the instructions, working on the questions and obtaining the information and time spent by all employees in collecting and providing this information).

Hours	Minutes
46	

### **APPENDIX II**

### DEPARTMENT OF ENVIRONMENT, WATER, HERITAGE AND THE ARTS REFERRAL DETERMINATION



Australian Government

Department of the Environment, Water, Heritage and the Arts

#### Notification of REFERRAL DECISION – not controlled action

Kyoto Alternative Energy Park, Scone, NSW (EPBC 2008/3979)

This decision is made under Section 75 of the *Environment Protection and Biodiversity* Conservation Act 1999 (EPBC Act).

person named in the referral	Pamada Pty Ltd
proposed action	Construction of an Energy Park at Middlebrook Station and Mountain Station, Scone NSW, as described in referral documentation received on 22 January 2008 and in additiona information received on 28 February 2008.
Referral decision: Not a	controlled action
status of proposed action	The proposed action is not a controlled action.
Person authorised to me	ake decision
	ake decision Cathy Skippington Assistant Secretary Environment Assessment Branch
Person authorised to ma Name and position signature	Cathy Skippington Assistant Secretary