

Guidelines for the preparation of a

Development Proposal and
Environmental Management Plan

for

Eureka Funds Management
WHITE ROCK WIND FARM
(Robbins Island)

Board of the Environment Protection Authority
December 2010



Please note that that this document combines both General Guidelines and Project Specific Guidelines.

RTI-DL-RELEASE-DPI/PINE

TABLE OF CONTENTS

GENERAL INFORMATION FOR THE PROPONENT	4
<i>General</i>	<i>4</i>
<i>Objectives and content</i>	<i>4</i>
<i>Commonwealth environmental approval</i>	<i>5</i>
<i>Consultation and submission of draft document</i>	<i>5</i>
<i>Submission</i>	<i>6</i>
<i>Structure and content</i>	<i>6</i>
CONTENTS OF THE DPEMP	7
1. INTRODUCTION	8
2. PROPOSAL DESCRIPTION	8
2.1 Proposal outline	8
2.2 Site plan	10
2.3 General location map	11
2.4 Off-site infrastructure	11
2.5 Technical and management alternatives	12
3. THE EXISTING ENVIRONMENT	13
3.1 Planning aspects	13
3.2 Environmental aspects	13
3.3 Socio-economic aspects	14
3.4 Heritage aspects	14
3.5 Alternative sites	14
4. POTENTIAL EFFECTS AND THEIR MANAGEMENT	15
Key issues	15
4.0 Guidance for preparation of this section	17
4.1 Air emissions	19
4.2 Liquid waste	19
4.3 Groundwater	20
4.4 Noise emissions	20
4.5 Solid and controlled waste management	21
4.6 Dangerous goods and environmentally hazardous materials	21
4.7 Biodiversity and natural values	22
4.8 Marine and coastal	27
4.9 Greenhouse gases and ozone depleting substances	27
4.10 Heritage	28
4.11 Land use and development	29
4.12 Visual effects	30
4.13 Socio-economic issues	30
4.14 Health and safety issues	30
4.15 Hazard analysis and risk assessment	31
4.16 Fire risk	31
4.17 Infrastructure and off-site ancillary facilities	31
4.18 Environmental management systems	31
4.19 Cumulative and interactive effects	31
4.20 Traffic impacts	32
4.21 Air Transport impacts	32
4.22 Impact on recreational boating	32
4.23 Communication interference	32
5. MONITORING AND REVIEW	33
6. DECOMMISSIONING AND REHABILITATION	33
7. COMMITMENTS	33
8. CONCLUSION	33
9. REFERENCES	33
10. APPENDICES	33
GLOSSARY	34

GENERAL INFORMATION FOR THE PROPONENT

General

The *Environmental Management and Pollution Control Act 1994* (EMPC Act) requires the Board of the Environment Protection Authority ('the Board') to provide guidance to the proponent about what should be included in the case for assessment.

These guidelines provide general information on preparing a Development Proposal and Environmental Management Plan (DPEMP) for an activity being assessed by the Board under the EMPC Act.

Not all issues nominated in these guidelines will have the same degree of relevance to all proposed activities. Depending on the nature of the proposed activity and its location, some of the issues may be more relevant than others, while others will not be applicable at all. The level of detail provided on other issues should be appropriate to the level of significance of that issue for the proposal. It is essential that the DPEMP be focussed on the key issues for the proposal.

These guidelines should not be interpreted as excluding from consideration other matters that emerge as significant from environmental studies, public comments or otherwise during the course of the preparation of the DPEMP.

Objectives and content

The DPEMP should aim to provide:

- a) A source of information from which individuals and groups may gain an understanding of the proposal, the need for the proposal, the alternatives, the environment that it could affect, the effects that may occur and the measures that will be taken to minimise any adverse effects, including specific management commitments (see below).
- b) A basis for public consultation and informed comment on the proposal.
- c) A framework against which decision makers (and in particular the Board and the local Council) can consider the proposal and determine the conditions under which any approval would be given.

The DPEMP should provide details of the proposal, describe the existing environment in the vicinity of the proposal site, identify all significant environmental, social, health and economic effects associated with the proposal, detail proposed measures to avoid or reduce potential adverse effects and identify opportunities for protection and enhancement of the environment.

While it is recognised that many construction and operational details may not have been finalised at the time the DPEMP is submitted for assessment, the information presented in the document should be as up to date as possible. Where information is unavailable or details have not yet been finalised, estimates and the range of alternative options should be provided. It should be noted, however, that sufficient technical detail must be provided to enable an appropriate level of assessment to be undertaken.

The main text of the DPEMP should be written in a clear and concise style that is easily understood by the general reader. Technical terminology should be avoided as far as possible. The detailed technical data and supplementary reports necessary to support the main text should be included in appendices. All sources of information should be referenced. An indication should also be given of the currency of the information used and how the reliability of the information was tested. In particular, the degree of confidence attached to any predictions should be indicated. It is recommended that information be presented on maps, diagrams and site plans to enhance the level of understanding.

Where sensitive information needs to be provided (e.g. information on production processes, or sites or areas of conservation, scientific, archaeological and cultural heritage or other special

significance), this information should be provided in a separate, confidential appendix. A comment should be provided in the DPEMP to the effect that the information has been so provided.

Specific management commitments must be clearly identified in the text and included in the commitments table referred to in Section 7 of these guidelines.

Where appropriate, refer to information provided in other sections to minimise duplication.

The DPEMP should contain a summary table showing compliance with these guidelines.

Commonwealth environmental approval

In addition to Tasmanian requirements, the Australian Government has a role in the environmental assessment and approval of the proposal.

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), Australian Government approval is required for an action which has, will have, or is likely to have, a significant impact on a matter of national environmental significance or on Commonwealth land. The matters of national environmental significance are World Heritage properties, National Heritage Places, wetlands of international importance (Ramsar wetlands), nationally listed threatened species and communities, nationally listed migratory species, Commonwealth marine areas, and nuclear actions.

The Australian Government has determined that this proposal is a controlled action on the grounds that it is likely to have a significant impact on the following matters protected by the EPBC Act:

- Listed threatened species and communities, sections 18 and 18A; and
- Listed migratory species, sections 20 and 20A.

Information on the EPBC Act can be obtained from the Commonwealth Department of Sustainability, Environment, Water, Population and Communities' website at www.environment.gov.au/epbc/ or by calling 1800 803 772.

The Australian and Tasmanian Governments have signed a bilateral agreement relating to impact assessment under section 45 of the EPBC Act which effectively accredits the State assessment process. At the time of the controlled action decision for the White Rock Wind Farm it was anticipated that the proposal would be assessed under the bilateral agreement between Tasmania and the Commonwealth. However, it was subsequently realised that the bilateral cannot be utilised in this instance because the transmission line associated with the wind farm does not form part of the activity being assessed by the EPA Board under the EMPC Act. The Tasmanian and Commonwealth agencies have agreed to work together to avoid unnecessary regulatory duplication and have agreed to a co-ordinated assessment approach. Under this approach, State and Commonwealth representatives will liaise closely to ensure that the DPEMP required under Tasmanian legislation also satisfies the Commonwealth's information requirements for the wind farm component of the proposal (the impacts of the transmission line will be assessed independently by DSEWPaC). The DPEMP should specifically describe the implications of the wind farm proposal for the relevant EPBC Act controlling provisions. It should contain a summary table showing that it addresses the matters specified in Schedule 4 of the Commonwealth *Environment Protection and Biodiversity Conservation Regulations 2000*.

Consultation and submission of draft document

Environmental aspects of the proposal will be assessed by the Board, while planning aspects of the proposal will be assessed by the relevant planning authority (Council). The Board has authorised the EPA Division to undertake the administrative tasks and establish the information base to inform its decision making on its behalf. As such, close consultation with the EPA Division and the relevant planning authority during the preparation of the DPEMP is therefore recommended. It is recommended that the proponent submit a draft DPEMP to both Council and the EPA Division for review prior to its finalisation. Please note that draft documents may be

rejected without detailed review if they are incomplete, contain significant formatting or typographical errors or do not comply with these guidelines. More than one draft may be necessary before the document is considered suitable for public release.

Following the public consultation phase, the DPEMP may require amendment as a result of consideration of public and government agency submissions. This generally takes the form of a supplement to the DPEMP.

Submission

The DPEMP is to be submitted in a printed format and in electronic format for use with a word processor (such as Microsoft Word), and suitable for publishing on the internet (preferably PDF format). The Board will inform the proponent of the number of copies (and format) required.

Copies are to be made available to the public upon request at no charge or for a nominal fee, in either printed or electronic format (CD ROM). Arrangements to display the DPEMP on the internet (whether on the proponent's or the Department's web site) will also need to be put place.

