

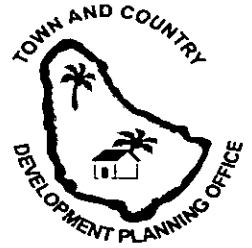


TOWN AND COUNTRY DEVELOPMENT PLANNING OFFICE

Block C, Garrison, St. Michael, Barbados, West Indies

Tel. No. (246) 467-3000 Fax No. (246) 430-9392

E-mail: townplanning@gob.bb



Our Ref.: 3262/11/04C

Date: 2005-10-13

The Barbados Light & Power Co. Ltd.
P.O. Box 142
Garrison Hill
ST. MICHAEL

Dear Sir,

**Re: Application No. 3262/11/04C - Construction of a Wind driven electrical
generating station at Lamberts East, Lamberts Plantation, St. Lucy**

Reference is made to the above captioned application and the Terms of Reference (TOR) for the proposed Environmental Impact Assessment (EIA).

You are hereby informed that the Terms of Reference has been evaluated by the relevant agencies and comments have been returned to the Chief Town Planner. These comments are herewith attached for your information.

You are given permission to proceed with the preparation of the Environment Impact Assessment but you must ensure that the comments on the Terms of Reference are taken into consideration in addition to those identified by you in the document. On completion, four (4) copies of the document must be submitted to the Chief Town Planner.

Your attention to the foregoing is appreciated.

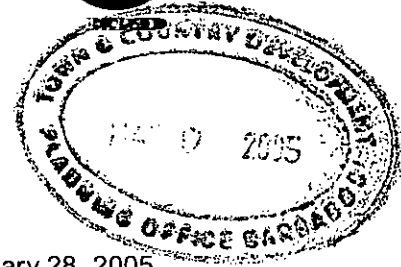
Yours faithfully

P. Bryan
for Chief Town Planner

PB/sdj



MEMORANDUM



FROM: DIRECTOR
ENVIRONMENTAL PROTECTION DEPARTMENT

13

TO: Chief Town Planner
Attn: Mr. Patrick Bryan

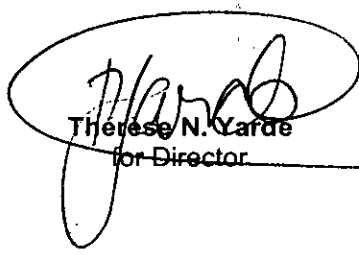
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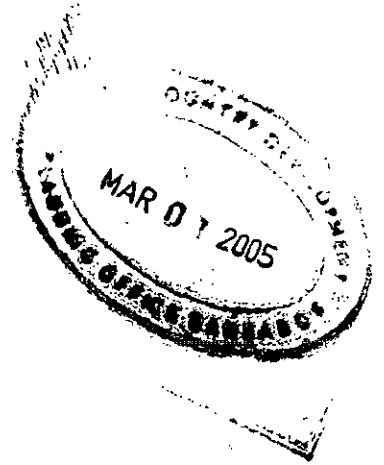
DATE: February 28, 2005

**Application No 3262/11/04C – Construction of a
Wind-Driven Generating Station at Lamberts St. Lucy**

The EIA outline submitted by Barbados Light and Power Company in respect of the above-captioned application provides, for the most part, adequate coverage of the environmental considerations attached to such a development. The comments of the Environmental Engineering Division are as follows:

- The EIA should outline and compare the socio-economic and environmental costs and benefits of the proposed development and potential alternatives. These alternatives should include (i) the "do nothing" scenario, (ii) the use of fossil fuels to provide the equivalent amount of energy, and (iii) alternative sites for the generating station.
- The Socio-Economic Assessment should include adequate and appropriate consultation with potentially affected or concerned stakeholders.


