Wind farm near Nine Mile Beach, Esperance

State Energy Commission of Western Australia

Report and recommendations
of the Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin 647
September 1992

ISBN 0 7309 4758 0
ISSN 1030 0120
Assessment Number 703

THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's recommendations.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding environmental conditions which might apply to any approval.

APPEALS

If you disagree with any of the assessment report recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of $10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
18th Floor, Allendale Square
77 St George's Terrace
PERTH WA 6000

CLOSING DATE

Your appeal (with the $10 fee) must reach the Minister's office no later than 5.00 pm on 18 September 1992.

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Summary and recommendations

The State Energy Commission of WA (SECWA) proposes to establish a 2,500 kilowatt wind farm within Flora Reserve 24486, at Nine Mile Beach, about 8km west of Esperance.

The proposal includes: eight to 12 wind generators, each mounted on a 33 metre (m) high tower, with a blade diameter between 27m and 33m; a control building at the wind farm site; eight kilometres (km) of overhead powerline to connect the wind farm with the Esperance Power Station; and access tracks or roads to the wind generators, control building and the powerline.

The site is on 'C' class Flora Reserve 24486, currently unvested, and comprises a series of high limestone and sand ridges, which rise rapidly from the sea. The boundary of the site runs approximately along the 80m contour, which forms a ridge-line extending parallel to the coast for about five kilometres. The soils on the site are infertile, and consist mainly of loose, highly-leached grey and white quartz sand. The vegetation of the wind farm site is part of the Fanny's Cove Vegetation System, and is classified as coastal dune scrub. There are no significant or rare or endangered fauna in the area

Since 1987, SECWA has investigated a number of sites for wind farms, including Albany, Geraldton and a site near Margaret River. The Esperance site is the preferred site because the wind regime is suitable, there is sufficient electrical demand from Esperance for a larger wind farm to be commercially viable, and the fuel oil used at the power station is relatively expensive.

The proposed wind farm would reduce the emissions of greenhouse gases from the existing power station as well as decreasing the emission of pollutants such as sulphur dioxide.

The proposal was referred to the Environmental Protection Authority in February 1992. In view of the potential environmental impacts associated with the proposal, the Authority determined that the proposal should be assessed under Part IV of the Environmental Protection Act as a Consultative Environmental Review (CER). Guidelines for the preparation of the document were issued by the Authority, and the CER was subsequently released for a four week period between 22 June and 20 July 1992.

A number of key issues were identified by the public, community groups, government agencies and the Authority in the assessment of this proposal. These include:

- use of wind power as an alternative energy source;
- choice of site;
- damage to the conservation estate;
- potential to cause dieback, visual pollution, vegetation destruction, increased risk of fire, and disruption to wildlife habitat;
- reserve vesting;
- site development plan, including access; and
- location of the powerline and access to bore sites.

As the generators will be located on one of the highest areas close to the coast and adjacent to a major tourist route, they are likely to be highly visible within the Esperance area. SECWA has carried out a 'seen area analysis' to determine the visual impacts of the wind farm. This study has indicated that the visual impacts could be managed by locating the generators in the northern-most part of the site.

Other environmental impacts such as risk of fire, dieback, vegetation destruction and erosion are considered by the Authority to be manageable with careful design, construction and management techniques.

The Authority has assessed the major environmental impacts associated with the proposal, as described in the Consultative Environmental Review, and raised within the public submissions, and has concluded that the proposal is environmentally manageable, subject to the recommendations made in this report and the commitments made by the proponent.

In reaching this conclusion, the Environmental Protection Authority identified the main environmental factors requiring detailed consideration as:

- protection of the scenic quality of this natural area; and
- protection of the conservation values of Flora Reserve 24486.

Following assessment of these issues, it is concluded that the proposal may be appropriately managed, subject to the proponent's commitments and the following recommendations.

Recommendation 1

The Environmental Protection Authority has concluded that the proposal to build a wind farm near Nine Mile Beach at Esperance as described in the Consultative Environmental Review, and modified following discussions and submissions is environmentally acceptable.

In reaching this conclusion, the Environmental Protection Authority identified the main environmental factors requiring detailed consideration as:

- **protection of the scenic quality of this natural area; and**
- **protection of the conservation values of Flora Reserve 24486.**

Accordingly, the Environmental Protection Authority recommends that the project could proceed subject to the Environmental Protection Authority's recommendations in this report and the proponent's commitments to environmental management.

Recommendation 2

While the general location proposed is acceptable, the specific sites for the generators have not yet been determined. The Environmental Protection Authority recommends that the wind generators, transformer, powerline and access road be located and designed to minimise their impact on the vegetation and the landscape quality of the area, to the satisfaction of the Minister for the Environment.