Documents should be able to be downloaded over slower internet connections. Images within the document should be optimised for the internet and font choices should be restricted to those most commonly used. Being judicious about the number of images and/or design elements can avoid unnecessarily adding to the file size. Large files should be broken into multiple documents.

Structure and content

The following sections have been set out in a manner which may be adopted as the structure for the DPEMP. The proposed structure of the DPEMP must focus on the key issues for the proposal as outlined in these guidelines.

Any significant departure from the requirements and intent of these guidelines must be approved by the assessing agencies.

RTI-DL-RELEASED-DRAFT

CONTENTS OF THE DPEMP

FOREWORD

This section should briefly outline the assessment and approvals process and explain the function of the DPEMP in this process.

TABLE OF CONTENTS

This section should contain a table of the contents of the report with reference to the relevant page numbers. It should also contain a list of figures and tables.

EXECUTIVE SUMMARY

This section should provide an executive summary of the DPEMP to give a clear and concise overview of the proposal and its environmental implications. It should contain headings corresponding to the main section headings of the DPEMP.

For larger DPEMPs, it is recommended that the executive summary be written as a stand alone document, able to be provided on request to interested parties who may not wish to read or purchase the full DPEMP.

RTI-DL-RELEASE-DPRWE

1. INTRODUCTION

This section should provide information on the following:

- a) Title of the proposal.
- b) Name and address of the proponent and general background, such as relevant development or operational experience. Where the proponent is a registered company, its Australian Company Number and Registered Office address should be included.
- c) The environmental record of the proponent.
- d) Relevant background information on the proposal, including the current status of the proposal, a general overview of the principal components of the proposal and the proposal location, the objective, rationale and need for the proposal, anticipated establishment costs, likely markets for the product, and the possibilities for future expansion.
- e) An examination of how the proposal relates to any other proposals that have been or are being developed or that have been approved in the region affected by the proposal.
- f) Environmental legislation, standards and guidelines that will be applicable (such as policies, regulations and industry codes of practice).
- g) Other relevant Commonwealth, State and Local Government policies, strategies and management plans with which the proposal would be expected to comply.
- h) Details of the nature and results of public consultation undertaken by the proponent during project planning and preparation of the DPEMP, as well as any proposals for further public consultation during and beyond project implementation.

2. PROPOSAL DESCRIPTION

This section should provide a full description of the proposal, including the construction, commissioning, operational and decommissioning phases, as well as any infrastructure and off-site ancillary facilities required for the proposal.

2.1 Proposal outline

This section should provide a detailed description of key physical components of the proposal, including their function, composition, size, capacity, operational life, technical and performance requirements, inter-relationships and method of construction, operation and maintenance. It should clarify which aspects of the proposal are, or are not, to be assessed as part of this proposal. It should include a map which clearly defines the area which is the subject of this application. Project components whose status may not be apparent include:

- Quarries for the provision of construction materials (particularly if they lie beyond the area of the main wind farm site);
- The transmission line beyond the wind farm boundary;
- The physical access across Robbins Passage; and
- The extent of the area at the mainland end of the Robbins Passage crossing which is included in this application.

The following information should typically be provided.

2.1.1 General

- a) The major items of equipment (including pollution control equipment) and on-site facilities should be described. Detailed technical information on major items of equipment may be included in appendices. Details of wind turbine specifications, transmission line and ancillary facilities such as control stations, external transformers, electricity sub-stations, maintenance facilities, underground infrastructure, new and upgraded access tracks should be included. The proposed method of crossing Robbins Passage for both physical access and power transmission should be specified. The proposed generating capacity, location, number and dimensions of wind turbines should be specified.
- b) An energy balance, i.e. the ratio between the amount of primary energy used for construction and operation of the wind farm and the amount of energy which the wind farm will supply throughout its lifetime, should be prepared. Consideration should be given to energy used for manufacturing, transport, installation, operation, maintenance and repairs as well as material recycling after decommissioning. The expected energy payback time should be specified.
- c) The width of the proposed transmission line corridor should be specified (where it forms part of this application).
- d) Energy requirements for the proposal should be outlined and the means of meeting this demand described.
- e) All sources of waste (liquid, atmospheric or solid) including by-products from the various stages of the process should be identified and the wastes characterised and quantified. Any foreseeable variations in waste generated during the start-up and operational phases should be identified and any temporary storage requirements specified.
- f) Facilities to collect and treat wastes should be described together with the resultant concentrations and mass loads of pollutants to be emitted after treatment. The dynamic performance of waste treatment systems is acknowledged and estimates of performance ranges are required. Maintenance requirements should be included.
- g) Any proposed new point source wastewater discharge points must be identified.
- h) Any proposed new point source atmospheric discharge points must be identified.
- i) All major sources of noise must be identified.
- j) Details of production capacity and production rates for relevant processes including both peak rates and daily average rates. Include proposed annual production rates.
- k) The hours of operation for the proposal (hours per day and specific days per week) including any seasonal variations.
- l) The volume, composition, origin, destination and route for vehicle movements (including road, rail, shipping and air) likely to be generated during the operational phase, including a break-down for over-dimension and heavy road vehicles.

2.1.2 Construction

- a) A step-by-step description and timetable for significant activities during the construction phase of the proposal. Indicative timeframes for the completion of major steps, and the likely sequencing of steps.
- b) An outline of any proposed site preparation works involved for the wind farm site and transmission line, including temporary and permanent removal of vegetation.
- c) Estimates of the quantities of major raw materials required for construction activities (such as sand, aggregate, fill, road gravel, etc.) and their likely sources.

- d) Details of nature, capacity and location of temporary construction equipment required on site (such as cranes, concrete batch plants, rock crushers, construction camps, etc.).
- e) The number of construction workers required in the various stages of construction, sources of labour, accommodation and support servicing requirement.
- f) The proposed hours per day and days per week of construction activities.
- g) The volume, composition, origin, destination and route for vehicle movements and other traffic likely to be generated during the construction phase, including a breakdown for over-dimension and heavy vehicles.

2.1.3 Commissioning

- a) A step-by-step description of major commissioning activities (if any) following installation of equipment. Indicative timeframes for the completion of major steps, and the likely sequencing of steps.

2.1.4 Operation and maintenance

- a) The operational and maintenance requirements (including frequency of maintenance activities, equipment access and hardstand requirements) for the wind turbines and transmission lines (including vegetation clearance).
- b) The width of the operational transmission line easement that will be required. Requirements for access to the easement and any restrictions required on land use, development and access within the easement.
- c) The design life for major project components (e.g. wind turbines, transmission towers, etc).
- d) The hours of operation for the wind farm including any on-site variations or seasonal variations.
- e) The volume, composition, origin, destination and route for vehicle movements and other traffic likely to be generated during operational phase, including a breakdown for over-dimension and heavy vehicles.

2.2 Site plan

Site plans are required which identify the proposal site and which include the following¹ (where relevant).

- a) The boundary of the proposal site.
- b) The position of buildings and significant structures on the site (existing and proposed).
- c) The route of any underground pipelines or cables on the wind farm site.
- d) The location of the preliminary transmission line route within the proposed transmission line corridor.
- e) Where wind turbine specifications and locations have not been finalised, development and exclusion zones should be identified, along with alternative scenarios for wind turbine layout.
- f) Locations of other infrastructure within the development zone(s).
- g) Existing vegetation and type.
- h) Location of threatened/protected flora and fauna sites.

¹ When providing maps or referring to spatial databases, the coordinate reference system being used should be specified (ie. Australian Geodetic Datum (AGD) or GDA (Geocentric Datum of Australia))

- i) Location of known Aboriginal and historic heritage sites.
- j) The location of all major sources of noise.
- k) The location of all point sources of liquid emissions (including stormwater).
- l) The route of any pipelines, tracks, conveyors or similar means of transporting on-site materials.
- m) The location of raw materials storage areas.
- n) The location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
- o) The location of stormwater collection systems and details of drainage control measures such as cut-off drains and sediment settling ponds.
- p) Details of any screening vegetation or bund walls
- q) The location of loading or unloading areas.
- r) The location of all monitoring sites.

2.3 General location map

A general location map (e.g. 1:25,000 scale) which identifies the following is required

- a) The location of the proposal site
- b) Topographical features, aspect and direction of drainage
- c) Road access to and from the site
- d) Location of waterways and drains (including ephemeral)
- e) The distance(s) to any nearby sensitive uses (such as residences).
- f) Electricity transmission lines
- g) Boundaries of the property on which the proposal is located
- h) Surrounding land tenure
- i) Surrounding land use (identify areas of conservation or recreational significance)

2.4 Off-site infrastructure

Any new infrastructure or off-site ancillary facilities required to allow the proposal to proceed should be described (for example water supply, electricity supply, roads or other transport infrastructure).

