

# **Exhibit W**

## **Facility Retirement and Site Restoration**

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**Nolin Hills Wind Power Project  
February 2020**



**d/b/a Nolin Hills Wind, LLC**

**Prepared by**



**Tetra Tech, Inc.**

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**Acronyms and Abbreviations**

Applicant	Nolin Hills Wind, LLC
EFSC or Council	Energy Facility Siting Council
met tower	meteorological data collection tower
MW	megawatt
O&M	operation and maintenance
OAR	Oregon Administrative Rule
ODOE	Oregon Department of Energy
Project	Nolin Hills Wind Power Project

## 1.0 Introduction

Nolin Hills Wind, LLC (the Applicant) proposes to construct the Nolin Hills Wind Power Project (Project), a wind energy project with a nominal generating capacity of approximately 350 megawatts (MW) and up to 117 average MW of energy, in Umatilla County, Oregon. The Project comprises up to 116 wind turbine generators, depending on the turbine model selected and the final layout determined during the micrositing process. If larger turbines are selected, fewer turbines will be installed. The Project will interconnect to the regional grid via either a transmission line leading from the northern Project substation northwest to Cottonwood Substation in Hermiston, or a new 230-kilovolt transmission line to the proposed Bonneville Power Administration Stanfield Substation, north of the town of Nolin. Other Project components include electrical collection lines, substations, site access roads, one operations and maintenance (O&M) building, meteorological data collection towers (met towers), and temporary construction yards. These facilities are all described in greater detail in Exhibit B.

## 2.0 Applicable Rules and Standards

Exhibit W contains information pertaining to site restoration. This exhibit was prepared pursuant to the Retirement and Financial Assurance standard in Oregon Administrative Rules (OAR) 345-022-0050 and the submittal requirements in OAR 345-021-0010(1)(w) paragraphs (A) through (E). This exhibit demonstrates that the Project can comply with the approval standard in OAR 345-022-0050:

### ***OAR 345-022-0050 Retirement and Financial Assurance***

*To issue a site certificate, the Council must find that:*

*(1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.*

*(2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition.*

## 3.0 Estimated Useful Life of the Project – OAR 345-021-0010(1)(w)(A)

*OAR 345-021-0010(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 must include:*

*OAR 345-021-0010(1)(w)(A) The estimated useful life of the proposed facility;*

For financial and engineering purposes, the Project is estimated to have a useful life of at least 30 years. The Project may be repowered or upgraded during or after that period to extend its lifespan. In the case of a facility upgrade, the Applicant would follow the Energy Facility Siting Council's (EFSC or Council) rules for amending the site certificate as defined in OAR Chapter 345, Division 27.

## **4.0 Actions to Restore the Site – OAR 345-021-0010(1)(w)(B)**

*OAR 345-021-0010(1)(w)(B) Specific actions and tasks to restore the site to a useful, non-hazardous condition;*

Prior to decommissioning the Project, the Applicant will obtain the necessary authorization from the appropriate regulatory agencies and landowners. Decommissioning will consist of the following steps:

- Dismantle turbines, towers, met tower, and pad transformers; remove and sell for use or scrap where possible.
- Dismantle the O&M Building and substations.
- Dismantle aboveground electrical equipment (collector lines and poles, transmission lines).
- Remove concrete turbine and met tower foundations to a minimum of 3 feet below grade.
- Remove and reclaim Project roads or leave in place if preferred by landowner.
- Restore surface soils to original condition or as agreed with landowner.

Reclamation procedures will be based on site-specific requirements and techniques commonly employed at the time the area is to be reclaimed. Procedures will likely include regrading to restore soil and original contours and revegetating disturbed areas with native plant seed mixes or agricultural crops, as appropriate, based on the use of surrounding lands.