Therese N. Yarde
for Director



MEMORANDUM

FROM: PERMANENT SECRETARY
MINISTRY OF HOUSING, LANDS AND THE ENVIRONMENT
(ENVIRONMENT DIVISION)

TO: The Chief Town Planner
Town and Country Development Planning Office

DATE: February 25, 2005 **Ref: No.:** 8330/9/3 Vol. II

SUBJECT:

**Application No. 3262/11/04C --Construction of a Wind Driven
Generating Station to operate for 24 years and consisting
of eleven (11) turbines and associated equipment at
Lamberts Plantation, St. Lucy**

Reference is made to the memorandum dated January 31, 2005 received by the Environment Unit on February 10, 2005 regarding the above captioned subject.

2. The following headings need to be added to the proposal for Lamberts wind farm:

(a) **Scope of work**

Standard EIA techniques should be used including site reconnaissance, literature review, desktop research, field work, data analysis and interviews with appropriate personnel.

(b) **Background**

This section should be included in the report as a separate and distinct paragraph from the section labeled 'description of project'. The background should identify all of the alternative sites and should give an indication as to why Lamberts was finally chosen.

STP 'C'

(18)
Your attention please.

2005-03-04 2005-03-08
2005-03-04

(c) **Description of Environment**

Assemble, evaluate and present baseline data on the relevant characteristics, biological, environmental, socio-cultural and socio-economical setting. This information could be placed under the heading 'site description'. The information would include:

- ❖ Physical Environment- geology, topography, soils;
- ❖ Natural drainage features- surface drainage, flood risk;
- ❖ Air Quality- particulates and noise levels;
- ❖ Biological environment- vegetation cover, existing wildlife (flora & fauna), rare and endangered species, sensitive habitats, species of commercial importance, migratory bird species and their migratory path, nuisance pests and vectors; and
- ❖ Socio-cultural/socio-economic- land use, traffic patterns, proposed development, public health issues, employment, solid waste and demographics.

(d) **Legislative and Regulatory Considerations**

A description should be given of the pertinent regulations, standards and regulatory bodies governing environmental quality, health and safety protection of animal and plant species, parks and protected areas, siting and land use control.

The developer made reference to a document known as 'National Planning and Policy Document'. Documents such as the Environmental Management and Land Use Plan (EMLUP) and the Physical Development Plan, updated 2003 can be useful sources of information.

(e) **Determination, Mitigation and Management of Potential Impacts of the Project**

Sections 5.0 to 11.0, should be grouped under this broad heading. Impacts will be determined as negative, positive, direct/indirect, short/long term or unavoidable/irreversible. Cumulative impacts of the proposed development should also be highlighted. Mitigation and Management measures of these negative impacts may stay as they are in the existing TOR. Recommendations should be made for feasible and cost-effective measures to prevent or reduce significant negative

impacts to acceptable levels.

(f) **Recommendations for the Development of an Emergency Response Management Plan**

The EIA should contain provisions for an emergency Response Management Plan (ERMP) to ensure procedures are in place to handle emergencies. There needs to be a section that addresses natural disasters, specifically storm and hurricane events, this can be covered in the ERMP. This section should look at the possible impacts these disasters can have on windfarms and neighbouring communities and the measures that will be put in place to minimize these impacts.

(g) **Recommendations for the Development of an Environmental Management Plan (EMP)**

The EMP should contain an implementation plan for each of the mitigative protection and enhancement measures. The structure of the EMP should include objective; workplan; implementation schedule; manpower requirements for mitigation measures and budgetary provisions. In addition, a monitoring plan for the implementation of the mitigation measures and long-term minimization of negative environmental impacts needs to be included as well. This is a very important addition to any project EIA.

(h) **Social Impact Assessment**

Section 9.0 entitled 'Socio-economic assessment' should be renamed 'Social Impact Assessment', under which, the socio-economic assessment section would fall:

There needs to be some indication of the public's perceptions to the project, which should be obtained through stakeholder consultations. The public would include relevant governmental agencies, civil society and the general public of Barbados especially those of the surrounding area. A projection of the known and possible likely effects on the public should also be included in this section.

