

**EXHIBIT W**

**FACILITY RETIREMENT AND SITE RESTORATION**

OAR 345-021-0010(1)(w)

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**ATTACHMENT**

W-1 Retirement Cost Estimate



**W.1 INTRODUCTION**

**OAR 345-021(1)(w)** *Information about site restoration, providing evidence to support a finding by the Council as required by OAR 345-022-0050(1). The Applicant shall include:*

**W.2 ESTIMATED USEFUL LIFE**

**OAR 345-021(1)(w)(A)** *The estimated useful life of the proposed facility.*

Response: The useful life of the proposed project is 25 to 30 years. At that time, the facility may be re-powered with newer generation equipment or retired.

**W.3 ACTIONS FOR SITE RESTORATION**

**OAR 345-021(1)(w)(B)** *Specific actions and tasks to restore the site to a useful, non-hazardous condition.*

Response: The Applicant will take the following measures to restore the site at retirement of the facility:

- Remove turbines, towers and blades, using cranes and other conventional equipment. Recyclable and reusable materials will be recycled and reused to the extent practical. Other materials will be disposed of in accordance with all applicable federal, state and local laws, in nearby landfills.
- Remove concrete foundations to a minimum of three feet below the ground level, and grade adjacent soils to cover, so that tilling and farming can resume. Concrete would be disposed at a landfill or buried on the property at least three feet below the ground level, with the landowners' permission.
- Remove roads, unless the farmer(s) desire to have the road remain on their property. Gravel would be removed by standard equipment and used for another project or disposed of in accordance with all federal, state and local laws. Areas beneath removed roads would be disked or tilled to restore compacted soils to farmable condition.
- Underground collector lines would be abandoned in place, at least three feet below the ground level.
- Remove transformers and other substation equipment and recycle or reuse these materials to the extent practical. Remove gravel for reuse in another project or dispose of at a local landfill. Areas beneath removed substations would be disked or tilled to restore compacted soils to farmable condition.
- The O&M building would be demolished using conventional equipment. Recyclable and reusable materials would be recycled and reused to the extent practical. Other materials will be landfilled in accordance with all federal, state

and local laws. Areas beneath the removed O&M facilities would be disked or tilled to restore compacted soils to farmable condition.

- Overhead transmission lines may be transferred to another entity for power transmission.

#### **W.4 ESTIMATED COSTS OF SITE RESTORATION**

**OAR 345-021(1)(w)(C)** *An estimate, in current dollars, of the total and unit costs of restoring the site to a useful, non-hazardous condition.*

Response: An estimate of the total and unit costs of the restoring the site to a useful, non-hazardous condition is included as Attachment W-1.

#### **W.5 METHODS AND ASSUMPTIONS TO ESTIMATE SITE RESTORATION COSTS**

**OAR 345-021(1)(w)(D)** *A discussion and justification of the methods and assumptions used to estimate site restoration costs.*

Response: To prepare the estimate for the decommissioning costs of the Project, the Applicant largely used a decommissioning cost model worksheet previously submitted under the EFSC process (the only addition was a line for the cost of removing of the 500kV transmission line). Unit costs used in this cost model worksheet were compared to decommissioning estimates BPAE has received for another project and discussed with contractors to ensure validity. The values appropriate for the Project were then put into the model.

BPAE is able to compare decommissioning costs against a current BPAE re-power project in southern California. As a part of this California project BPAE explored multiple decommissioning options, proposals and estimates. Based on knowledge gained through this California project, BPAE is confident that the amount included in Attachment W-1 will be sufficient for the decommissioning of a 400 MW wind facility.

Exhibit M provides a discussion of the security the Applicant proposes to cover this amount.

#### **W.6 MONITORING PLAN**

**OAR 345-021(1)(w)(E)** *For facilities that might produce site contamination by hazardous materials, a proposed monitoring plan, such as periodic environmental site assessment and reporting, or an explanation why a monitoring plan is unnecessary.*

Response: Wind power generating facilities typically do not use large quantities of hazardous materials. A Spill Prevention, Control and Countermeasures (SPCC) Plan will be in place for the appropriate storage and use of any hazardous materials. Spills, if

any, will be immediately cleaned up in accordance with state and federal laws. If spills do occur, monitoring in accordance with the SPCC Plan with appropriate agency oversight.



**ATTACHMENT W-1**  
**Retirement Cost Estimate**



<b>Cost Estimate for Site Restoration</b>	<b>(Cost Guide, 6/6/07)</b>		
	<b>Quantity</b>	<b>Unit Cost</b>	<b>Extension</b>
<b>Turbines</b>			
Disconnect electrical and ready for disassembly (per turbine)	160	\$1,001	\$160,160
Remove turbine blades, hubs and nacelles (per turbine)	160	\$5,206	\$832,960
Remove turbine towers (per net ton of steel)	33600	\$67	\$2,251,200
Remove and load pad transformers (per turbine)	160	\$2,249	\$359,840
Foundation and transformer pad removal (per cubic yard)	5920	\$32	\$189,440
Restore turbines pads and turnouts (per turbine)	160	\$1,297	\$207,520
<b>Met Towers</b>			
Dismantle and dispose of met towers (per tower)	4	\$9,635	\$38,540
<b>Substation and O&amp;M Building</b>			
Dismantle and dispose of substation	2	\$133,585	\$267,170
Dismantle and dispose of O&M Building	1	\$58,936	\$58,936
<b>Transmission Line</b>			
Removal of 230 kV transmission line (per mile)	5	\$16,031	\$80,155
Removal of 500 kV transmission line (per mile)	11	\$18,500	\$203,500
Removal of 34.5 kV aboveground transmission line (per mile)	0	\$3,389	\$0
Junction boxes - remove electrical to 4' below grade (each)	9	\$1,321	\$11,889
<b>Access Roads</b>			
Road removal, grading and seeding (per mile)	35.7	\$74,474	\$2,658,722
<b>Temporary Areas</b>			
Regrading and reseeding area disturbed during restoration work (per acre)	175	\$2,775	\$485,625
<b>Gross Cost Estimate</b>			<b>\$7,805,657</b>
Performance Bond		1%	\$78,057
Administration and Project Management		10%	\$780,566
Future Developments Contingency		10%	\$780,566
Subtotal			\$9,444,845
<b>Total (full cost)</b>			<b>\$9,444,845</b>
<b>Total financial assurance amount (rounded to nearest \$1,000)</b>			<b>\$9,445,000</b>
<i>scrap value</i>	33600	\$149	\$5,006,400
<i>Total (less scrap value)</i>			\$4,438,445
<b>Total (less scrap value) rounded to nearest \$1,000</b>			<b>\$4,438,000</b>