Recommendation 3

The Environmental Protection Authority recommends that the proponent prepare an Environmental Management Programme, which draws together the proponent's commitments for environmental management, and the provisions in Recommendation 2, to meet the requirements of the Minister for the Environment on the advice of the Environmental Protection Authority.

1. Introduction

The State Energy Commission of Western Australia (SECWA) proposes to establish a 2,500 kilowatt wind farm and associated 33kV powerline near Esperance. The wind farm is be built within 'C' class Flora Reserve Number 24486, near Nine Mile Beach approximately 8km west of the Esperance Town site.

2. The proposal

2.1 Background

SECWA owns and operates the Esperance Power Station, which currently burns medium fuel oil. In 1987, the Commission established a 360kW wind farm near Salmon Beach, southwest of Esperance, which feeds energy into the Esperance power grid, and which has also been used for research and development into the use of renewable energy.

SECWA estimates that the existing wind farm has decreased fuel oil consumption at the power station by 250,000 litres a year. As well as reducing fuel costs, the reduction in fuel consumption has caused a reduction in greenhouse and other gas emissions from the power station.

Since 1987, SECWA has investigated other sites for wind farms, including Albany, Geraldton and a site near Margaret River. These sites are not considered to be economically viable because they are located in areas serviced by the main power grid. Alternative sites which are not on the power grid have also been investigated. However, these have been found to be too small to support more than one or two wind generators each and are not economically viable.

The Esperance site is the preferred site for the wind farm because the wind regime is suitable, there is sufficient electrical demand from Esperance for a larger wind farm to be commercially viable, and the fuel used at the power station is relatively expensive.

The proposal was referred to the Environmental Protection Authority in February 1992. In view of the potential environmental impacts associated with the proposal, the Authority determined that the proposal should be assessed under Part IV of the Environmental Protection Act as a Consultative Environmental Review (CER). Guidelines for the preparation of the document were issued by the Authority, and the CER was subsequently released for a four week period between 22 June and 20 July 1992.

2.2 Proposal

The proposal includes the following major elements:

- eight to 12 wind generators, each with a rated capacity of between 200 and 300kW;
- each generator will be mounted on a 33m high tower, with a blade diameter between 27m and 33m;
- generators proposed to be separated by approximately 300m to ensure that the wind regime of each generator is not significantly affected by the other generators;
- a control building at the wind farm site;
- 8km of overhead powerline to connect the wind farm with the Esperance Power Station; and
- provision of access tracks or roads to the wind generators, control building and the powerline.

2.3 Location and existing land use

The wind farm is proposed to be located about 6km from the nearest residence. Nearby land uses include agriculture, recreation such as dune buggies and trail bikes, Common Land, and a caravan park and chalets.

The wind farm would be located within a 'C' class Flora Reserve 24486, which covers an area of approximately 12 621 hectares (ha). The wind farm is proposed for an area with an elevation in excess of 80 metres. The exact site of the wind generators will not be finalised until after tenders have been let, and detailed site studies carried out. However, approximately 3.4ha (less than 0.03% of the reserve) is likely to be affected by clearing for the wind generators, control building and access tracks.

Current uses of the reserve include sightseeing, bushwalking and trail bike riding.

Flora Reserve 24486 is currently unvested. Following any granting of environmental approval of the proposal, SECWA is likely to apply to the Department of Land Administration to excise the portion of the reserve affected by the wind farm, "for the purposes of wind farm electricity generation."

The approximate route for the power line is shown in Figure 1. The line is proposed to be located underground between the towers. The powerline route crosses Flora Reserve 24486, an area of Common Land (Reserve No 4180) immediately east of the site, and the Esperance Town Site.

2.4 Description of options

The alternatives investigated for this project are:

1. use of heavy fuel oil in the existing power station;
2. continuing to use medium fuel oil, ie the no-action alternative; and
3. constructing an additional wind farm.

Converting the power station from medium fuel oil to a cheaper heavy fuel oil is likely to significantly increase the emissions of sulphur dioxide above current levels. Several areas near the power station are now zoned residential, and may lead to pressure on the power station to reduce pollutant emissions. Therefore, converting to a heavy fuel oil is not considered a feasible alternative on environmental and health grounds.

The no-action alternative is to keep the Esperance Power Station operating on medium fuel oil. SECWA considers that this option is neither cost effective nor environmentally sound, and would become even less cost effective if demand increases.

SECWA prefers the third option.