## **5.0 Total Costs, Estimating Methods, and Assumptions – OAR 345-021-0010(1)(w)(C) and (D)**

*OAR 345-021-0010(1)(w)(C) An estimate, in current dollars, of the total and unit costs of restoring the site to a useful, non-hazardous condition;*

A detailed estimate of the costs to retire the Project under either Turbine Option 1 or Turbine Option 2 is provided in Attachment W-1. The Applicant requests that the Council reconsider its position concerning scrap and salvage values as an offset to retirement costs. The Council previously considered scrap and salvage value at a time when the market for recycling these materials was not mature. That is no longer the case, and it is unlikely that the market value of recycled scrap materials will diminish. Without consideration of scrap value, this estimate ranges from \$14.7 million to \$16.0 million dollars. Attachment W-2 provides an estimate of retirement cost

with consideration of scrap value. Including scrap value, the Applicant estimates the net cost of retiring the Project and restoring the site to range from \$8.46 million to \$8.95 million dollars. The Applicant's dollar estimate was based on comparing the net cost of retiring a facility ranging in size from 116 General Electric 3.03-MW turbines to 58 Siemens-Gamesa 6.0-MW turbines. Table W-1 summarizes the estimated retirement costs for each option.

**Table W-1. Summary of Retirement Costs**

<b>Scenario</b>	<b>Turbine Option 1 (General Electric 3.03 MW)</b>	<b>Turbine Option 2 (Siemens-Gamesa 6.0 MW)</b>
Decommissioning Cost Estimate without Scrap Credit	\$16,023,553.74	\$14,702,789.14
Scrap Credit Estimate	\$7,564,968.00	\$5,756,832.00
<b>Adjusted Total</b>	<b>\$8,458,585.74</b>	<b>\$8,945,957.14</b>

*OAR 345-021-0010(1)(w)(D) A discussion and justification of the methods and assumptions used to estimate site restoration costs; and*

The Applicant's cost estimate is based on a worst-case scenario of decommissioning 58 Siemens-Gamesa 6-MW turbines and related or supporting facilities. Decommissioning the smaller but more abundant GE 3.03-MW turbines would cost slightly less than decommissioning the larger Siemens-Gamesa 6.0-MW turbines, as shown in Table W-1. The cost estimate includes removal of turbines, towers, pad transformers, meteorological towers, collector substations, O&M Building, and aboveground collector and transmission lines; excavation of foundations and underground collector lines down to a depth of 3 feet; and return of soils to preconstruction grade, including the removal and restoration of roadways for the Project. The Applicant made the following assumptions as part of estimating site restoration costs:

- Labor costs are based on U.S. Department of Labor wage determinations and rates published by RS Means. Rates include base wage, fringe, and payroll tax liability, as well as an estimated 10 hours per week at overtime rates.
- Equipment rates are based on RS Means and historical vendor quotes and include fuel and maintenance. Rental equipment, which is typically more expensive than contractor-owned equipment, is assumed.
- Mobilization and demobilization costs were estimated to reflect the cost of equipment and crew mobilization. Temporary facilities will be placed on site to include office trailer, storage units, portotolets, first aid supplies, and utilities.
- Restoration includes labor, equipment, and production rates required for each individual task.
- For purposes of estimating costs, it is assumed that roads will be decompacted and reseeded to match the surrounding area and in such a way that they are no longer usable as

a road. At the time of Project retirement, the landowner may elect to leave some roads in place, which would be a reduction to the estimated cost.

- Home Office, Project Management, Overhead, and Fee can vary significantly by contractor. This estimate includes average costs as a percentage of total cost and consists of 5 percent for Home Office and Project Management, and 13 percent for Overhead and Fee. Contractor Contingency in the amount of 3 percent of total cost also is included.
- Miscellaneous costs such as permits, engineering, signage, fencing, traffic control, utility disconnects, etc. are included as incidental costs.
- Scrap value in Attachment W-2 is calculated at a rate of \$216 per ton based on an analysis of low, high, and average scrap values from 2003 to present. These commodity unit rates will be updated annually over the course of the Project lifetime to account for changes in scrap value over time. To assure that the Oregon Department of Energy (ODOE) has the first interest in the scrap value over other creditors, the Applicant proposes to enter into a security agreement with ODOE granting ODOE a security interest in Project component salvage. This agreement will be a financing statement (Unified Commercial Code filing) that is filed with Umatilla County and Secretary of State. This filing will offer ODOE legal rights to the scrap value to fund the decommissioning should the certificate holder be unable to restore the Project. Because some financial partners may object to this term, the filing would contain a clause allowing it to be replaced with alternate decommissioning security for the full amount of decommissioning without salvage value.
- In the event that the Project owner is unable to implement and manage the decommissioning process, the Applicant understands that the ODOE would take on this role. An estimate of \$533,000 has been included to address ODOE's costs to manage potential legal processes related to Project decommissioning as well as oversight of contractor performance. This estimate is equivalent to two Full-Time Equivalent employees for a period of 16 months.