- a) Requirements for new transport infrastructure, and specifically for upgraded, realigned or new roadways.
- b) Requirements for new or altered port facilities.
- c) Changes to the electrical substations required to enable connection to the State electricity grid.
- d) Changes to the existing power transmission system, including any upgrades to existing transmission lines.
- e) Water supply requirements for the project during construction and operational phases.
- f) Requirements for the realignment of energy, communication, water, waste or other infrastructure affected by the project.

2.5 Technical and management alternatives

A critique of other available technologies and the reason for the selection of the preferred technology from an environmental perspective should be included where relevant.

For any part of the proposal where alternative technologies, design options or management practices with different environmental consequences may exist, the alternatives should be identified, their environmental performance evaluated and the reason for the proposed choice justified.

RTI-DL-RELEASE-DPIPWE

3. THE EXISTING ENVIRONMENT

This section should describe the proposal site location and provide an overview of the existing environment which may be affected by the construction and operation of the proposal, including areas associated with any ancillary activities.

It should include details of salient features of the existing environment and, where appropriate, include maps, plans, photographs, diagrams or other descriptive detail.

The following details should be included.

3.1 Planning aspects

- a) The location of the proposal site and the associated infrastructure.
- b) Information on land tenure and property boundaries of the proposal site, with title details.
- c) Land zonings for the proposal site and surrounding areas, and any by-laws or special planning controls that may apply to the site and surrounding areas.
- d) Reserves managed by the Parks and Wildlife Service and any areas recommended for reservation by the Crown Land Assessment and Classification Process (CLAC) in the vicinity of the proposal should be identified.
- e) Any rights of way, easements and covenants affecting the proposal site.
- f) Land use and planning history of the proposal site, including the potential for site contamination², the present use of the site and any existing buildings and significant structures.
- g) A description of land use and ownership in the vicinity of the proposal site and those areas which may be affected by the proposal. The location and nature of industrial facilities, the location of individual residences, schools, hospitals, caravan parks and similar sensitive uses, and the location of any tourist or recreation facilities or routes (such as camping areas, picnic areas, walking tracks, historic routes) within 500 metres of the proposal site should be included (except where a greater or lesser distance has been specified by the EPA Board). Any proposed or potential sensitive users within this distance of the proposal site, which have been or are likely to be granted approval under the local planning scheme, should also be considered.

3.2 Environmental aspects

- a) A description of the general physical characteristics of the proposal site and surrounding area, including topography, geology, geomorphology, soils (including erodibility), vegetation, terrestrial fauna, groundwater and surface drainage (including waterways, lakes, wetlands, coastal areas etc.).
- b) Information on avifauna:
 - Avifauna studies must take account of the seasonal movements and activity patterns of the range of species potentially present in the vicinity of the project site and must be of sufficient duration to take account of seasonal variations in activity or presence. Avifauna surveys should be timed to coincide with periods when migratory birds may be using or passing through the project site.

² Information on potentially contaminating activities and contaminated site assessment can be found online at www.environment.tas.gov.au under 'Land Contamination'.

- The risk to birds (and in particular threatened and migratory species) must be assessed on the basis of, but not limited to, a site use study conducted at the project site which includes flight paths and on site movements.
 - Any avifauna studies must, unless otherwise approved by the EPA Board, be consistent with the approach described in the *EPHC draft National Wind Farm Development Guidelines – 2 July 2010* and *Studying Wind Energy/Bird Interactions: A Guidance Document. Metrics and Methods for Determining or Monitoring Potential Impacts on Birds at Existing and Proposed Wind Energy Sites (1999)* published by the National Wind Coordinating Committee, Washington.
- c) A description of natural processes of particular importance for the maintenance of the existing environment (e.g. fire, flooding, etc).
 - d) Any existing conservation reserves located on or within 500 metres of the proposal site
 - e) Any high quality wilderness areas identified in the *Tasmanian Regional Forest Agreement* located on or within twenty kilometres of the proposal site.
 - f) Information on species, sites or areas of landscape, aesthetic, wilderness, scientific or otherwise special conservation significance which may be affected by the proposal. Relevant information resources include the LIST (www.thelist.tas.gov.au) and the Natural Values Atlas (www.naturalvaluesatlas.dpiw.tas.gov.au).
 - g) Sufficient information must be presented to establish the existing extent of matters of national environmental significance (MNES) within, or near, the proposed development area, e.g. the number of orchids or the area of habitat.
 - h) An assessment of the vulnerability of the site to natural hazards (e.g. sea level rise, flooding, seismic activity, fire, landslips or strong winds).

3.3 Socio-economic aspects

This section should describe the existing social and economic environment that may be affected by the proposal, including information on the following:

- a) A summary of the social/demographic characteristics of the population living in the vicinity of the proposal site, identifying any special characteristics which may make people more sensitive to effects from the proposal than might otherwise be expected.
- b) A summary of the characteristics of the local and regional economy (e.g. existing employment trends, land values).

3.4 Heritage aspects

This section should include a brief history of the use of the area and identify any known Aboriginal and historic heritage.

3.5 Alternative sites

This section should describe the wind farm site and transmission line corridor selection process, including site selection criteria, alternative sites and corridors considered and an assessment of those alternatives. The assessment should compare alternatives according to clearly defined environmental, social, economic and technical criteria, and provide a justification for the preferred site. Any community consultation undertaken and the effect it had on the selection process should be detailed.

4. POTENTIAL EFFECTS AND THEIR MANAGEMENT

Key issues

The key issues that have been identified for consideration in relation to the project, and which should be the principal focus of the DPEMP, are as follows.

1. Potential bird and bat mortalities through interaction with wind turbines and transmission lines.
2. Potential effects on natural values (including habitat for listed migratory species) of the Robbins Passage crossing:
 - a. the preferred crossing option should be decided prior to the submission of the DPEMP; and
 - b. it is noted that a permanent crossing above high tide level is likely to have greater effects than the alternatives.
3. Potential effects on flora associated with the construction of the wind farm and construction and maintenance of the transmission line.
4. Potential effects on fauna from habitat clearing associated with the construction of the wind farm and transmission line.
5. Potential effects on Aboriginal heritage.

Survey and study requirements in relation to key issues

The following surveys and studies will be required as part of the DPEMP in relation to the key issues identified above. It is strongly recommended that the advice of the EPA is sought on the acceptability of survey techniques prior to the work being undertaken.

RTI-DL-RELEASED-DRIP/ME

Key Issue	Survey requirements for DPEMP	Other studies for DPEMP	Relevant section of DPEMP Guidelines
1. Bird and bat mortality	<ul style="list-style-type: none"> Bird utilisation survey Behavioural data for key species frequenting site Flight path information Particular emphasis on threatened and migratory species Diurnal and nocturnal movements A minimum 12 months bird survey data required, with up to a further 12 months of targeted behavioural data required for any key species frequenting the site Sufficient timing and duration to take into account seasonal movements, variations in weather conditions and activity patterns Survey for raptor nests within 2000 metres of site and within 1000 metres of transmission line corridor Bat surveys to provide an understanding of the species and numbers using the site <p>Bird bat surveys should:</p> <ul style="list-style-type: none"> Comply with <i>Brief for Flora and Fauna Consultants</i>¹ Be consistent with <i>NWCC Metrics and Methods Guidance Document</i>² Be consistent with <i>EPHC draft National Wind Farm Development Guidelines – 2 July 2010</i> Be consistent with EPBC Act Policy Statement 2.3 <i>Wind Farm Industry</i> (July 2009) Be consistent with EPBC Act Policy Statement 3.21 <i>Migratory Species: Significant Impact Guidelines for 36 Migratory Shorebird Species</i>. 	<ul style="list-style-type: none"> Cumulative effects should be evaluated 	s3.2 and s4.7.2
2. Robbins Passage crossing	<ul style="list-style-type: none"> Underlying geology Coastal processes Habitat values of marine and intertidal areas 		S4.7.2 (f)
3. Flora	<ul style="list-style-type: none"> Comply with <i>Brief for Flora and Fauna Consultants</i>¹ Particular emphasis on threatened species and communities including adequate targeted surveys for all EPBC listed flora species that are likely to be impacted by the proposed action if present, e.g. <i>Litoria Raniformis</i> and <i>Caladenia caudata</i>. <i>Phytophthora cinnamomi</i> survey 		s3.2 and s4.7.2
4. Fauna	<ul style="list-style-type: none"> Comply with <i>Brief for Flora and Fauna Consultants</i>¹ Habitat survey, including terrestrial fauna (incl. invertebrates) 		s3.2 and s4.7.2
5. Aboriginal heritage	<ul style="list-style-type: none"> As advised by Aboriginal Heritage Tasmania In compliance with guidelines and standards available from: http://www.aboriginalheritage.tas.gov.au/forms.html 		s4.10.2

1. Brief for Flora and Fauna Consultants, Evaluation of Impact of Proposed Development Activities, published by the Nature Conservation Branch, RMC Division, DPIWE.