(i) **General**

- ❖ All of the major negative effects that pertain to windfarms namely electromagnetic disturbance; use of land, noise; impact on biodiversity, particularly bird strikes and impact on the landscape have been identified;
- ❖ The relevant photographs, maps and plans should be submitted. A plan of the area, with the proposed trail for the new road should be submitted, so that the reviewers can have an idea of what the impact of the road's footprint is on the surrounding area. The relevant agency i.e. Ministry of Public Transport should provide the substantial comment on this area;
- ❖ Section 6 'Noise Assessment' should detail Mitigation Measures. Part 6.1 which should discuss introduction and methodology is missing in the TOR at present and needs to be included;
- ❖ The methodology chosen in each case (sections 5.0-11.0) should clearly indicate the type of evaluation method or tool used to quantitatively assess the impact due to the proposed action e.g. cost-benefit analysis, geographic information systems (GIS) and weighted-scale matrix; and
- ❖ Section 4.2 should be entitled Zone of Visual Influence (ZVI);

3. Please contact the undersigned for any further information you may require at Telephone (246) 467-5708 or Fax (246) 437-8859.



NICOLE SCHOLAR-BEST, (Mrs.)
for Permanent Secretary

NSB/db



MINISTRY OF ENERGY & PUBLIC UTILITIES



FACSIMILE COVER SHEET

TO:	TOWN AND COUNTRY PLANNING	FAX NO:	430-9392
ATTN:	PATRICK BRYAN	DATE:	2005-06-23
ADDRESS:		OUR REF:	
		OUR FAX:	(246) 436-6004
FROM:		NO. PAGES (incl. Cover)	3

DEAR SIR,

PLEASE NOTE THAT WE APOLOGISE FOR ANY PROBLEMS IN RELATIONS TO YOUR NOT HAVING RECEIVED OUR COMMENTS.

I ASSUMED THAT THEY WERE IN YOUR POSSESSION SINCE FEBRUARY 2005

IF YOU HAVE A DOCUMENT IDENTICAL TO THE ATTACHED ON YOUR FILES, PLS, DISREGARD THIS ON

YOUR PART

19 JUNE 2005



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MINISTRY OF
ENERGY AND PUBLIC UTILITIES



Chief Town Planner
Town Planning Department
Ministry of Housing Lands and the Environment
Building C
The Garrison
St. Michael
Barbados

Attention :Patrick Bryan

Dear Sir

We have reviewed the draft Terms Of Reference (TOR) for the proposed wind farm, submitted by the Barbados Light and Power Company

Our staff have visited the proposed site and attended the meeting relating to the project in the past. Our comments are as follows -

1. Section 1. There should be a review of the environmental impact of the last wind turbine on an adjacent site in St. Lucy. This project though unrelated is visually close to the proposed site to be implicated by or implicate the social impact of the planned wind farm. The presences of an abandoned wind turbine near a new wind farm may suggest that when the windfarm ends its useful life the turbines will also be abandoned
2. Impact on grid stability both positive and negative should be identified and mitigation issues identified. How does the wind farm figure in the national electric grid management/expansion plans
3. Section 1. This should include description of national wind energy plans and policies. The site was identified through a national wind energy development process which has planning implications. All of this was done prior to the BL&P interest in the site

- 4 Section 3 The term "site environment" is vague This seems like a baseline assessment of the site in the present form.
- 5 Section 9 Assumes that there are only benefits rather than both benefits and disadvantages There should be an assessment of possible disadvantages and the identification of mitigation measures.
- 6 There is no section on impact on agriculture This is important since the windfarm is in an agricultural environment.
- 7 Impact on other utilities such as water and telephone The study should state if there are any major demands and how they would be affected.
- 8 There is an impact where the windfarm may be seen as a point of interest for locals and tourist The impact of this on the national and local community This impact needs to be identified and the cost and benefits nationally and locally need to be discussed
- 9 Hazard / Disaster issues and mitigation What are the possible both probable and improbable risks and what are the measures that will be put in place to mitigate against them
- 10 Global environmental impacts and benefits should be discussed Is there a net benefit or disadvantage and to what extent (expressed in Tons of Carbon)
- 11 Unlike fossil fuel generators wind turbines are very public in what they do If they are functioning, how often they function is usually known by the public if not the community There should be a plan identified, not necessary to mitigate negative public opinion but to introduce them the new and very public technology

