

THE BARBADOS  
**LIGHT & POWER**  
COMPANY LIMITED

P.O. BOX 142  
GARRISON HILL, ST. MICHAEL, BARBADOS, W.I.

PHONE: (246) 436 - 1800  
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13 October 2008

Mr. Mark Cummins  
Chief Town Planner  
Town and Country Development Planning Office  
Block C  
Garrison  
ST. MICHAEL BB 14038

Dear Mr. Cummins

**Re: Application 3262/11/04C – Construction of a Wind Driven Electrical  
Generating Station at Lamberts East, Lamberts Plantation, St. Lucy**

Further to your letter dated July 24, 2008, Ref.: 3262/11/04C, please find enclosed a revised response prepared by our environmental consultants, AMEC Earth & Environmental.

Yours faithfully,  
**THE BARBADOS LIGHT & POWER COMPANY LIMITED**

Arthur Lewis  
**Senior Manager Generation (Ag.)**

RB:mk

Enc.

cc: Managing Director  
Chief Operating Officer  
Senior Planning Engineer – R Blackman  
Trainee Generation Engineer – C Gill

October 9, 2008

TV 61036

The Barbados Light & Power Co. Ltd.  
P.O. Box 142  
Garrison Hill  
St. Michael

Attention: Mr. Hallam Edwards

Dear Mr. Edwards:

**Re: Application No. 3262/11/04C  
Construction of a Wind Driven Electrical Station at Lamberts, East,  
Lamberts Plantation, St. Lucy**

Thank you for forwarding comments requesting additional clarification on our environmental assessment report for the above site. I have repeated the comments and provide responses in italicised fonts below.

1. Methodology of noise monitoring/sampling – this should include, but not limited to:
  - Information on the type of sound level meter used to take measurements;
  - Information on the specific locations of the receptor/sampling points from proposed project site;
  - Activities/conditions that might have affected noise levels at sampling locations (e.g. construction work in the area);
  - Meteorological conditions at sampling sites.

*Response:*

- *The sound measurements were performed using a Quest Technologies M-27 noise logging dosimeter. Prior to and after use, a calibration check was performed using a sound level calibrator.*
- *All of the locations were selected to represent the closest residences to the windfarm around the perimeter of the site. Specific locations where the noise measurements were taken are described in Section 5.2.1 and shown on Figure 5.2 of the report. The noise levels provided background information on the existing environment. The noise assessment of the windfarm however used the WHO guideline of 45dBA as a reference for acceptable overnight noise levels at the closest residences.*

- o *The only location where noise levels would be influenced by construction would be L2 at Date Tree where construction of a house was occurring and could have influenced the daytime noise levels. However, when determining the existing ambient noise levels it is the night-time levels that are the lowest levels which need to be considered. At that location the lowest noise level ( $L_{EQ}$ ) attained at night was in the 55dBA range which is higher than the predicted noise levels from the wind farm at that location.*
  
- o *The following table presents the meteorological conditions during the noise monitoring.*

Location : Caribbean Institute for Meteorology & Hydrology, Husbands, St. James									
Defined Test Periods (Section 5.2.1 EIA BLPC)									
Lamberts East Wind Farm)	Year	Month	Day	Hour	Temp (°C)	RH (%)	Wndspd (knots)	Wnmdir (°)	Rnfl (mm)
	2006	5	18	8	28.6	75	11.0	9	0.0
	2006	5	18	11	31.0	64	14.0	13	0.0
	2006	5	18	14	31.0	64	15.0	15	0.0
Lamberts Plantation - 14:00 May 18 to 13:15 May 19	2006	5	19	8	28.6	72	12.0	13	0.0
	2006	5	19	11	31.5	51	15.0	14	0.0
	2006	5	19	14	31.6	54	15.0	15	0.0
	2006	5	20	8	29.0	71	12.0	12	0.0
	2006	5	21	8	29.0	68	12.0	8	0.0
Date Tree Hill - 14:15 May 21 to 12:40 May 22	2006	5	22	8	28.5	73	11.0	12	0.0
	2006	5	22	11	31.2	57	16.0	12	0.0
	2006	5	22	14	31.2	60	14.0	13	0.0
	2006	5	23	8	28.0	74	13.0	11	0.0
	2006	5	23	11	31.1	54	15.0	15	0.0
	2006	5	23	14	31.0	57	16.0	10	0.0
SDA Church, Cave Hill - 14:45 May 23 to 13:00 May 24	2006	5	24	8	28.6	67	12.0	10	0.0
	2006	5	24	11	31.1	57	12.0	12	0.0
	2006	5	24	14	31.0	52	12.0	12	0.0
	2006	5	25	8	28.5	71	12.0	12	-
	2006	5	25	11	30.5	62	12.0	14	-
Josey Hill - 13:00 May 25 to 09:40 May 26	2006	5	25	14	31.0	57	12.0	13	-
	2006	5	26	8	26.0	88	8.0	4	-
	2006	5	26	11	29.0	71	9.0	6	-
	2006	5	26	14	29.0	66	10.0	12	-

2. Methodology/rationale for the 350m separation distance and the additional 50m from roads and footpaths. From what point is the 350m measured?