2. Studying Wind Energy/Bird Interactions: A Guidance Document. Metrics and methods for Determining or Monitoring Potential Impacts on Birds at Existing and Proposed Wind Energy Sites (1999), published by the National Wind Coordinating Committee, Washington.

4.0 Guidance for preparation of this section

This section should identify baseline conditions, evaluate the potential effects related to the proposal and describe measures to avoid or mitigate adverse effects. For each sub-section (4.1 and following) the evaluation should be presented in the following format:

- a) **Existing conditions** – where relevant, an outline of the existing conditions relevant to that effect (with cross referencing where appropriate to other sections).
- b) **Performance requirements** – define the environmental performance requirements to be achieved for that effect. See below for further information.
- c) **Potential effects** – an outline of all potential environmental effects of the proposal (positive and negative) through all stages, including construction, operation and closure, in the absence of special control measures.
- d) **Avoidance and mitigation measures** – a description and list of the measures proposed to avoid or mitigate potential adverse effects in order to achieve the environmental performance requirements (such as through pollution control technology or management practices). Any compensatory actions proposed for unavoidable residual adverse effects should be identified.
- e) **Assessment of effects** – an assessment of the overall effects of the development on the environment after allowing for the implementation of proposed avoidance and mitigation measures. This should include an evaluation of the significance of effects and comparison with state, national and international regulations and standards. Any net benefits likely to result from the proposal should be identified.

4.0.1 Identification and evaluation of effects

It is essential that the DPEMP be focused on the key issues for the proposal identified in these guidelines, including all matters of national environmental significance (MNES). The level of detail provided on other issues should be appropriate to the level of significance of that issue for the proposal. The assessing agencies may be able to provide further advice on the significance of each sub-section to the proposal.

Depending on the nature of the proposed activity and its location, some of the issues listed below (see section 4.1 and following) may be more relevant than others, while others will not be applicable at all.

The evaluation of potential effects should identify likely short and long term impacts, **plausible worst case consequences**, the vulnerability of the affected environment to the potential effects, and the reversibility of the effects. Potential cumulative effects also need to be addressed. Interactions between biophysical, socio-economic and cultural effects should be identified. The representation of the above information on maps, diagrams, site plans and photographs is recommended.

Predictions and evaluations of effects should be based on scientifically supportable data. The methodologies used or relied on should be referenced, together with the relevant research and investigations supporting them. Assumptions, simplifications and scientific judgements should be stated clearly, and the nature and magnitude of uncertainties should be clearly defined. Where relevant, the choice of a particular methodology over alternative methodologies should be explained. Where effects are not quantifiable, they should be adequately described.

The DPEMP should, where appropriate, implement the guidance provided in:

- *EPHC draft National Wind Farm Development Guidelines – 2 July 2010*

- *EPBC Act policy statement 2.3, Wind Farm Industry, Department of the Environment, Water, Heritage and the Arts, 2009*
- *The Best Practice Guidelines for Implementation of Wind Energy Projects in Australia (Australian Wind Energy Association, 2006)*

4.0.2 Consideration of alternatives

Where there are clear, alternative avoidance or mitigation measures for a particular adverse environmental effect, the alternatives should be reviewed and the preferred option justified. The consequences of the proposal not proceeding should also be stated.

4.0.3 Performance requirements

Performance requirements should be identified for each environmental effect and evidence provided to demonstrate that these can be complied with. These may be standards or requirements specified in legislation, codes of practice, state policies, national guidelines or as determined by agreement with the assessing agencies. Industry best practice standards should be referred to where appropriate. **Unsupported assertions that performance requirements will be achieved will not be considered adequate.**

4.0.4 Sustainable development objectives

Attention should be paid to demonstrating that the proposal is consistent with objectives as required by the relevant Commonwealth and Tasmanian statutes and policies, including the National Strategy for Ecologically Sustainable Development, the Tasmanian Resource Management and Planning System and the Environmental Management and Pollution Control System.

4.0.5 Waste management hierarchy

For each waste (gas, liquid and solid) it should be demonstrated that all reasonable and practicable measures have been taken to avoid producing that waste and to reduce the amount of waste requiring disposal, having regard to best practice environmental management. The measures must be in accordance with the following hierarchy of waste management, arranged in decreasing order of desirability:

- a) waste avoidance;
- b) waste recycling/reclamation;
- c) waste re-use;
- d) waste treatment to reduce potentially adverse effects; and
- e) waste disposal.

4.0.6 Mitigating adverse effects

Where adverse environmental effects are unavoidable, the proposed measures to reduce the effects (e.g. management practices, environmental offsets) should be described in detail. The extent to which they will overcome the anticipated effects should be specified. The statutory or policy basis of any proposed mitigation measure should be specified.

Where equipment is the key factor in achieving satisfactory environmental performance, contingencies in the event of breakdown or malfunction of the equipment should be discussed. It should be demonstrated that the maintenance of equipment can be provided for without causing performance requirements to be exceeded.

Where measures to control environmental effects are necessary, but will not be undertaken by the proponent, the means by which the proponent will ensure that the necessary measures are implemented should be identified (e.g. lease conditions, trade waste agreement, contractual arrangement or other binding third party commitment). **Mitigation measures over which the proponent has no control will generally not be considered adequate.**

4.0.7 Offsetting unavoidable adverse effects

If adverse residual environmental effects from the proposal are considered unavoidable despite the adoption of best practice environmental management avoidance and mitigation measures, then proposals to offset such effects should be detailed. For example, if the loss of conservation values, community assets or amenities is considered unavoidable, measures to compensate for those losses should be proposed in proportion to the loss. Any offset actions proposed must be demonstrated to be 'real' actions. That is, **the offset actions must have a measurable and relevant benefit which would otherwise not have occurred.**

Proposed compensation for impacts upon matters of national environmental significance must be consistent with Draft EPBC Act Policy Statement 4.1 - *Use of environmental offsets under the Environment Protection and Biodiversity Conservation Act 1999.*

4.0.8 Public consultation

The public consultation undertaken should be described. This should include the identification of affected parties and communities and a summary of their views.

4.1 Air emissions

This section should identify existing conditions, identify performance requirements to be achieved, identify any potential effects of the proposal on the local, regional and global air environment, identify measures to avoid and mitigate any possible adverse effects and assess the overall effects on the air environment following implementation of the proposed avoidance and mitigation measures.

4.1.1 Legislative and policy requirements

Consideration should be given to the requirements of the Tasmanian *Environment Protection Policy (Air Quality)* (see www.environment.tas.gov.au/AirQualityPolicy).

4.1.2 Other issues

The following issues should be addressed (where relevant).

- a) The location of all emission points should be specified and mapped.
- b) Potential sources of fugitive emissions (including odour and dust that may arise from loading, unloading and transport) should be described.
- c) The potential for emissions to cause environmental and health effects should be evaluated and proposed mitigation measures should be described.

4.2 Liquid waste

This section should identify existing conditions, detail the performance requirements to be achieved, identify potential effects of the proposal on the receiving environment (including surface water, groundwater and soil), identify measures to avoid and mitigate potential adverse effects and assess the overall effects on the receiving environment following the implementation of the proposed avoidance and mitigation measures.

This section should demonstrate that all reasonable and practicable measures have been taken (having regard to best practice environmental management as defined in the EMPC Act) to avoid

producing liquid waste, or to reduce the amount of liquid waste to be discharged consistent with the waste management hierarchy.

4.2.1 Legislative and policy requirements

It must be demonstrated that the proposal is consistent with the objectives and requirements of relevant water management policies and legislation, including the *Water Management Act 1999*, *State Policy on Water Quality Management 1997* (Water Policy), the *Inland Fisheries Act 1995*, the *Living Marine Resources Management Act 1995* and the *Tasmanian State Coastal Policy 1996*.

In particular, it must be demonstrated that the proposal will not prejudice the achievement of any water quality objectives set for water bodies under the State Policy on Water Quality Management (see www.environment.tas.gov.au/WaterQualityPolicy). Where water quality objectives have not yet been set, the EPA Division should be consulted to identify the baseline water quality data required to enable the water quality objectives to be determined.