The Applicant's proposed cost estimate will be sufficient to fund the restoration of the Project to a useful, nonhazardous condition. Please see Exhibit M for information on the security the Applicant will provide to cover this amount.

## **6.0 Monitoring Plan – OAR 345-021-0010(1)(w)(E)**

*OAR 345-021-0010(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.*

A monitoring plan will not be necessary at this site because the Project will not produce site contamination by hazardous materials.



## 7.0 Conclusion

For the reasons set forth in this Exhibit, the Council may find that the site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition as described in OAR 345-022-0050. Please see Exhibit M for evidence that the Applicant has a reasonable likelihood of obtaining a bond or letter of credit in the amount estimated to be required to restore the site.

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## **Attachment W-1. Estimates of Project Retirement Cost without Scrap Credit**

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**Table W.1-1. Estimated Retirement Costs without Scrap Credit for Turbine Option 1 (58 Siemens-Gamesa 6.0 MW Turbines)**

From Cost Item: .		To Cost Item: .				
Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
	2 NOLIN HILLS WIND DECOMMISSIONING, 58 - 6 MW Turbines (WO/ Scrap Credit)					
2.1	ODOE Management Fee (Pass Through Cost)	1.00	Lump Sum	533,000.00	533,000.00	U.S. Dollar
2.2	Mob / Demob	1.00	Lump Sum	907,217.85	907,217.85	U.S. Dollar
2.2.1	Equipment Mob	1.00	Lump Sum	101,500.00	101,500.00	U.S. Dollar
2.2.2	Site Facilities	1.00	Lump Sum	2,200.00	2,200.00	U.S. Dollar
2.2.3	Crew Mob & Site Setup	3.00	Day	15,703.57	47,110.71	U.S. Dollar
2.2.4	Crew Demob & Site Cleanup	2.00	Day	15,703.57	31,407.14	U.S. Dollar
2.2.5	Mob-Erection Sub	1.00	Lump Sum	725,000.00	725,000.00	U.S. Dollar
2.3	Site Facilities	8.00	Month	2,155.00	17,240.00	U.S. Dollar
2.4	Field Management	32.00	Week	18,282.31	585,034.03	U.S. Dollar
2.5	Substation & Switchyard Removal	2.00	Each	168,836.05	337,672.10	U.S. Dollar
2.5.1	Fence Removal	2.00	Day	1,286.19	2,572.37	U.S. Dollar
2.5.2	Transformer & Switchyard Equip Removal	2.00	Each	129,881.96	259,763.93	U.S. Dollar
2.5.2.1	Oil Removal & Disposal	2.00	Each	104,732.79	209,465.58	U.S. Dollar
2.5.2.1.1	Oil Removal	2.00	Each	1,982.79	3,965.58	U.S. Dollar