3. The existing environment

The existing environment is described in detail in the Consultative Environmental Review. Two years of data collected near Salmon Beach indicate that wind speeds are strong and consistent enough to support a commercial wind farm. The preferred site provides good exposure to all wind directions, particularly the predominant southerly to westerly winds.

Flora and fauna studies undertaken as part of the review indicate that there are no significant or rare or endangered species in the vicinity of the proposal.

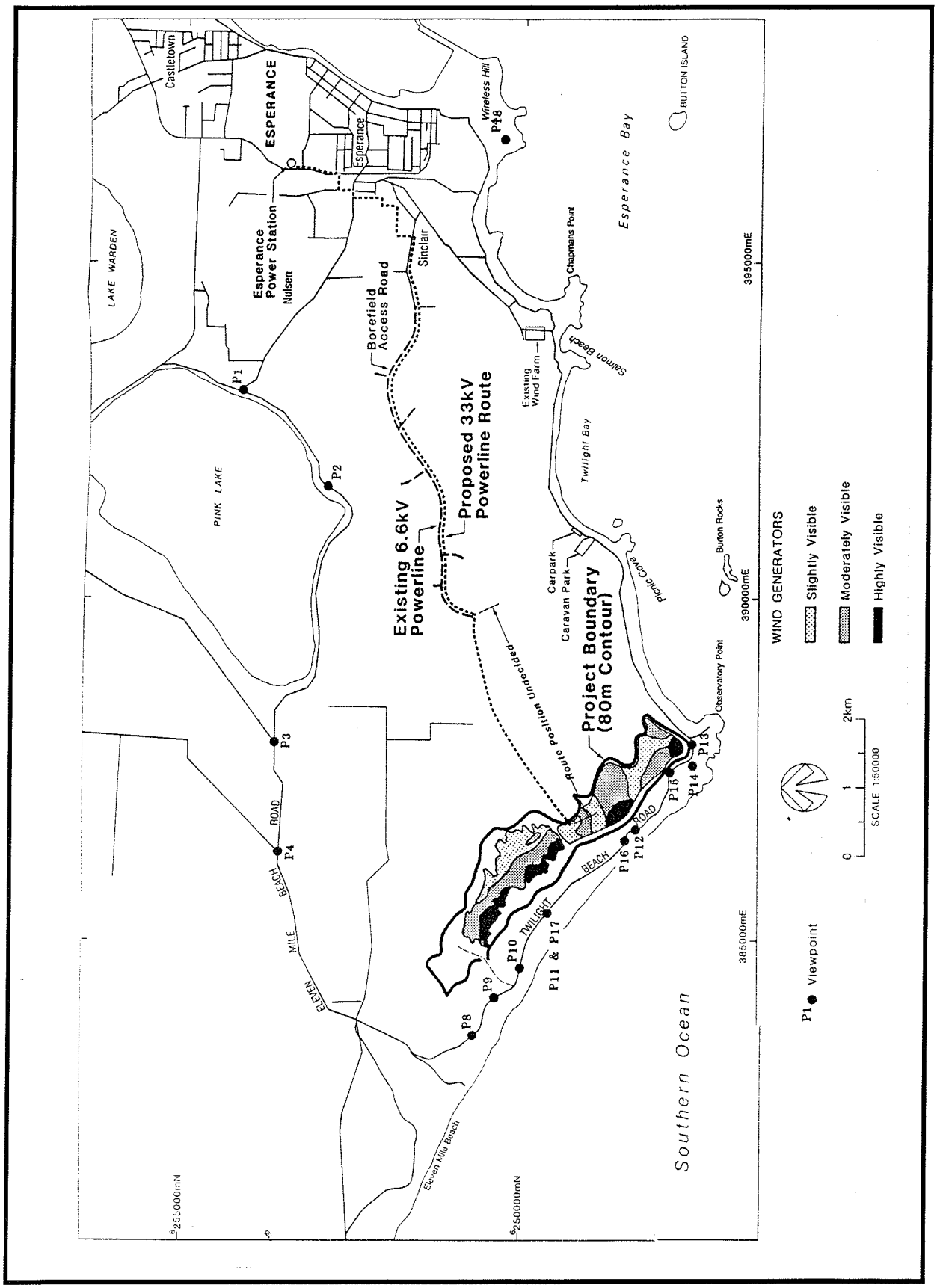

Figure 1: Location plan for proposed Esperance Wind Farm (ref: Dames & Moore 1992)

4. Public review

During the four week public review period, five submissions were received from members of the public, community groups, and government agencies. A summary of these submissions is presented in Appendix 1. The proponent's response to the issues raised is presented in Appendix 2.