4.2.2 Discharge of wastewater to the environment

If the proposal includes any discharge of wastewater to the environment, then a detailed consideration of the nature of the discharge and of the receiving environment must be presented. Any proposed treatment processes should be described and the potential impacts upon the receiving environment must be assessed under typical and plausible worst case conditions. Note: wastewater means water used during carrying out the activity, and does not include stormwater arising from rainfall on the proposal site (see below).

4.2.3 Other issues

The following issues should be addressed (where relevant).

- a) Details of stormwater management (including reasonably foreseeable flood events) on the proposal site should be provided. The potential for pollutants to become entrained in stormwater should be assessed.
- b) If the proposal anticipates a discharge to a municipal sewerage system (including tankered waste), then a suitably detailed agreement with the operator of the municipal sewerage system should be negotiated.
- c) Details of any additional liquid wastes should be included.

4.3 Groundwater

For proposals with the potential to impact upon groundwater, this section should identify existing conditions, identify performance requirements to be achieved, identify any potential effects of the proposal on groundwater quality or quantity, identify measures to avoid and mitigate any possible adverse effects, and assess the overall effects on groundwater following implementation of the proposed avoidance and mitigation measures.

It must be demonstrated that the proposal is consistent with the objectives and requirements of all relevant water management policies and legislation, including the *Water Management Act 1999* and the *State Policy on Water Quality Management 1997*.

4.4 Noise emissions

This section should identify existing conditions, identify performance requirements to be achieved, identify any potential effects of the proposal on ambient (surrounding) noise levels (during both the construction and operational phases), identify measures to avoid and mitigate any possible adverse effects, and assess the overall effects on ambient noise levels following implementation of the proposed avoidance and mitigation measures. The approach described in the *EPHC draft National Wind Farm Development Guidelines – 2 July 2010* should be followed.

The following issues should be addressed:

- a) All major sources of noise must be identified and described
- b) The potential for noise emissions (during both the construction and operational phases) to cause nuisance for nearby land users should be considered and any proposed measures to mitigate noise impacts should be described.
- c) The potential for noise emissions to affect terrestrial, marine and freshwater wildlife and livestock.

4.5 Solid and controlled waste management

This section should demonstrate that all reasonable and practicable measures have been taken to avoid producing each type of solid waste or controlled waste and in particular to reduce the amount of waste requiring disposal, having regard to best practice environmental management. The measures must be in accordance with the hierarchy of waste management.

Controlled waste is defined in the EMPC Act and associated regulations. A non-exhaustive listing of categories of Controlled waste can be found on the internet at www.environment.tas.gov.au/ControlledWasteCodes.

The following issues should be addressed:

- a) The source, nature and quantities of all solid wastes, including general refuse, likely to be generated should be identified.
- b) Methods proposed to collect, store, reuse, treat or dispose of each solid waste stream should be identified.
- c) Any controlled waste that will be generated should be identified. The source, nature, quantity, and method of treatment, storage and disposal for each controlled waste should be described.

4.6 Dangerous goods and environmentally hazardous materials

This section should identify any potential effects from the transport, storage and usage of dangerous goods and environmentally hazardous materials associated with the proposal, identify measures to avoid and mitigate any possible adverse effects and assess the overall effects following implementation of the proposed avoidance and mitigation measures.

The following issues should be addressed (where relevant).

- a) The nature, quantity and storage location of all environmentally hazardous materials including fuels, oils and chemical reagents and Dangerous Goods (as defined in the *Australian Code for the Transport of Dangerous Goods by Road and Rail*) that will be used during the construction and operation of the proposal.
- b) The measures (such as storage of such materials within bunded areas or spill trays) to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials.
- c) Contingency plans for when control measures/equipment breakdowns or accidental releases to the environment occur, including proposed emergency and clean-up measures and notification procedures.
- d) Identify any safety management requirements for the protection of human health and safety affecting the community.
- e) Particular reference should be made to the management of fuels and lubricants required for equipment during construction, operational and maintenance activities.

4.7 Biodiversity and natural values

This section should identify existing conditions, identify performance requirements to be achieved, identify any potential effects of the proposal, including the development of infrastructure directly related to the proposal, on biodiversity and nature conservation values. It should identify measures to avoid and mitigate any possible adverse effects and assess the overall effects on biodiversity and nature conservation values following implementation of the proposed avoidance and mitigation measures. It should address these issues in the context of the terrestrial and aquatic environment as appropriate.

4.7.1 Key legislative and policy requirements

Regard should be given to the *National Strategy for the Conservation of Australia's Biological Diversity*, the draft *Tasmania's Nature Conservation Strategy* and the *Threatened Species Strategy for Tasmania*.

4.7.2 Other biodiversity and natural values issues

The following issues should be addressed (where relevant).

- a) Particular reference should be made to all potential impacts on bird and bats³ including indirect impacts (e.g. changes in behaviour) as well as interaction with wind turbines and transmission lines (collision or electrocution). The risk posed by both diurnal and nocturnal movements must be evaluated. Details of measures and contingencies for avoiding, mitigating or compensating for adverse effects are required. The objective of these measures should be no net loss of population of species listed as critically endangered, endangered or vulnerable under either State or Commonwealth legislation. A threatened species compensation programme must be consistent with the objectives of the relevant National Recovery Plan. Full consideration of all feasible mitigation measures and proposed monitoring should be provided. The methodology used for evaluating potential bird and bat collisions should be clearly identified. Modelling should be used where appropriate to support field study results. See also (c) below.
- b) Effects on flora, vegetation communities and habitat, with particular reference to rare and threatened species, communities and habitats, including those listed under the relevant Schedules of the Commonwealth *EPBC Act* and the Tasmanian *Threatened Species Protection Act 1995*.

THREATENED FLORA

There are a large number of threatened flora species listed under the Tasmanian *Threatened Species Protection Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999* that have been previously identified on and in close vicinity to the proposed wind farm site (table below). Vegetation will be cleared in association with the construction and maintenance of wind farm infrastructure so impacts to populations of listed threatened species must be considered. As a minimum, a comprehensive threatened flora survey must be undertaken to determine the extent of the distributions of threatened flora within the proposed site. A permit will be required for the destruction of any threatened flora species. The granting of such a permit will depend on the significance of the impact.

³ Refer to *EPHC draft National Wind Farm Development Guidelines – 2 July 2010* for a more extensive description of the full range of potential impacts.

Flora listed under the Tasmanian *Threatened Species Protection Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999* identified within 5000m of the proposed development site.

Species Name	Common Name	TSPA Listing	EPBC
<i>Carex gunniana</i>	mountain sedge	r	-
<i>Diuris lanceolata</i>	snake orchid	e	EN
<i>Diuris palustris</i>	swamp doubletail	e	-
<i>Frankenia pauciflora</i> var.	southern seaheath	r	-
<i>Isolepis stellata</i>	star clubsedge	r	-
<i>Lachnagrostis robusta</i>	tall blowgrass	r	-
<i>Limonium australe</i>	yellow sea-lavender	r	-
<i>Parmotrema crinitum</i>		r	-
<i>Prasophyllum secutum</i>	nothern leek-orchid	e	EN
<i>Thelymitra malvina</i>	mauveluft sun-orchid	e	-

- c) Effects on fauna, including effects on species, communities and habitats, with particular reference to rare and threatened species, migratory species, communities and habitats, including those listed under the relevant Schedules of the Commonwealth EPBC Act and the Tasmanian *Threatened Species Protection Act 1995*. The site is known to include several species of fauna and flora listed under one or both of the these acts. Comprehensive threatened fauna and flora surveys must be undertaken to determine the extent of the distributions of threatened species and associated nest locations within the proposed site. If impacts on threatened flora species are identified, the DPEMP must identify any requirements for threatened species permit(s). It is also noted that the vegetation types on most of the site are classified as threatened native vegetation types under the *Nature Conservation Act 2002*. Any impact to these will require prior approval from the relevant authority.

THREATENED FAUNA

There are a large number of threatened fauna species listed under the Tasmanian *Threatened Species Protection Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999* that have been previously identified in close vicinity to the proposed wind farm site (table below). The listed fauna species at the site are predominately avifauna. Both Wedge-tailed Eagles (*Aquila audax subsp. fleayi*) and White-bellied Sea-eagles (*Haliaeetus leucogaster*) have several previously active nests located within 5000 m of the proposed development site. It is recommended that comprehensive threatened fauna surveys be undertaken to determine the extent of the distributions of threatened fauna species and associated nest locations within and adjacent to the proposed wind farm site.