In conclusion we consider the EIA as a positive step towards the development of the proposed wind farm and look forward to further developments of this project

Yours Sincerely



William Hinds

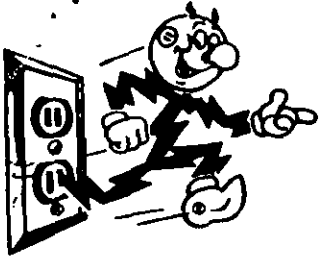
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2nd Fl. NPC Building
Wilkey, St Michael
BARBADOS

TEL Nos: (246) 427-8615 / 427-9806 / 429-8726

Fax Number (246) 436-6004

E-mail: energydiv@sunbeach.net



PHONE: (246) 436 - 1800
FAX: NO: (246) 429 - 6000

THE BARBADOS
LIGHT & POWER
COMPANY LIMITED

P.O. BOX 142
GARRISON HILL, ST. MICHAEL, BARBADOS, WEST INDIES

June 11, 2004

Mr. Mark Cummins
Chief Town Planner
Town & Country Planning Department
Blk C The Garrison
St. Michael

Dear Mr. Cummins,

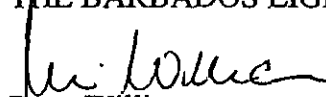
Re: Wind Power Project – Outline Planning Application

Attached is an application for permission to construct a wind driven electrical generating station at Lamberts East in St. Lucy.

Also attached is an outline of the Environmental Impact Assessment (EIA) that the Barbados Light & Power Co. Ltd. proposes to conduct for the project. The EIA will assess in detail the potential environmental impacts of the proposed development, including; pollution, landscape and visual, noise, flora and fauna, cultural heritage, highways and traffic, socio-economic, electromagnetic interference, geology, soils and hydrology. Mitigation measures will be identified and incorporated in the wind farm design to minimise the potential effects identified.

We would appreciate your comments on the proposed format for the EIA, and any areas that we may have overlooked.

Yours truly,
THE BARBADOS LIGHT & POWER COMPANY LIMITED


Peter Williams
Chief Operating Officer

RB:

cc: Managing Director
Generation Manager

Lamberts East Wind Farm

Environmental Impact Assessment

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REVISED (2001)

Application No.

Land Registration No.

Date received

TOWN AND COUNTRY DEVELOPMENT PLANNING OFFICE
Town and Country Development Planning Act, Cap. 240

Application for Permission to Develop Land

(the attention of applicants is drawn to the directions appended to this form)

TO THE CHIEF TOWN PLANNER:

I/WE HEREBY make an application for permission to carry out the development described hereunder and on the attached plans and drawings.

(Signed)

[Signature]
CHIEF OPERATING OFFICER

FULL NAME & ADDRESS OF APPLICANT (in block letters)

(State whether Mr., Mrs., Miss) *THE BARBADOS LIGHT & POWER CO. LTD.*

(Postal Address) *P.O. Box 142, GARRISON HILL,*

ST. MICHAEL

Telephone Number *436-1800*

If signed by an Agent on behalf of the applicant:

NAME & ADDRESS OF AGENT

Telephone Number

For office use only:

Officer's Comments:

Accepted by: Fee: Receipt No.

(the word "land" includes any buildings thereon)

- (1) (i) Particulars of the applicant's interest in the land (e.g., free holder, lessee, prospective purchaser,) etc.
PROSPECTIVE LESSEE
- (ii) If the applicant is a prospective purchaser of lessee of the land, state whether the vendor or lessor has consented to the proposed development -
YES . (FINAL LEASE COST UNDER NEGOTIATION)