The main environmental issues raised were:

- use of wind power as an alternative energy source;
- choice of site;
- damage to the conservation estate;
- potential to cause dieback, visual pollution, vegetation destruction, increased risk of fire, and disruption to wildlife habitat;
- reserve vesting;
- site development plan, including access; and
- location of the powerline and access to bore sites.

5. Environmental impacts and their management

5.1 General

The environmental effects of electricity generation particularly the production of CO_2 and other greenhouse gases, are causing concern. The reliability and efficiency of renewable energy applications has improved markedly over the past decade, but capital and maintenance costs are still high relative to conventional energy sources. Renewable energy technologies tend to be most cost effective in remote areas where the cost of installing conventional plant, or connecting communities to the grid, is high.

SECWA estimates that the proposed 2500kW wind farm will result in a reduction of up to 1.6 million litres of medium fuel being burnt at the Esperance Power Station each year. The reduction of greenhouse gases is in line with current Government policies.

Following consideration of the Consultative Environmental Review, submissions from the public, community groups and Government agencies, the Environmental Protection Authority has concluded that this proposal is environmentally acceptable, subject to the requirements compliance with commitments as detailed by the proponent (Appendix 3) and the recommendations which follow.

Recommendation 1

The Environmental Protection Authority has concluded that the proposal to build a wind farm near Nine Mile Beach at Esperance as described in the Consultative Environmental Review, and modified following discussions and submissions, is environmentally acceptable.

In reaching this conclusion, the Environmental Protection Authority identified the main environmental factors requiring detailed consideration as:

- **protection of the scenic quality of this natural area; and**
- **protection of the conservation values of Flora Reserve 24486.**

Accordingly, the Environmental Protection Authority recommends that the project could proceed subject to the Environmental Protection Authority's recommendations in this report and the proponent's commitments to environmental management.

In the Authority's experience it is common for details of a proposal to alter through the detailed design and construction phase. In many cases alterations are not environmentally significant or have a positive effect on the environmental performance of the project. The Authority believes that such non-substantial changes, and especially those which improve environmental performance and protection, should be provided for.

The Authority considers that if the proposal has not been substantially commenced within five years of the date of this report then such approval should lapse. After that time, a further consideration of the proposal should only occur following a new referral to the Authority.

5.2 Flora Reserve 24486

Alternative routes for the powerline have not yet been considered by SECWA as they are dependent on the exact location of the wind generators. However, the short distance from Esperance is expected to minimize the cost of the power line.

Approximately 3.4ha of the reserve is likely to be affected by clearing for the wind generators, control building and access tracks. This area is not considered to be significant in terms of the total area of the vegetation types, which are represented in Fitzgerald River, Stokes, Cape Le Grand and Cape Arid National Parks. The Department of Conservation and Land Management (CALM) has not recommended the Reserve to be included in its vested reserves. CALM's South Coast Regional Plan recommends that only a portion of Reserve 24886 adjacent to Lake Mortijinup Nature Reserve, well away for the wind farm site, should be added to the Lake Mortijinup Reserve.

The Environmental Protection Authority considers that use of part of Reserve 24886 for a wind farm is environmentally acceptable, provided that potential environmental impacts are managed through environmentally sensitive design, construction and maintenance procedures.

5.3 Visual impacts

It is inevitable that most proposals for wind farms will be in exposed regions, where the highest mean wind speeds are found. The visual impacts on the landscape of an exposed region, and the possibility that the impacts could generate a negative public response to wind farms, has to be balanced against the desirability of exploiting a clean, renewable energy resource.

The proposed wind generators will be 60% larger than the existing generators, although their general appearance will be similar..

To determine exactly where and how much of the wind towers could be seen, and their visual sensitivity, SECWA commissioned a 'seen area analysis' of the site using a Geographic Information Management System (GIMS). Plots showing the areas from which the wind generators could be seen were produced, and a composite visibility map shows the areas in which the wind generators would be slightly visible, moderately visible and highly visible. The visual sensitivity, the visual objectives, and whether they could be met were determined for each of the viewpoints, and are presented in Table 1 of Appendix E of the CER document.

In summary, the seen area analysis determined that:

(1) the most conspicuous view of the wind farm would be from Twilight Beach Road between Picnic Cove and Observatory Point, if the generators were sited in the south eastern corner of the project area, or on the lower slopes, and these locations would have a medium to high visual sensitivity;

(2) the wind generators would be visible from large sections of the inland part of the Tourist Loop, and would appear silhouetted on the horizon, regardless of their location within the project area;

(3) the areas where the wind farm would be directly in front of the viewer include the lookout near Pink Lake, and the lookout on Wireless Hill. However the viewpoints are six and 10kms from the project area and the visual sensitivity has been determined as medium to low; and

(4) residential areas in Esperance are more than 8kms from the project area, and at this distance the visual sensitivity would be low.