The utilisation of the site by avifauna and bats is fundamental to the quantification of impacts on the wind farm site. Therefore, it is recommended that surveys be undertaken to quantify utilisation of the wind farm site by listed avifauna and bat species. The data from such surveys should be used to develop collision risk assessment models and threatened species management plans for impact mitigation for the project. It is recommended that the development of methods to quantify site utilisation be developed in consultation with the Policy and Conservation Assessments Branch (PCAB) of the State Department of Primary Industries, Parks, Water and Environment.

Potentially, one of the most significant avifauna issues relates to the Orange-bellied Parrot (*Neophema chrysogaster*). PCAB are cognisant of the difficulties in sampling for this species due to their low numbers and variable movements. Therefore PCAB consider it inappropriate to request a specific survey for individuals of the species, despite having good evidence that the birds do use the island as a corridor for migration. As an

alternative, PCAB considers habitat and flora surrogacy approaches are the best methods to assess likely OBP presence. PCAB recommend the flora and vegetation types across the islands be surveyed, and the species of weeds (as well as the salt marsh species) known to be a food source for the species specifically referenced and mapped. Consultation with the OBP Recovery Team is recommended to determine the appropriate vegetation types and survey effort required. Moreover, interpretation of the results from these surveys should be done in consultation with PCAB and OBP Recovery Team staff.

Fauna listed under the Tasmanian *Threatened Species Protection Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999* identified within 5000m of the proposed development site.

Species Name	Common Name	TSPA Listing	EPBC
<i>Aquila audax subsp. fleayi</i>	wedge-tailed eagle	e	en
<i>Accipiter novaehollandiae</i>	grey goshawk	e	-
<i>Alcedo azurea subsp. Diemenensis</i>	azure kingfisher	e	EN
<i>Tyto novaehollandiae subsp. castanops</i>	masked owl	e	-
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	v	-
<i>Perameles gunnii</i>	barred bandicoot	-	vu
<i>Dasyurus maculatus subsp. maculatus</i>	spotted-tailed quoll	r	VU
<i>Diomedea cauta subsp. Cauta</i>	shy albatross	pe	PVU
<i>Diomedea melanophrys subsp. Menanophrys</i>	black-browed albatross	pe	PVU
<i>Neophema chrysogaster</i>	orange-bellied parrot	e	EN
<i>Lathamus discolor</i>	swift parrot	e	EN
<i>Sterna albifrons subsp. nereis</i>	fairy tern	v	-
<i>Sterna striata</i>	white-fronted tern	v	-
<i>Sterna albifrons subsp. sinensis</i>	little tern	e	-
<i>Numenius madagascariensis</i>	eastern curlew	e	-
<i>Sarcophilus harrisii</i>	Tasmanian devil	e	vu

- d) Effects on identified areas or habitats of conservation significance, including designated conservation areas, areas relating to the requirements of international treaties (e.g. Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA/CAMBA) and Ramsar (wetlands) Convention), or wetlands listed in *A Directory of Important Wetlands in Australia*.
- e) Identify any freshwater ecosystems of high conservation management priority using the Conservation of Freshwater Ecosystem Values (CFEV) database (accessible on the internet under water.dpiw.tas.gov.au/wist/). The scope of investigation should encompass the vicinity of the proposed development where there is likelihood of alteration to the existing environment. The specific CFEV information used for DPEMPs should be Conservation Management Priority_Potential which is appropriate for Development Proposals.
- f) Effects on sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.

GEODIVERSITY CONSERVATION AND MANAGEMENT

Five sites listed on the Tasmanian Geoconservation Database (TGD) occur on Robbins Island. The Notice of Intent (NOI) only refers to three of these; The Remarkable Banks Pleistocene beach ridge complex; the Western Tasmanian blanket bogs; and the Robbins Passage tidal channel system. However, the Back Beach Walker Island Dunes site, which extends south along the north eastern coast of Robbins Island, and the Guyton Point

Aquagene Lava site in the south east of the Island are also listed geoconservation areas that occur onsite.

While it is considered unlikely that the former will be significantly impacted by the proposal, the second site occurs in an area mapped as an investigation area for rock quarrying. In addition to these sites, a number of areas mapped across Robbins Island consist of Karst and such areas may require specific consideration. It is therefore recommended that a full Geoconservation survey of all areas potentially impacted by the proposal including, access to the island, road infrastructure, quarrying, hardstand areas, turbine footprints and transmission infrastructure be undertaken by suitably qualified personnel.

- g) Where soil disturbance is proposed, testing should be undertaken for the presence of acid sulphate soils. If dredging or excavation of marine sediments is proposed, testing in line with the requirements of Information Bulletin 105 *Classification and Management of Contaminated Soil for Disposal* should be undertaken to inform the options for management and/or disposal of this material.
- h) Effects on existing conservation reserves and areas recommended for reservation by the Crown Land Assessment and Classification Process (CLAC) Process, with reference to the management objectives of the reserve(s) and the reserve management plan(s) (if any).
- i) Effects on any high quality wilderness areas identified in the *Tasmanian Regional Forest Agreement* (Tasmanian RFA) which may be affected by the proposal.
- j) Effects on other species, sites or areas of landscape, aesthetic, wilderness, scientific, geodiversity or otherwise special conservation significance.
- k) Clearing of native vegetation and habitat associated with the construction and maintenance of the proposal and the impact of any clearing on sites, species or ecological communities of special conservation significance, including any impact on the comprehensive, adequate and representative reserve system identified as part of the Tasmanian RFA, on wildlife habitat strips under the *Tasmanian Forest Practices Code 1995* and on non-forest bioregional forest communities.
- l) Where impacts cannot be avoided, proposed measures to mitigate and/or compensate adverse effects on biodiversity and nature conservation values should be presented.
- m) The potential for migration and/or introduction of pests, weeds and plant and animal diseases (such as *Phytophthora cinnamomi*) as a result of the proposal.

WEED MANAGEMENT

Weeds are recognised as a potential threat from this development proposal. Weeds such as ragwort (*Senecio jacobaea*) and gorse (*Ulex europaeus*) are common on the adjacent mainland and are at risk of being transported to Robbins Island on machinery or in soil or gravel. Rice grass (*Spartina anglica*) is also prevalent in the region. While control works have been undertaken in the area for this species, there is still an inherent risk of spreading this weed into new areas. It is recommended that weed surveys compliment any flora surveys undertaken for threatened flora and/or vegetation communities. Further, it is recommended that any sites proposed for quarrying activities (onsite or offsite) be surveyed for the presence of weed species prior to the exportation of quarry materials across the site.

It is recommended that a weed management plan and hygiene plan be developed for the development. Weed management for the development will need to focus on post-construction weed monitoring and mitigation. Weed hygiene will need to cover all relevant aspects of weed and disease hygiene. These are discussed below:

- (1) A weed management plan should cover all relevant aspects of the control and management of declared weeds and weeds that are considered to have significant impacts

on agriculture and natural values. A weed management plan should cover, but not be limited to:

- Overarching set of objectives and the context in which they are to be achieved.
- An accurate assessment of the distribution of declared weeds and significant environmental weeds.
- Declared weeds and significant weed distributions should be clearly and accurately mapped.
- Priorities developed for management and control of weeds, both in the short term as well as long term.
- An assessment of the potential impact of those weeds, including immediate and adjacent areas which are free of particular declared weeds.
- Strategies for managing weeds within the development and associated works areas, including their eradication.
- Strategies for ongoing monitoring and control of weeds within the development and associated works areas.
- Identification of appropriate herbicides for control and how they are to be used.

(2) A hygiene plan should be developed to ensure construction of the wind farm and associated works areas do not result in the introduction of new declared weed species into the area, translocation of weeds within the development footprint or the export of existing declared weeds out of the area. The hygiene plan should cover, but not be limited to:

- Vehicle, machinery and equipment hygiene including the washdown protocols when travelling between clean and contaminated within the development footprint and also vehicles entering or leaving the site.
- The location and management of washdown areas and facilities, including management of effluent.
- Maintaining logbooks detailing adherence to hygiene protocols.
- Material hygiene (soils, gravel, plant material etc.) – ensuring that no materials contaminated with weed propagules (seed, propagative vegetative material) are either imported into the pipeline or dam sites or exported out of those areas.

It is important that the management and control measures and operational protocols developed in a weed management plan and hygiene plan are provided to and understood by contractors involved in site works and the transport of machinery and materials into and off site. This will require regular communication of the protocols established by the plans, training and easily accessed information.

- n) Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any proposed seed collection and progressive rehabilitation programme.
- o) Reference should be made to potential effects of vehicle movements on wildlife as a result of the proposal, and to proposed mitigation measures for any wildlife priority areas.