2.5.2.1.2	Oil Disposal	50,000.00	Gallon	4.00	200,000.00	U.S. Dollar
2.5.2.1.3	Trucking - Per Load	4.00	Each	1,375.00	5,500.00	U.S. Dollar
2.5.2.2	Demo & Prepare For Shipment Offsite	300.00	Ton	102.66	30,798.35	U.S. Dollar
2.5.2.3	Scrap Trucking Cost	300.00	Ton	65.00	19,500.00	U.S. Dollar
2.5.3	Remove Control Building	2.00	Each	2,604.41	5,208.82	U.S. Dollar
2.5.3.1	Demo & Prepare For Shipment Offsite	20.00	Ton	195.44	3,908.82	U.S. Dollar
2.5.3.2	Scrap Trucking Cost	20.00	Ton	65.00	1,300.00	U.S. Dollar
2.5.4	UG Utility & Ground Removal	4.00	Day	1,286.19	5,144.74	U.S. Dollar
2.5.5	Remove Foundations To Subgrade	784.00	Cubic Yard	34.84	27,312.78	U.S. Dollar
2.5.5.1	Excavate / Remove Foundation - Various Depth	784.00	Cubic Yard	17.29	13,554.73	U.S. Dollar
2.5.5.2	Concrete Transport Offsite	784.00	Cubic Yard	17.55	13,758.06	U.S. Dollar
2.5.6	Misc. Material Disposal	2.00	Each	1,675.00	3,350.00	U.S. Dollar
2.5.6.1	Trucking - Per Load	2.00	Each	1,375.00	2,750.00	U.S. Dollar
2.5.6.2	Disposal Cost	20.00	Ton	30.00	600.00	U.S. Dollar
2.5.7	Restore Yard	2.00	Each	17,159.73	34,319.46	U.S. Dollar
2.5.7.1	Backfill / Regrade	4.00	Acre	1,624.15	6,496.62	U.S. Dollar
2.5.7.2	Vegetative Cover	2,000.00	Cubic Yard	12.38	24,762.84	U.S. Dollar
2.5.7.2.1	Topsoil, Delivered	1,000.00	Cubic Yard	10.00	10,000.00	U.S. Dollar
2.5.7.2.2	Placement	2,000.00	Cubic Yard	7.38	14,762.84	U.S. Dollar
2.5.7.3	Re-Seed With Native Vegetation	4.00	Acre	765.00	3,060.00	U.S. Dollar
2.6	Construct & Remove Temporary Crane Pads	58.00	Each	7,593.04	440,396.49	U.S. Dollar
2.6.1	Crane Pad 4" Stone 8" depth	5,800.00	Ton	34.90	202,403.64	U.S. Dollar
2.6.2	Crane Pad 2" Stone 6" depth	4,350.00	Ton	38.20	166,153.64	U.S. Dollar
2.6.3	Remove stone after erection	58.00	Each	1,238.61	71,839.21	U.S. Dollar
2.7	WTG Removal	58.00	Each	30,000.00	1,740,000.00	U.S. Dollar
2.7.1	Remove Top,Nacell, Rotor	58.00	Each	20,000.00	1,160,000.00	U.S. Dollar
2.7.2	Remove Base & Mid	58.00	Each	10,000.00	580,000.00	U.S. Dollar
2.8	WTG Sizing & Loadout	58.00	Each	47,915.32	2,779,088.82	U.S. Dollar
2.8.1	Oil Removal & Disposal	0.50	Each	290.13	145.07	U.S. Dollar
2.8.1.1	Oil Removal	0.50	Each	198.28	99.14	U.S. Dollar

**Table W.1-1. Estimated Retirement Costs without Scrap Credit for Turbine Option 1 (58 Siemens-Gamesa 6.0 MW Turbines)**