If the wind generators are located in the middle or northern part of the project area and on the inland slopes, only travellers on the inland portions of the Tourist Loop will be able to view the wind farm continuously. Travellers along the coastal portion of the Tourist Loop will see only occasional glimpses of the wind farm, and it will not be visible from the major coastal lookouts such as Observatory Point.

From the 'seen area analysis' it was apparent that opportunities exist for locating the powerline to minimize the visual impact, generally within gullies and depressions on the inland slopes of the project area, avoiding ridgelines. The powerline between the Water Authority borefield and the power station will utilize the existing corridor through residential areas, and will be highly visible in this area.

Other ways in which the visual impacts can be managed are:

(1) Using appropriate colours for a coastal environment.

(2) Locating the proposed powerline in the valleys inland of the project area, avoiding all ridgelines.

(3) Locate the associated infrastructure such as the transformer below the ridgeline.

The results of this visual assessment provide a guide for locating the wind generators in conjunction with other siting criteria. As a result, the Authority has concluded that the visual impacts of the proposed wind farm can be managed by the careful location of the wind generators, the access road and the powerline.

Recommendation 2

The Environmental Protection Authority recommends that the wind generators, transformer, powerline and access road be located and designed to minimise their impact on the landscape quality of the area, to the satisfaction of the Minister for the Environment.

5.4 Maintenance of the environmental values of the area

5.4.1 Fauna

SECWA suggests that, based on overseas experience, the tips of the wind generator blades should be painted in a dark colour to prevent birds flying into them. Department of Conservation and Land Management guidelines suggest the generators should be one colour overall. The Authority considers that this is both a faunal conservation and a visual quality issue and that it should be resolved during the detailed design phase, as set out in Recommendation 2.

5.4.2 Dieback

The Authority recognises the importance of controlling dieback in the Reserve, and SECWA has made a commitment to manage dieback.

5.4.3 Noise and dust

The site is 6km from the nearest residential areas. SECWA has made a commitment to maintain the wind generators regularly so that noise levels are minimized, and to damp down the site during construction if dust generation is excessive.

5.4.4 Wind and water erosion

The loose quartz sands at the site are easily eroded by wind and water when the vegetation cover is removed. The Salmon Beach wind farm site had problems with erosion, which SECWA has corrected. SECWA has made a commitment to minimise wind and water erosion at the site, and to monitor the site and undertake remedial measures in any problem areas.

5.4.5 Vegetation destruction and fire

Powerlines are normally protected from fire by the maintenance of a fully cleared or partially cleared track beneath the powerline, in rural areas, generally about 6m wide. In areas of low vegetation such as the project area, a fully cleared fire protection strip is unnecessary, and sufficient protection may be given by maintaining low vegetation under the powerline. In view of the erosion hazard in the area, the Authority considers that protection from fire and from erosion should be managed in an integrated manner.

The Environmental Protection Authority acknowledges that SECWA has made commitments to manage these issues. As the wind farm is to be sited in a Flora Reserve, the Authority proposes that the Department of Conservation and Land Management should oversee the implementation of these measures.

Recommendation 3

The Environmental Protection Authority recommends that the proponent prepare an Environmental Management Programme, which draws together the proponent's commitments for environmental management, and the provisions in Recommendation 2, to meet the requirements of the Minister for the Environment on the advice of the Environmental Protection Authority.

6. Conclusion

The Environmental Protection Authority considers that the environmental impacts associated with the wind farm proposal identified in this assessment report are manageable, subject to the recommendations made in this report and the commitments made by the proponent.

7. References

Environmental Protection Authority, Guidelines for Wind Farm Consultative Environmental Review, 1992.

State Energy Commission, Proposed Wind Farm near Nine Mile Beach at Esperance, Consultative Environmental Review, June 1992.

Appendix 1

Summary of public submissions

WINDFARM NEAR ESPERANCE
PUBLIC ENVIRONMENTAL REVIEW

Summary of public submissions

1. Use of Wind Power as an alternative power source

Submitters stated that they strongly support the use of wind power as an alternative to the use of fossil fuels.

Apart from the proposed location the submiters said that they were happy with this proposal.

The figure of 1.6 million litres in distillate usage is a huge saving in money and a big reduction in Greenhouse gases.

2. Choice of Site

The establishment of a wind farm on this site will set a precedent for other forms of development in the conservation estate. This has already happened in the U.K. and there is now considerable public opposition to wind power in Britain. Submitters want wind power in W.A. to succeed but will not support it if it means the degradation of our conservation estate.