4.7.3 Requirements for surveys

Any terrestrial flora and fauna surveys must, as a minimum, comply with the requirements of the document *A Brief for Consultants* published by the Nature Conservation Branch, Resource Management and Conservation Division of the Department of Primary Industries, Water (DPIW). The methodology for surveys should be developed in consultation with DPIW. The methodology of flora and fauna surveys should also be consistent with DSEWPaC's guidelines.

In particular consideration should be given to *Survey guidelines for Australia's threatened birds: Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999*.

4.8 Marine and coastal

Where relevant, this section should identify any potential effects of the proposal on marine and coastal areas not addressed in other sections. It should identify measures to avoid and mitigate any possible adverse effects and assess the overall effects on marine and coastal areas following implementation of the proposed avoidance and mitigation measures. Cross referencing should be made to other relevant sections dealing with conservation values (marine flora and fauna, geoconservation) and coastal effects.

4.8.1 Robbins Passage Crossing

The Notice Of Intent offers a number of options for both physical access to the island and the transmission line, each raising different environmental issues. Further consultation with the EPA is recommended prior to making a final decision, and further advice on the studies required may be provided at that stage. The following comments are provided on the potential impacts of different options:

- Construction of a permanent crossing such as a bridge or causeway is likely to have significant impacts, both directly and indirectly:
 - Changes to tidal patterns and sand movements, may directly affect invertebrate fauna and aquatic species, with flow-on effects to fauna species (particularly waders) that feed in the area.
 - The site is a very dynamic site with strong tidal movements. Any infrastructure located on the tidal delta has the potential to impact the natural values of the tidal channel system.
 - A permanent crossing may allow movement on and off the island for a range of organisms.
- Utilisation of the existing 'at level' crossing may have negative impacts on the substrate due to the high volume of heavy vehicles needed to transfer equipment across the passage.
- An overhead high voltage transmission line across Robbins Passage is considered to pose a high collision risk to avifauna and bats. This should be avoided if possible.

4.8.2 Legislative and policy requirements

It must be demonstrated that the proposal is consistent with the objectives and requirements of all relevant marine and coastal policies and legislation, including the *Living Marine Resources Management Act 1995*, *State Policy on Water Quality Management 1997* and the *Tasmanian State Coastal Policy 1996*.

4.9 Greenhouse gases and ozone depleting substances

This section should contain an assessment of the proposal in terms of the evolving national response to climate change and greenhouse gas emissions⁴ and the Tasmanian Framework for Action on Climate Change 2008 (available at www.climatechange.tas.gov.au). The direct and indirect, positive and negative effects of the proposal on greenhouse gas production and ozone depleting substances should be described, including an assessment of the net impact on state and national greenhouse gas emissions over the lifetime of the proposal.

⁴ Information about the national approach to greenhouse gas emissions is available on the internet at: www.climatechange.gov.au

Proponents will need to determine whether they are required to report to the Commonwealth under the *National Greenhouse and Energy Reporting Act 2007*.

4.9.1 Estimate of greenhouse gas emissions

An estimate of annual emissions of greenhouse gases generated on site should be presented in terms of carbon dioxide mass equivalents. It should be demonstrated how such emissions will be minimised or offset by the use of best practice environmental management. Reference should be made to the Australian Methodology for the Estimation of Greenhouse Gas Emissions and Sinks 2006 (refer to www.climatechange.gov.au/inventory/methodology/index.html) and the National Greenhouse and Energy Reporting (Measurement) Technical Guidelines (see www.climatechange.gov.au/reporting/guidelines/index.html)

4.9.2 Implementing greenhouse best practice

It should be demonstrated that the development will implement cost-effective greenhouse best practice measures to achieve an ongoing minimising of greenhouse gas emissions.

Details of any feasible alternative ways of providing energy for the proposal, transporting materials to and from the proposal, design and construction of components or otherwise implementing the proposal so as to have a lesser impact on the enhanced greenhouse effect, and the justification for not adopting these alternatives should be included.

4.9.3 Ozone depleting substances

Any generation or use of ozone depleting substances in the proposal (such as in refrigeration or firefighting) must be identified and justified.

4.10 Heritage

This section should identify potential effects of the proposal, including the development of infrastructure directly related to the proposal, on Aboriginal and historic heritage. It should identify recommended measures to avoid or mitigate any potential adverse effects on cultural heritage sites and assess the overall effects of the proposal on cultural heritage sites following implementation of the proposed avoidance and mitigation measures. In addition to considering the management of known sites and those discovered during pre-construction surveys, it must include procedures to be implemented in the event that additional heritage sites are encountered during construction.

4.10.1 General

Potential effects on the following should be addressed (where relevant).

- a) Declared World Heritage Area properties and values.
- b) Any places listed on the National Heritage List and values.
- c) Any places listed or interim listed on the Register of the National Estate and values.
- d) Any places listed on the Tasmanian Heritage Register (maintained by the Tasmanian Heritage Council), including consideration of cultural landscapes.
- e) Any places on the Tasmanian Historic Places Inventory (maintained by the Heritage Tasmania).
- f) Any places on the Tasmanian Aboriginal Site Index (maintained by the Aboriginal Heritage Tasmania), including consideration of cultural landscapes.
- g) Local government planning scheme heritage schedules.
- h) Any other places of Aboriginal or historic heritage significance.

4.10.2 Aboriginal heritage

The advice of the Aboriginal Heritage Tasmania should be sought to establish regulatory requirements for Aboriginal heritage values, places and landscapes. Surveys must comply with guidelines and standards available from: <http://www.aboriginalheritage.tas.gov.au/forms.html>. Any Aboriginal heritage material identified must be reported to the Director of National Parks and Wildlife and dealt with in accordance with the *Aboriginal Relics Act 1975*. Where a request is made to seek to disturb, destroy or otherwise deal with an Aboriginal relic as per Section 14 (1) of the *Aboriginal Relics Act 1975*, information relevant to a permit under that Act will be required. The status of existing or pending permit applications should be provided in the DPEMP.

4.10.3 Historic heritage

The advice of the Heritage Tasmania should be sought with regard to effects on places listed on the Tasmanian Heritage Register and to establish regulatory requirements for heritage values, places and landscapes. Any approvals required under the *Historic Cultural Heritage Act 1995* should be identified. The methodology outlined in Heritage Tasmania's *Pre-development Assessment Guidelines* should be followed. These are available on Heritage Tasmania's website at www.heritage.tas.gov.au/guidelines.html.

4.10.4 Consultation

Consultation with the Tasmanian Aboriginal Lands Council, Tasmanian Office of Aboriginal Affairs, Aboriginal Heritage Tasmania and any other relevant Aboriginal organisation, as well as with Aboriginal communities, should occur prior to any survey of potential sites to establish regulatory requirements for heritage values, places and landscapes.

4.10.5 Commonwealth Government requirements

The requirements of the Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* should also be considered where there is a threat of injury or desecration to an area which is significant as part of Aboriginal tradition, and potential impacts identified, assessed and managed in consultation with the traditional owners, Native Title claimants and any other indigenous people with rights and interests in the area.

The Australian Heritage Office can provide advice on places listed in the National Heritage List and Register of the National Estate.

4.11 Land use and development

This section should identify any potential effects of the proposal in terms of constraints or benefits it may place on the current or future use of land within the proposal site and surrounding area. It should identify measures to avoid, mitigate and compensate for any possible adverse effects.

The following issues should be addressed (where relevant).

- a) Effects on existing or proposed tourist or recreation activities, such as camping areas, picnic areas, walking tracks, horse riding tracks, heritage trails etc.
- b) Effects on residential activities.
- c) Effects on industrial activities.
- d) Effects on agricultural activities, including any requirement of the interim *State Policy for the Protection of Agricultural Land (2007)* - (see www.rpdc.tas.gov.au/stpol)
- e) Effects on local and regional tourism.
- f) Effects on other commercial activities.

4.12 Visual effects

This section should outline the existing visual setting within which the proposal infrastructure will be located and assess the capacity of the landscape to absorb any visual changes to the landscape as a result of the proposal. The assessment should also take account of the appearance of the proposal from significant vantage points. These should include points both inside and outside the site and should include viewpoints likely to be visited by tourists or recreational users. Presentation of 'artists impressions', photomontages or visual modelling is recommended. The methodology used and assumptions made in the assessment should be clearly identified.

Measures to avoid and mitigate potential adverse visual effects should be identified, such as minimising vegetation clearance, facility height, size, design, colour, separation and post-construction revegetation.

The assessment should consider potential cumulative effects of the project based on existing and formally proposed wind farms (and other developments) in the region.

The approach described in the *EPHC draft National Wind Farm Development Guidelines – 2 July 2010* should be followed. The assessment should consider visual effects from blade rotation (including shadow flicker and blade glint) and detail any proposed measures to avoid or mitigate any potential adverse effects identified.