Code Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
2.8.1.2 Oil Disposal	10.00	Gallon	4.00	40.00	U.S. Dollar
2.8.1.3 Trucking - Per Load	0.00	Each	1,375.00	5.93	U.S. Dollar
2.8.2 Demo & Prepare For Shipment Offsite	25,114.00	Ton	32.49	815,933.75	U.S. Dollar
2.8.3 Blade T&D	3,480.00	Ton	95.00	330,600.00	U.S. Dollar
2.8.4 Scrap Trucking Cost	25,114.00	Ton	65.00	1,632,410.00	U.S. Dollar
2.9 WTG Foundation Removal	58.00	Each	60,058.84	3,483,412.64	U.S. Dollar
2.9.1 Remove Cylindrical Pedestal	11,600.00	Cubic Yard	45.91	532,500.63	U.S. Dollar
2.9.2 Remove Top 2' Of Octagonal Base	47,560.00	Cubic Yard	47.16	2,243,067.72	U.S. Dollar
2.9.3 Concrete Transport Offsite	59,160.00	Cubic Yard	11.96	707,844.29	U.S. Dollar
2.10 Pad Mount Transformer Removal	58.00	Each	2,306.12	133,755.09	U.S. Dollar
2.10.1 Oil Removal & Disposal	58.00	Each	1,381.33	80,116.86	U.S. Dollar
2.10.1.1 Oil Removal	58.00	Each	110.20	6,391.86	U.S. Dollar
2.10.1.2 Oil Disposal	17,400.00	Gallon	4.00	69,600.00	U.S. Dollar
2.10.1.3 Trucking - Per Load	3.00	Each	1,375.00	4,125.00	U.S. Dollar
2.10.2 Remove & Loadout Transformer	58.00	Each	109.96	6,377.64	U.S. Dollar
2.10.3 Scrap Trucking Cost	696.00	Ton	65.00	45,240.00	U.S. Dollar
2.10.4 Remove Foundations To Subgrade	58.00	Each	34.84	2,020.59	U.S. Dollar
2.10.4.1 Excavate / Remove Foundation - Various Depth	58.00	Cubic Yard	17.29	1,002.77	U.S. Dollar
2.10.4.2 Concrete Transport Offsite	58.00	Cubic Yard	17.55	1,017.82	U.S. Dollar
2.11 MET Tower Removal	2.00	Each	3,750.90	7,501.81	U.S. Dollar
2.11.1 Structure Demo	2.00	Each	2,503.99	5,007.97	U.S. Dollar
2.11.2 Remove Foundation	30.00	Cubic Yard	47.16	1,414.89	U.S. Dollar
2.11.3 Concrete Transport Offsite	30.00	Cubic Yard	11.96	358.95	U.S. Dollar
2.11.4 Scrap Trucking Cost	16.00	Ton	45.00	720.00	U.S. Dollar
2.12 Transmission Line Removal (OH, 34.5 KV)	1.00	Lump Sum	203,373.13	203,373.13	U.S. Dollar
2.12.1 Conductor Removal	15.60	Mile	7,592.69	118,445.94	U.S. Dollar
2.12.1.1 Cut / Lower Cable, Size & Loadout	15.60	Mile	6,682.69	104,249.94	U.S. Dollar
2.12.1.2 Scrap Trucking Cost	218.40	Ton	65.00	14,196.00	U.S. Dollar
2.12.2 Remove Wood Poles	360.00	Each	235.91	84,927.19	U.S. Dollar
2.12.2.1 Remove Wood Poles	360.00	Each	179.66	64,677.19	U.S. Dollar
2.12.2.2 Pole Trucking Cost	270.00	Ton	75.00	20,250.00	U.S. Dollar
2.13 Transmission Line Removal (OH, 230 KV)	1.00	Lump Sum	556,460.00	556,460.00	U.S. Dollar
2.13.1 Conductor Removal	32.00	Mile	7,592.69	242,966.02	U.S. Dollar
2.13.1.1 Cut / Lower Cable, Size & Loadout	32.00	Mile	6,682.69	213,846.02	U.S. Dollar
2.13.1.2 Scrap Trucking Cost	448.00	Ton	65.00	29,120.00	U.S. Dollar
2.13.2 Remove Wood Monopoles	343.00	Each	913.98	313,493.97	U.S. Dollar
2.13.2.1 Remove Wood Monopoles	343.00	Each	538.98	184,868.97	U.S. Dollar
2.13.2.2 Pole Trucking Cost	1,715.00	Ton	75.00	128,625.00	U.S. Dollar
2.14 O&M Building Removal	1.00	Lump Sum	21,164.02	21,164.02	U.S. Dollar
2.14.1 Structure Demo	40.00	Ton	250.40	10,015.94	U.S. Dollar
2.14.2 Remove Foundations To Subgrade	320.00	Cubic Yard	34.84	11,148.07	U.S. Dollar
2.14.2.1 Excavate / Remove Foundation - Various Depth	320.00	Cubic Yard	17.29	5,532.54	U.S. Dollar
2.14.2.2 Concrete Transport Offsite	320.00	Cubic Yard	17.55	5,615.53	U.S. Dollar
2.15 Private Access Road Removal (New Roads)	29.00	Mile	5,676.59	164,621.21	U.S. Dollar
2.16 Re-Seed With Native Vegetation - Roads & Areas Disturbed By Construction	1.00	Lump Sum	120,870.00	120,870.00	U.S. Dollar
2.16.1 Re-Seed Road Beds	42.00	Acre	765.00	32,130.00	U.S. Dollar