*Response:*

*The 350 metres separation distance from the closest residence was one of the guidelines used during the site screening stage to select acceptable sites. This is an industry guideline based on seven rotor diameters, which is normally adequate to mitigate noise effects and reduce shadow flicker. The actual effects are then predicted based on the turbine specifications and computer modelling over a range of wind velocities and refinements are made if necessary. The separation is measured from the base of the tower. The 50 metre separation from roads and footpaths is a reasonable setback around the tower to allow for maintenance access and equipment laydown.*

3. What constitutes daytime hours during which construction is proposed to take place?

*Response:*

*Construction will occur within the hours of 7 am to 7pm. As in any construction project, there may be a need to extend the working hours during special circumstances such as major concrete pours.*

4. Details and specifications of the turbines proposed to be used.

- Is the 45d BA turbine noise quoted in the ES applicable to one turbine or is it the cumulative sound generated by the proposed 11 turbines?

*Response:*

*The specific turbines to be used have not been purchased as selection will follow a competitive tendering process once the project has been approved. The Environmental Impact Assessment report was based on the installation of Vestas V52-850kW turbines. The Vestas V52-850kW turbine is typical of the size and type of wind turbine that will be installed. Appendix D provides information on the Vestas V52-850kW turbine*

*The noise assessment was based on all 11 turbines operating simultaneously.*

5. Further details on the modelling used to predict Shadow Flicker. (European standards quote maximum 30 hours per year or 30 minutes per day).

*Response:*

*The software used to calculate shadow flicker results was "WindFarm". Information on WindFarm can be found at [www.ReSoft.co.uk](http://www.ReSoft.co.uk). As recommended in the Environmental Impact Assessment Report, the effects of shadow flicker can be mitigated by selectively*

*preprogramming the turbines to shut down during the brief periods when the sun is low on the horizon and has the potential to cause shadow flicker.*

6. Dust control measures should be included in mitigation of impacts for construction equipment operation.

*Response:*

*Dust control measures are covered in Section 7.1.3 of the Environmental Impact Report and also in more detail in the Environmental Management Plan for Construction as contained in Appendix C. The contractor will be required to adhere to the mitigation methods as specified in the Environmental Management Plan for Construction.*

7. The methodology for the surveys of bat populations should be described and further information on if the field survey was designed to take into account resident knowledge and experience. A post-construction Environmental Management Plan should be submitted.

*Response:*

*AMEC's biologist consulted with Mr. Wayne Burke of the Graeme Hall National Park regarding bird and bat populations. Significant published information was available regarding the local bird populations for the Lamberts area, but there was no source of information on resident bat populations other than anecdotal. In the absence of records for bat populations the AMEC biologist completed field surveys during daytime hours of potential habitat for bats in the area of the Lamberts site. As the wind farm site has little in the way of stands of trees which would provide habitat, the survey extended to gullies in the area. There were no significant areas for bat hibernacula found. In addition to the habitat survey, field visits were conducted during evening hours to determine if there were any sightings of bats. No bats were observed during the daytime or evening field visits suggesting that there was no large resident population. .*

8. A post-construction Environmental Management Plan should be submitted.

*Response:*

*An Environmental Management Plan for the operations phase has been included with the environmental report in Appendix E.*

9. Submission of a Geo-technical survey to establish the stability of the area for the proposed development.

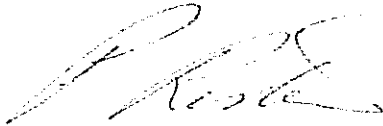
*Response:*

*It is not usual to complete geotechnical studies as part of the environmental assessment. The geotechnical study will be completed during the site engineering design, as the testing should*

*be done at the precise location of each turbine. The design loads will be specific to the model of turbine selected and will be specified by the turbine manufacturer. If there are issues of instability, these will be addressed either via the footing design or by moving the individual turbines on the site.*

I trust that this responds to the information request. If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,  
**AMEC Earth & Environmental,**  
**a division of AMEC Americas Limited**

A handwritten signature in black ink, appearing to read "Peter Rostern".

Peter Rostern, P.Eng.  
Principal Environmental Engineer