(2) Address or location of the land to be developed.	(2) LAMBERTS EAST LAMBERTS PLANTATION ST. LUCY
(3) Describe briefly the proposed development, including the purpose for which the land and/or buildings are to be used. If they are to be used for more than one purpose, give details.	(3) CONSTRUCTION OF WIND DRIVEN ELECTRICAL GENERATING STATION TO OPERATE FOR 24 YEARS, AND CONSISTING OF ELEVEN (11) TURBINES AND ASSOCIATED EQUIPMENT
(4) (a) Area of site in square metres/hectares (b) Gross floor area metres/feet (c) Gross roof area metres/feet	(4) (a) APPROX. 2 KM ² (b) APPROX. 2,650 M ² ; EACH TURBINE REQUIRES 200 M ² FOR FOUNDATION AND WORKING AREA PLUS 450 M ² FOR SITE CONTROL ROOM (c) N/A
(5) (a) Where applicable state the number of lots to be created.	(5) N/A
(6) State the purpose for which the land and/or buildings are now used, and if used for more than one purpose, give details.	(6) AGRICULTURE (SUGAR CANE PLANTATION)
(7) (a) State whether the proposed development involves the use or construction of a vehicle access onto a road other than a Class IV road. (b) State whether the development is on the coastline.	(7) (a) YES. VEHICLE ACCESS TRACK MAXIMUM 4.5M WIDE AND APPROX. 1.5 KM. (SEE SITE LAYOUT DWG.) (b) NO
(8) Does the land form part of a sub-division plan approved or permitted by - (a) The General Board of Health; or (b) Chief Town Planner;	(8) (a) NO (b) NO
If so, state the reference number and date of approval or permission.	N/A
(9) If the land is to be used wholly or partly for industrial or commercial use, state:- (i) the nature of the proposed industry or business, including, if for industrial use, a brief description of the type of processes to be carried on;	(9) (i) ELECTRICITY GENERATION

(9) (ii) if for industrial use - (a) the amount and the means of disposal of any SOLID, LIQUID, or GASEOUS trade refuse or trade effluents.	(9) (ii) (a) N/A
(b) estimated water requirements in gallons per day.	(b) FOR FLUSHING TOILETS ONLY.
(c) estimated electricity requirements in Kilowatts.	(c) NONE
(d) estimated number of persons to be employed.	(d) DURING CONSTRUCTION APPROX. 40 DURING OPERATION APPROX. 2
(iii) If for industrial use - (a) Does the proposal involve use or storage of any hazardous material.	(iii) (a) NO
(b) If yes, state materials and approximate quantities.	(b) N/A
(10) Where appropriate state - (i) Source of water supply - (a) existing.	(10) (i) (a) NONE
(b) proposed.	(b) B.W.A. PLUS RAINWATER STORAGE (LOWER FLOOR)
(ii) Means of waste water and sewage disposal - (a) existing.	(ii) (a) NONE
(b) proposed.	(b) SUCK WELL
(11) Where appropriate state building materials - (i) Walls.	(11) (i) TURBINE TOWERS : TUBULAR STEEL
(ii) Roof covering.	(ii) BLADES : GLASS FIBRE REINFORCED CONCRETE
(iii) Roof supports.	(iii) FOUNDATIONS : STEEL REINFORCED CONCRETE.
(12) The amount of floor space involved: (a) the amount of retail floor space.	(12) (a) N/A
(b) the amount of office floor space.	(b) N/A
(c) the amount of institutional floor space.	(c) N/A
(d) the amount of warehouse floor space.	(d) N/A
(e) the amount of industrial floor space.	(e) CONTROL ROOM : APPROX. 450 M ²
(f) the amount of floor space common to more than one use (e.g., service area).	(f) N/A
(13) (a) Where applicable state the number of storeys/floors to be created.	(13) (a) N/A
(b) State the height of the proposed building(s) from the lowest point of the building(s).	(b) Feet <input type="text"/> Metres <input type="text" value="50"/> TURBINE HUB HEIGHT. (SEE TURBINE DIMENSIONS DWG.)
(14) (i) For apartment/hotels or town houses, state the number of units proposed.	(14) (i) N/A
(ii) For hotels and guest houses, state the number of bedrooms proposed.	(ii) N/A
(15) For places of public assembly, state the maximum seating capacity.	(15) N/A