4.13 Socio-economic issues

This section should contain information on the social and economic effects of the proposal during the construction, operation and decommissioning phases.

The following issues should be addressed (where relevant).

- a) An estimate of total capital investment for the proposal.
- b) The effects on local and State labour markets for both the construction and operational phases of the proposal. Skills and training opportunities should also be discussed.
- c) The effects on upstream/downstream industries, both locally and for the State.
- d) The extent to which raw materials and services will be sourced locally.
- e) A qualitative assessment of community infrastructure effects, including recreational, cultural, health and sporting facilities and services. Any proposals to enhance or provide additional community services or facilities should be described.
- f) Muttonbirding, both legal and (allegedly) illegal occurs on Robbins and adjoining islands. The effects of the proposal on management of this activity should be described.
- g) Community demographic effects (changes to cultural background, occupation, incomes).
- h) Effects on land values, and demand for land and housing.
- i) Effects on the local, regional, state and national economies.

4.14 Health and safety issues

This section should review any health and safety issues relating to employees, site visitors and the public which have not been addressed in other sections.

It must be demonstrated that occupational health and safety issues have been taken into account during the planning of the proposal, including an analysis of alternatives. It should be demonstrated that compliance with the *Workplace Health and Safety Act 1995* and the *Workplace Health and Safety Regulations 1998* will be achieved. Safety management systems to be used during construction and operational phases should be described.

The following issues should be addressed.

- a) Construction phase safety issues.
- b) Security arrangements to prevent unauthorised access to the proposal site during construction.
- c) Operations, maintenance and inspection safety issues.

4.15 Hazard analysis and risk assessment

This section should contain a preliminary analysis (appropriate to the scale of the project) of the potential for a major hazard event (such as an explosion) to occur and proposed safeguards to prevent such an occurrence. The preliminary analysis should systematically identify all potential major hazards (internal and external) to people and the environment associated with the construction, operation, maintenance and decommissioning of the proposal.

4.16 Fire risk

This section should identify the potential fire risk associated with the proposal. This should include consideration of fire within the site, fire escaping from the site and the effect of wildfire originating outside the development. Measures to avoid and mitigate potential adverse effects should be outlined, including the objectives and management principles to be adopted for the preparation of a fire response plan. The proponent should demonstrate compliance with the relevant requirements of the *Fire Services Act 1979* and the *Workplace Health and Safety Act 1995*.

4.17 Infrastructure and off-site ancillary facilities

This section should identify potential effects on any significant off-site or infrastructure facilities (including increased use of existing infrastructure, such as roads, ports and quarries), identify measures to avoid and mitigate any possible adverse effects and assess the overall effects following implementation of the proposed avoidance and mitigation measures. For example, upgrading or re-routing of roads, rail or other services required as a result of the proposal, should be detailed.

This Section should identify roads and other infrastructure to be used by vehicles for the proposal (during both construction and operation). Potential environmental impacts associated with construction and use of such infrastructure should be assessed.

4.18 Environmental management systems

This section should provide information on strategic matters relating to environmental management of the proposal, including a description of the following.

- a) Any environmental management systems or environmental policies implemented or proposed by the proponent, which are relevant to the environmental management of the proposal.
- b) Organisational structure and environmental responsibility within that structure for the proposal.
- c) Procedures and instructions to employees (including contractors) on minimising adverse environmental effects of activities, as well as employee induction and education programs to ensure an appropriate response to operational environmental concerns should be included in relevant sections.

4.19 Cumulative and interactive effects

Where relevant, this section should contain an assessment of the potential cumulative effects of the proposal, based on existing and other formally proposed developments in the region, which have not been addressed in previous sections. Interactions between biophysical, socio-economic and cultural effects of the proposal should be discussed.

4.20 Traffic impacts

This Section should identify roads to be used by vehicles associated with the proposal (both during construction and operation) and the likely volume and nature of traffic and timing of traffic flows, including details of the current usage of these roads. Impacts associated with altered traffic flows should be discussed (such as impacts on other roads users and residences adjacent to roads).

4.21 Air Transport impacts

This section must identify any aerodrome or landing ground within 30 km, including bodies of water used by float planes and evaluate the potential for adverse impact on aviation safety. The Civil Aviation Safety Authority provided the following specific advice:

1. Identify any aerodrome within 30km of the boundaries of the wind farm and consult with the operators to determine any impact on Obstacle Limitation Surfaces at such aerodromes. Penetration of these surfaces is likely to pose a hazard to normal aviation operations at the aerodrome.
2. Consult with Airservices Australia (Phone 02 6268 4111 Ms Michelle Bennetts) to have them assess any potential impact on instrument approach procedures at aerodromes, navigation aids, communications facilities or surveillance facilities.
3. Contact the Aerial Agriculture Association of Australia (Phone 02 6241 2100 – Mr Phil Hurst) to advise him of the proposal and gain comment on potential hazards to aerial application operations in the area.
4. The maximum height of the turbines has been advised as consistent with the base of navigable airspace at 152 metres and is a potential hazard to aircraft operating at legal altitudes, particularly under conditions of low light. As a consequence it is recommended that you consider your duty of care in deciding whether or not the wind farm should be provided with obstacle lighting.
5. For the purposes of marking aeronautical charts and other data sources, the location, extent and height of the wind farm is to be advised to:

Aeronautical Data Officer
RAAF AIS (VBM-M2)
Victoria Barracks
St Kilda Road
SOUTHBANK VIC 3006
Tel: (03) 92826400
Fax: (03) 92826695
Email: ais.charting@defence.gov.au

4.22 Impact on recreational boating

The DPEMP should evaluate the impacts of the proposed development on the safety and amenity of recreational boat users in the vicinity of Robbins Island, in particular the impact of any vehicular crossing of Robbins Passage on the passage of small boats.

4.23 Communication interference

This section should identify the potential for the project to disrupt communications signals (including radar, radio, television and microwave transmission). Measures to avoid and mitigate potential adverse effect should be outlined. The approach described in the *EPHC draft National Wind Farm Development Guidelines – 2 July 2010* should be followed.

5. MONITORING AND REVIEW

This section should provide an outline of a monitoring, review and reporting programme for each sector of the proposal. The programme should be designed to meet the following objectives:

- Monitoring of compliance with emission standards and other performance requirements identified in the DPEMP.
- Assessing the effectiveness of the performance requirements and environmental safeguards in achieving environmental quality objectives.
- Assessing the extent to which the predictions of environmental effects in the DPEMP have eventuated.
- Assessing compliance with commitments made in the DPEMP.

6. DECOMMISSIONING AND REHABILITATION

The DPEMP should describe an on-going, staged approach to site decommissioning and rehabilitation throughout the proposal life.

A preliminary Decommissioning and Rehabilitation Plan or Closure Plan should be outlined.

7. COMMITMENTS

This section should contain a consolidated commitments table listing all of the commitments made throughout the DPEMP. Commitments must be sequentially numbered, unambiguous statements of intent. For each commitment, the table must specify when the commitment is to be implemented, specify who is responsible for the undertaking of the commitment, and refer to the section of the DPEMP where the commitment is detailed.

The commitments will provide a basis for the preparation of conditions of approval, should approval be granted.

8. CONCLUSION

This section should briefly describe the proposal and draw together the critical environmental effects of the proposal, both positive and negative. It should present a balanced overview of the net environmental effects of the proposal, and the extent to which any adverse effects on the environment can be satisfactorily avoided, mitigated, remediated or compensated. The conclusion should also describe how the proposal meets the objectives of relevant Commonwealth and State assessment and planning policies and legislation.

9. REFERENCES

This section should provide details of authorities consulted, reference documents etc. It should also include consideration of the currency, reliability and uncertainty of the information used in the DPEMP.

10. APPENDICES

As a means of improving readability of the DPEMP document, detailed technical information which supports the DPEMP should be included in appendices. The salient features of the appendices should be included in the main body of the DPEMP. Care should be taken to avoid

inconsistencies between technical content of Appendices and the DPEMP itself, unless carefully explained.

GLOSSARY

DPEMP – Development Proposal and Environmental Management Plan

DPIPWE - Department of Primary Industries, Parks, Water and Environment

DSEWPaC – Department of Sustainability, Environment, Water, Population and Communities

EMPC Act – Environmental Management and Pollution Control Act 1994

EPBC Act - Environment Protection and Biodiversity Conservation Act 1999 (Cth)

JAMBA/CAMBA - Japan-Australia and China-Australia Migratory Bird Agreements

MNES – Matters of National Environmental Significance as defined under the EPBC Act.

Tasmanian RFA - Tasmanian Regional Forest Agreement

RTI-DL-RELEASE-DPIPWE