**Table W.1-1. Estimated Retirement Costs without Scrap Credit for Turbine Option 1 (58 Siemens-Gamesa 6.0 MW Turbines)**

<b>Code Description</b>	<b>Forecast (T/O) Quantity</b>	<b>Unit of Measure</b>	<b>Unit Cost</b>	<b>Total Cost (Forecast)</b>	<b>Currency</b>
2.16.2 Re-Seed Turbine Locations	116.00	Acre	765.00	88,740.00	U.S. Dollar
2.17 Home Office, Project Management (5% Of Cost)	1.00	Lump Sum	601,540.35	601,540.35	U.S. Dollar
2.18 Contractor Contingency (3% Of Cost)	1.00	Lump Sum	378,970.41	378,970.41	U.S. Dollar
2.19 Contractor OH & Fee (13% Of Cost)	1.00	Lump Sum	1,691,471.21	1,691,471.21	U.S. Dollar
<b>Total: NOLIN HILLS WIND DECOMMISSIONING, 58 - 6 MW Turbines (WO/ Scrap Credit)</b>				<b>14,702,789.14</b>	
<b>Grand Total:</b>				<b>14,702,789.14</b>	

**Table W.1-2. Estimated Project Retirement Costs without Scrap Credit for Turbine Option 2 (116 General Electric 3.03 MW Turbines)**

From Cost Item: .

To Cost Item: .

Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
1	NOLIN HILLS WIND DECOMMISSIONING, 116 - 3.03 MW Turbines (WO/ Scrap Credit)					
1.1	ODOE Management Fee (Pass Through Cost)	1.00	Lump Sum	533,000.00	533,000.00	U.S. Dollar
1.2	Mob / Demob	1.00	Lump Sum	907,217.85	907,217.85	U.S. Dollar
1.2.1	Equipment Mob	1.00	Lump Sum	101,500.00	101,500.00	U.S. Dollar
1.2.2	Site Facilities	1.00	Lump Sum	2,200.00	2,200.00	U.S. Dollar
1.2.3	Crew Mob & Site Setup	3.00	Day	15,703.57	47,110.71	U.S. Dollar
1.2.4	Crew Demob & Site Cleanup	2.00	Day	15,703.57	31,407.14	U.S. Dollar
1.2.5	Mob-Erection Sub	1.00	Lump Sum	725,000.00	725,000.00	U.S. Dollar
1.3	Site Facilities	8.00	Month	2,155.00	17,240.00	U.S. Dollar
1.4	Field Management	32.00	Week	18,282.31	585,034.03	U.S. Dollar
1.5	Substation & Switchyard Removal	2.00	Each	168,836.05	337,672.10	U.S. Dollar
1.5.1	Fence Removal	2.00	Day	1,286.19	2,572.37	U.S. Dollar
1.5.2	Transformer & Switchyard Equip Removal	2.00	Each	129,881.96	259,763.93	U.S. Dollar
1.5.2.1	Oil Removal & Disposal	2.00	Each	104,732.79	209,465.58	U.S. Dollar
1.5.2.1.1	Oil Removal	2.00	Each	1,982.79	3,965.58	U.S. Dollar
1.5.2.1.2	Oil Disposal	50,000.00	Gallon	4.00	200,000.00	U.S. Dollar
1.5.2.1.3	Trucking - Per Load	4.00	Each	1,375.00	5,500.00	U.S. Dollar
1.5.2.2	Demo & Prepare For Shipment Offsite	300.00	Ton	102.66	30,798.35	U.S. Dollar
1.5.2.3	Scrap Trucking Cost	300.00	Ton	65.00	19,500.00	U.S. Dollar
1.5.3	Remove Control Building	2.00	Each	2,604.41	5,208.82	U.S. Dollar
1.5.3.1	Demo & Prepare For Shipment Offsite	20.00	Ton	195.44	3,908.82	U.S. Dollar
1.5.3.2	Scrap Trucking Cost	20.00	Ton	65.00	1,300.00	U.S. Dollar
1.5.4	UG Utility & Ground Removal	4.00	Day	1,286.19	5,144.74	U.S. Dollar
1.5.5	Remove Foundations To Subgrade	784.00	Cubic Yard	34.84	27,312.78	U.S. Dollar
1.5.5.1	Excavate / Remove Foundation - Various Depth	784.00	Cubic Yard	17.29	13,554.73	U.S. Dollar
1.5.5.2	Concrete Transport Offsite	784.00	Cubic Yard	17.55	13,758.06	U.S. Dollar
1.5.6	Misc. Material Disposal	2.00	Each	1,675.00	3,350.00	U.S. Dollar
1.5.6.1	Trucking - Per Load	2.00	Each	1,375.00	2,750.00	U.S. Dollar
1.5.6.2	Disposal Cost	20.00	Ton	30.00	600.00	U.S. Dollar
1.5.7	Restore Yard	2.00	Each	17,159.73	34,319.46	U.S. Dollar
1.5.7.1	Backfill / Regrade	4.00	Acre	1,624.15	6,496.62	U.S. Dollar
1.5.7.2	Vegetative Cover	2,000.00	Cubic Yard	12.38	24,762.84	U.S. Dollar
1.5.7.2.1	Topsoil, Delivered	1,000.00	Cubic Yard	10.00	10,000.00	U.S. Dollar
1.5.7.2.2	Placement	2,000.00	Cubic Yard	7.38	14,762.84	U.S. Dollar
1.5.7.3	Re-Seed With Native Vegetation	4.00	Acre	765.00	3,060.00	U.S. Dollar
1.6	Construct & Remove Temporary Crane Pads	116.00	Each	7,593.04	880,792.99	U.S. Dollar
1.6.1	Crane Pad 4" Stone 8" depth	11,600.00	Ton	34.90	404,807.29	U.S. Dollar
1.6.2	Crane Pad 2" Stone 6" depth	8,700.00	Ton	38.20	332,307.29	U.S. Dollar
1.6.3	Remove stone after erection	116.00	Each	1,238.61	143,678.41	U.S. Dollar
1.7	WTG Removal	116.00	Each	30,000.00	3,480,000.00	U.S. Dollar
1.7.1	Remove Top,Nacell, Rotor	116.00	Each	20,000.00	2,320,000.00	U.S. Dollar
1.7.2	Remove Base & Mid	116.00	Each	10,000.00	1,160,000.00	U.S. Dollar
1.8	WTG Sizing & Loadout	116.00	Each	31,754.04	3,683,469.04	U.S. Dollar
1.8.1	Oil Removal & Disposal	116.00	Each	262.13	30,407.36	U.S. Dollar
1.8.1.1	Oil Removal	116.00	Each	198.28	23,000.36	U.S. Dollar



**Table W.1-2. Estimated Project Retirement Costs without Scrap Credit for Turbine Option 2 (116 General Electric 3.03 MW Turbines)**

