



DAVID EVANS  
AND ASSOCIATES INC.

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## MEMORANDUM

DATE: May 2008  
TO: Kelly O'Brien, BP Alternative Energy  
FROM: Dana Siegfried  
SUBJECT: **Addendum to Exhibit W**  
PROJECT: Golden Hills Wind Farm  
PROJECT NO: BPOC0000-0005  
COPIES: file

Golden Hills Wind Farm LLC (Applicant) has indicated that they will accept the \$13,685,000 retirement costs calculated by ODOE and/or their consultant, provided that Applicant will only post security in proportion to extent of the facility that actually is built. The applicant provides the following information in response to questions posed in a letter from the ODOE dated October 8, 2007. The excerpted requested additional information items from ODOE are italicized, and BPAE's responses to each request are below.

*Exhibit B, page B-1. Provide a table describing all possible turbine types that may be installed at the proposed facility, including the following specifications:*

- *Manufacturer*
- *Model*
- *Peak generating capacity (MW)*
- *Hub height (meters)*
- *Rotor diameter (meters)*
- *Guaranteed maximum sound power Level (dBA)*
- *Sound power level uncertainty band*
- *Weight of metals in tower (US tons)*
- *Weight of metals in nacelle (US tons)*

	<b>Option 1</b>	<b>Option 2</b>
Manufacturer	GE	Clipper
Model	sle 1.5	C-96
Peak Generating Capacity (MW)	1.5	2.5
Hub Height (meters)	80	80
Rotor diameter (meters)	77	96
Guaranteed maximum sound level (dBA)	106	107
Sound power level uncertainty band (dBA)	+/- 2	+/- 2
Weight of metals in tower (US tons)	138.1	208.5
Weight of metals in nacelle (US tons)	117.9	113.5

***Exhibit B, page B-2.*** For each possible turbine type, describe the configuration of the turbine foundation and the amount of concrete in the turbine foundation above ground level and to a depth of 3 feet below ground level.

For both the GE and Clipper turbines the proposed foundations are a spread footing “inverted T” gravity foundation similar to the foundations on projects in the area. The proposed Clipper foundation will have 4.7 cubic yards of concrete above ground and 28.3 cubic yards of concrete to a depth 3 feet below ground level. The proposed GE foundation will have 4.5 cubic yards of concrete above ground and 26.7 cubic yards of concrete to a depth 3 feet below ground level.

***Exhibit B, page B-2.*** Describe the configuration of the transformer foundations and the amount of concrete in the transformer foundations above ground level and to a depth of 3 feet below ground level.

The proposed Clipper pad mounted transformer foundation will have 2.8 cubic yards of concrete above ground and 14.6 cubic yards of concrete to a depth 3 feet below ground level. The proposed GE pad mounted transformer foundation will have 1.4 cubic yards of concrete above ground and 7.3 cubic yards of concrete to a depth 3 feet below ground level. The reason for the relatively large quantity discrepancy between the two foundations is due to the fact that the Clipper turbine will have additional equipment next the pad mounted transformer that sits on the same foundation.

***Exhibit B, page B-3.*** Describe the distance from the transformer to the base of the turbine tower.

In the proposed Clipper configuration of the pad mounted transformer there is a distance of approximately 3 feet to the edge of the tower foundation. In the proposed GE configuration of the pad mounted transformer there is a distance of approximately 5 feet to the edge of the tower foundation.

***Exhibit B, page B-3.*** Describe the size and total number of turnaround areas that would be constructed at the ends of turbine strings.

Any turnarounds that are constructed would be for temporary use during construction and would be removed at the end of construction. It is expected that there could be 20 turnaround areas required for the build out of the entire project as permitted. Each turnaround area would cover an area of roughly 0.4 acres.

***Exhibit B, page B-3.*** Describe the configuration of the meteorological tower foundations and the amount of concrete in the foundations above ground level and to a depth of 3 feet below ground level.

The foundations for the permanent meteorological foundations will be comprised of four 3 foot diameter sonotubes. For each met tower there will be a total of 0.5 cubic yards of concrete above ground and a total of 3.1 cubic yards of concrete to a depth of 3 feet below ground level (the total refers to the sum of the concrete in all four sonotubes).

***Exhibit B, page B-4.*** Describe the maximum distance over which the 34.5-kV power collection system would be installed above ground.

At this time the proposed facility does not plan to make use of above ground 34.5-kV power collection systems.

***Exhibit B, pages B-3 and B-4.*** Describe the total number of wires and SCADA fiber optic cables that would be installed on the aboveground segments of the 34.5-kV power collection system.

As mentioned above, at this time the proposed facility does not plan to make use of above ground 34.5-kV power collection systems.

***Exhibit B, pages B-3 and B-4.*** Describe the total number of junction boxes that would be included in the collection system.

The proposed collection system layout (for the entire permit area) contains approximately 28 above ground junction boxes. The design is subject to the result of the geotechnical investigation (mainly the thermal resistivity values) and may therefore change slightly.

***Exhibit B, page B-4.*** Each of the two substations would occupy a 2-acre site. Describe how much of each site would be occupied by the substation and how the remainder would be surfaced. Would the sites be fenced?

Each substation will occupy 1 to 1.5 acres of fenced area. The area inside the fence will be graded and leveled and surfaced with gravel. The actual foundations within the substation will be less than a few hundred square feet.

***Exhibit B., page B-4.*** The O&M building would measure about 5,000 square feet and would be placed on a 5-acre site, a portion of which would be graveled to provide for employee, visitor and equipment parking. Describe how much of the site would be graveled and how the remainder of the 5-acre site would be surfaced. Would the site be fenced?

The O&M building will have a fence around the parking, laydown area, and the building itself. The proposed fenced area will be 250' by 350'. With the obvious exception of the building footprint, everything within the fence line will have a gravel surface. The remainder of the 5 acre site would not be permanently disturbed.

***Exhibit C, pages C-1 and C-2.*** Provide tables describing maximum permanent and temporary disturbance for the component parts of the proposed facility. For each component, describe the area affected by a single unit, the maximum number of units, and the total area affected by the maximum number of units.

For permanent disturbance, address the area affected by the following components:

- Turbine pads
- Turbine turnouts
- Substations
- O&M facility
- 34.5-kV power poles
- 230-kV and 500-kV power poles
- Meteorological towers

- *New access roads*
- *Access road turnarounds*
- *Expansion of existing roads*

*For temporary disturbance, address the area affected by the following components:*

- *Turbine pads (including associated temporary laydown areas)*
- *Turbine turnouts*
- *Substations*
- *O&M facility*
- *34.5-kV power poles*
- *230-kV and 500-kV power poles*
- *Underground trenching for 34.5-kV power collection system*
- *Meteorological towers*
- *New access roads*
- *Access road turnarounds*
- *Expansion of existing roads*
- *Temporary staging, storage and laydown areas*
- *Crane paths*

The temporary and permanent disturbance amounts included in the amended Exhibit I. Proposed restoration activities for these areas are described in the Mitigation Plan.