Nature reserves are intended for the conservation of flora and fauna, nor for the production of energy for human consumption. Only essential infrastructure such as fences, signs and fire breaks are acceptable in such places. Wind power should be produced preferably on degraded land.

SECWA had four possible sites for the wind farm (page 6). Submitters believe that these should be reconsidered. SECWA's logic is curious when they claim that some of these sites could be uneconomic when they obviously have not included the cost of the environmental damage that would be produced at the Nine Mile Beach site.

3. Damage to Conservation Estate

SECWA has a poor record in its dealings with conservation areas, and there are many examples of high voltage power lines traversing conservation areas (e.g.. Melaleuca Park, Bull Creek, North Lake) where considerable damage has resulted.

The wind farm has the potential to cause the following undesirable impacts on the nature reserve:

1. introduction of dieback in a highly susceptible area;
2. visual pollution of a scenic landscape with wind turbines and power lines;
3. destruction of vegetation by maintenance vehicles;
3. increased risk of fire;
4. disruption of wildlife habitat and sever threat to birds.

Submitters oppose any attempt to construct the wind farm in a nature reserve, and hope that the EPA will also take a stand on this important matter of principle.

4. Reserve Vesting

CALM's South Coast Regional Plan recommends that only a small portion of Reserve 24486, adjacent to Lake Mortijinup Nature Reserve, and well away from the proposed site be added to that Reserve (Recommendation E.15).

CALM would support a change in purpose for that portion of the Reserve which may become a wind farm.

5. Site Development Plan

It is important that CALM and EPA review the Site Development Plan.

6. Power Line

It is unclear whether SECWA would contribute to the proper maintenance of the existing track currently servicing the Water Authority's borefield, which is also proposed to be used by SECWA in servicing the new 33 KV Power Line.

There is also no mention of provision for adequate working clearances of the new power line to individual bores located close to this access track.

Appendix 2

Proponent's response to public submissions

Your Ref 3/92 Ms G Corbett
Our Ref 5E/2/2
Enquiries Ian Morrison
Telephone 326 4734

State Energy Commission
of Western Australia
363-365 Wellington Street
Perth Western Australia 6000
GPO Box L921 Perth 6001
Telephone (09) 326 4911
Fax (09) 326 4595
Telex AA92674

SECWA

4 August 1992

The Chairman
Environmental Protection Authority
8th Floor "Westralia Square"
38 Mounts Bay Road
PERTH WA 6000

Attention : Ms Gabby Corbett

Dear Sir

2.5 MW WIND FARM NEAR 9 MILE BEACH, ESPERANCE
(ASSESSMENT NO 703)

Please find attached our responses to your list of comments and questions attached to your letter dated 24 July 1992. The title "Public Environmental Review" on your list should of course be "Consultative Environmental Review".

Yours faithfully

Ian Morrison
Project Manager

NINE MILE BEACH WIND FARM ESPERANCE
Consultative Environmental Review

Responses to public submissions

1. Use of Wind Power as an alternative power source

SECWA is pleased with the support indicated for the installation of a wind farm at Esperance.

For the wind farm to be viable it must be capable of supplying power to the Esperance grid at a cost lower than can be provided by the existing diesel power station.

This cost is largely dependant on the wind farm location. It was as a result of monitoring wind at various locations for up to five years that the proposed site was chosen. Even though the proposed site has one of the highest mean wind speeds of suitably large sites near Esperance the analysis of costs reveal that the project is only marginally viable.

The site selection process is described in the next section.

2. Choice of Site

We cannot accept the argument that the establishment of a wind farm on this site will set a precedent for other forms of development elsewhere in Western Australia. Any other project would require to be approved in a similar way to this project. We cannot comment on planning approval procedures in Britain which differ from those in this State.

It is inevitable that most proposals for wind farms will be in exposed regions, where the highest mean wind speeds are found. We therefore have to weigh the desirability of exploiting a clean, renewable energy resource against the visual impact on the landscape.

We are advised that CALM's South Coast Regional Plan recommends that only a portion of Reserve 24886, adjacent to Lake Mortijinup Nature Reserve, and which is well away from the proposed wind farm site, should be added to the Lake Mortijinup Reserve.

SECWA concurs with CALM's philosophy of use of nature reserves. Due to the unvested status of Reserve 24486 and the fact that CALM has not recommended the area surrounding the proposed site for addition to existing vested reserves, SECWA may apply to change the purpose of that portion of the Reserve for the purposes of wind farm electricity generation.

SECWA is unaware of any 'degraded' land which is suitably located for use by wind farm generation.

To reiterate, to be viable a wind farm must be located where the highest mean wind speeds are found. This usually occurs in passes in mountain ranges or on ridges such as is proposed at Esperance where the wind is accelerated by the terrain.

It should be noted that further work by SECWA has refined the proposed location of the wind farm. Some of the the highest mean wind speeds within the project area boundary have been found to occur in the area indicated as "Possible Wind Turbine Sites" on the attached marked up Composite Visibility Map, figure 5 in the CER report. Further reference to this figure is made in section 3.(b).2, Visual Pollution, of this response.

With reference to the comment relating to the other three sites mentioned on page 6 of the Consultative Environmental Review (CER) report it should be noted that the paragraph relates to the three sites which were being investigated for purposes of the installation in 1987 of the six small (60kW) wind turbines. As a result of these investigations the existing wind farm was built at Salmon Beach.

It is stated in the report that these investigations revealed that at Born Free Park the wind speeds were too low and at Wireless Hill the site was too small. It logically follows that for the proposed wind farm, which will have a output capacity seven times that of the existing wind farm, both of these sites are still unsuitable.

With respect to the Salmon Beach site, where the existing wind farm is located, the block of land adjacent to the wind farm has been subdivided preventing expansion to the east and the rifle range prevents expansion to the west or the north. The ocean lies to the south.

It was for these reasons a new site was required. The process used to determine the location of the proposed site is described on page 6 in the CER report.

3. **Damage to Conservation Estate**

(a) With any development there will be a wide range of views as to its impact on the environment and how that impact has been handled by the developer. In the end it is a matter of value judgement as to whether or not the result is acceptable.

SECWA believes that it has demonstrated an environmentally responsible approach during the construction of high voltage transmission lines. For example, at Melaleuca Park, a CALM reserve north of Perth, SECWA undertook a vegetation and rare flora assessment survey and investigations for clearing, construction, operation and dieback hygiene for the 330kV easement. These surveys were prepared in consultation with Department of CALM officers.

SECWA is now developing an environmental management programme to monitor the area and to undertake restorative measures where applicable.

SECWA will adopt the same environmentally responsible approach for the construction, operation and maintenance of the wind farm.

(b) Potential to cause the following undesirable impacts

SECWA believes the issues raised have been adequately covered in the CER report for the proposal.

However, to reiterate:-

1. Dieback

SECWA and its contractors will follow strict dieback hygiene procedures to minimise the risk of introducing dieback or weeds during powerline construction and maintenance. These will include washing the undersides of vehicles before entry and adherence to the guidelines set out in the most recent CALM Dieback Hygiene Manual. The design of the access track will incorporate measures to prevent the spread of dieback due to runoff.

2. Visual Pollution

In appendix B of the CER report, CALM Guidelines for Landscape Assessment of the Esperance Wind Farm, section 2.6 states that intimate visual and physical public access to the existing windmill site provides considerable assistance in managing public visual impact concerns. ..... The windmills are appreciated in context with their surrounding landscape, in foreground, middleground and background settings.

The area being considered in detail for the wind farm is shown marked up as a series of possible wind turbine sites on the attached Composite Visibility Map (figure 5 in the CER report). This area has been selected to provide a compromise between maximum exposure to the wind the and minimum visual impact. The wind farm is proposed to be located approximately one kilometre back from Twilight Beach Road near Ten Mile Lagoon in an area "moderately visible".

3. Destruction of Vegetation by Maintenance Vehicles

Maintenance of the wind farm and the power line will be carried out using the construction access tracks constructed in accordance with CALM guidelines. There is no reason to expect that vegetation will be destroyed as a result of maintenance of the wind farm.

On the other hand it is observed that the route of the proposed power line is criss-crossed with trail bike tracks with resultant damage to the vegetation. It is obvious that this is a popular activity in the area.

4. Increased Risk of Fire

SECWA is anxious to promote adequate fire protection to protect its facilities from fire damage and to reduce the risk of fire spreading to neighbouring locations. The design of the powerline proposed will minimise the risk of pole-top fires.

5. Disruption of Wildlife Habitat

The prime impact of the project on fauna is the barrier to faunal movement movement created by the powerline access route and the removal of vegetation for wind turbine tower foundation installation.

As described in Section 5.1 and 5.2 of the CER report, it is expected that the impact will be minimal due to the reduced clearing prescribed for the powerline extension and tower locations.

SECWA has suggested in the CER report (Section 4.1.3) that in order to reduce the incidence of birds flying into the blades of the wind generators the tips of the blades should be painted a dark colour.

4. <u>Reserve Vesting</u>

SECWA concurs with CALM's philosophy of use of nature reserves. Due to the unvested status of Reserve 24486 and the fact that CALM has not recommended the area surrounding the proposed site for addition to existing vested reserves, SECWA may apply to change the purpose of that portion of the Reserve for the purposes of wind farm electricity generation.

5. **Site Development Plan**

As is stated in Section 8.11 of the CER document SECWA will prepare a site development plan to the satisfaction of EPA. As is stated in Section 8.10 of the CER report SECWA will consult with CALM in the preparation of the plan.

6. **Power Line**

SECWA would be responsible for any damage caused to the existing access track to the borefield which was caused by SECWA activities.

During detailed power line route selection care would be taken to ensure adequate working clearances were maintained at individual bore sites. SECWA will discuss the planned route with WAWA at Esperance before construction of the power line commences.

Appendix 3

Proponent's commitments to environmental management (as contained within the Consultative Environmental Review)

8.0 COMMITMENTS

8.1 CLEARING OF VEGETATION

Clearing of vegetation for the wind generators, control building, access roads and powerline will be kept to the minimum necessary.

8.2 REHABILITATION

All areas disturbed during construction and not needing to be kept cleared will be rehabilitated after construction. This will be achieved by replacing topsoil and mulched vegetation, which will be stockpiled during clearing, on the disturbed areas and monitoring regrowth. Remedial measures such as seeding or mulching will be taken on any areas which do not show satisfactory regeneration after the first couple of seasons.

8.3 ABORIGINAL SITES

No aboriginal archaeological sites are known or believed to exist in the project area. However, once the final locations of the wind generators, control building, access tracks and powerline have been finalised, SECWA will commission an Aboriginal Sites survey of these areas. Should any aboriginal archaeological sites be found then the Registrar of Aboriginal Sites will be informed.

8.4 PUBLIC ACCESS

Subject to CALM and EPA approval of a suitable access road, SECWA will provide public access to the base of one of the wind generators. Interpretive facilities will also be provided at the site.

8.5 POWERLINE CONSTRUCTION

Standard SECWA procedures regarding height and spacing of poles will be followed to ensure public safety and minimise fire risk from the powerline.

8.6 POWERLINE ROUTE

Where possible, the powerline will be sited low in the landscape to minimise its visibility.

8.7 DIEBACK AND WEED PROTECTION

Strict dieback hygiene measures will be adhered to during construction and operation of the wind farm, powerline and access roads/tracks to avoid the introduction of dieback and weeds.

These will include:

- o washing the undersides of all vehicles prior to entering the site (except on the completed access road);
- o obtaining all road building and fill materials from uncontaminated sources;
- o visual monitoring and prompt treatment of any isolated outbreaks of weed infestation; and
- o adherence to the guidelines set out in the CALM Dieback Hygiene Manual (1986).

8.8 NOISE

SECWA will undertake a regular maintenance programme to ensure that the noise levels generated by the wind farm are minimised.

8.9 EROSION CONTROL

SECWA will utilise the knowledge and techniques gained at the existing wind farm site to minimise wind and water erosion at the new site. These measures include landscaping, rehabilitation and careful siting of cleared areas. Any localised occurrences of erosion will be treated promptly.

8.10 VISUAL IMPACTS

SECWA will take care to site the powerlines, access tracks and the wind farm control building so as to minimise their visibility from outside the project area. SECWA will consult with the Landscape and Recreation Branch of CALM to determine the optimum location for the access track. The generator towers and blades will be coloured grey and/or white. The colour of the control building will be chosen so as to blend into the background. SECWA will undertake a further detailed visual impacts study, to the satisfaction of the EPA on the advice of CALM and DPUD, once the exact locations of the wind generators and powerline are known if the locations are significantly different to those considered in this study.

8.11 SITE DEVELOPMENT PLAN

SECWA will prepare a site development plan once the exact locations of the wind generators, powerline and access tracks are known. This plan will be prepared to the satisfaction of the EPA, and will address the following:

- the precise locations of the wind generators;
- the location and design of the access road;
- visitor parking area(s);
- the location and development of suitable lookouts;
- pedestrian paths;
- internal access tracks;
- the location and design of powerline routes and the wind farm control building;
- the design and colours of the wind generators;
- fencing of the wind farm; and
- erosion control.

8.12 DECOMMISSIONING

At the end of the life of the wind farm, unless further wind generation facilities are to be installed at the site, all structures will be removed, all cleared areas will be ripped and rehabilitated and the site will be returned to its original function as a flora reserve.

8.13 CONTRACTS

All contractors employed by SECWA during construction of the wind farm will be bound by these and any other commitments made by SECWA.