Code Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
1.8.1.2 Oil Disposal	1,508.00	Gallon	4.00	6,032.00	U.S. Dollar
1.8.1.3 Trucking - Per Load	1.00	Each	1,375.00	1,375.00	U.S. Dollar
1.8.2 Demo & Prepare For Shipment Offsite	33,176.00	Ton	32.49	1,077,861.68	U.S. Dollar
1.8.3 Blade T&D	4,408.00	Ton	95.00	418,760.00	U.S. Dollar
1.8.4 Scrap Trucking Cost	33,176.00	Ton	65.00	2,156,440.00	U.S. Dollar
1.9 WTG Foundation Removal	116.00	Each	10,026.58	1,163,082.75	U.S. Dollar
1.9.1 Remove Cylindrical Pedestal	2,320.00	Cubic Yard	45.91	106,500.13	U.S. Dollar
1.9.2 Remove Top 2' Of Octagonal Base	17,400.00	Cubic Yard	47.16	820,634.53	U.S. Dollar
1.9.3 Concrete Transport Offsite	19,720.00	Cubic Yard	11.96	235,948.10	U.S. Dollar
1.10 Pad Mount Transformer Removal	116.00	Each	1,646.12	190,950.18	U.S. Dollar
1.10.1 Oil Removal & Disposal	116.00	Each	981.33	113,833.72	U.S. Dollar
1.10.1.1 Oil Removal	116.00	Each	110.20	12,783.72	U.S. Dollar
1.10.1.2 Oil Disposal	23,200.00	Gallon	4.00	92,800.00	U.S. Dollar
1.10.1.3 Trucking - Per Load	6.00	Each	1,375.00	8,250.00	U.S. Dollar
1.10.2 Remove & Loadout Transformer	116.00	Each	109.96	12,755.28	U.S. Dollar
1.10.3 Scrap Trucking Cost	928.00	Ton	65.00	60,320.00	U.S. Dollar
1.10.4 Remove Foundations To Subgrade	116.00	Each	34.84	4,041.18	U.S. Dollar
1.10.4.1 Excavate / Remove Foundation - Various Depth	116.00	Cubic Yard	17.29	2,005.55	U.S. Dollar
1.10.4.2 Concrete Transport Offsite	116.00	Cubic Yard	17.55	2,035.63	U.S. Dollar
1.11 MET Tower Removal	3.00	Each	3,750.90	11,252.71	U.S. Dollar
1.11.1 Structure Demo	3.00	Each	2,503.99	7,511.96	U.S. Dollar
1.11.2 Remove Foundation	45.00	Cubic Yard	47.16	2,122.33	U.S. Dollar
1.11.3 Concrete Transport Offsite	45.00	Cubic Yard	11.96	538.42	U.S. Dollar
1.11.4 Scrap Trucking Cost	24.00	Ton	45.00	1,080.00	U.S. Dollar
1.12 Transmission Line Removal (OH, 34.5 KV)	1.00	Lump Sum	118,634.33	118,634.33	U.S. Dollar
1.12.1 Conductor Removal	9.10	Mile	7,592.69	69,093.46	U.S. Dollar
1.12.1.1 Cut / Lower Cable, Size & Loadout	9.10	Mile	6,682.69	60,812.46	U.S. Dollar
1.12.1.2 Scrap Trucking Cost	127.40	Ton	65.00	8,281.00	U.S. Dollar
1.12.2 Remove Wood Poles	210.00	Each	235.91	49,540.86	U.S. Dollar
1.12.2.1 Remove Wood Poles	210.00	Each	179.66	37,728.36	U.S. Dollar
1.12.2.2 Pole Trucking Cost	157.50	Ton	75.00	11,812.50	U.S. Dollar
1.13 Transmission Line Removal (OH, 230 KV)	1.00	Lump Sum	556,460.00	556,460.00	U.S. Dollar
1.13.1 Conductor Removal	32.00	Mile	7,592.69	242,966.02	U.S. Dollar
1.13.1.1 Cut / Lower Cable, Size & Loadout	32.00	Mile	6,682.69	213,846.02	U.S. Dollar
1.13.1.2 Scrap Trucking Cost	448.00	Ton	65.00	29,120.00	U.S. Dollar
1.13.2 Remove Wood Monopoles	343.00	Each	913.98	313,493.97	U.S. Dollar
1.13.2.1 Remove Wood Monopoles	343.00	Each	538.98	184,868.97	U.S. Dollar
1.13.2.2 Pole Trucking Cost	1,715.00	Ton	75.00	128,625.00	U.S. Dollar
1.14 O&M Building Removal	1.00	Lump Sum	21,164.02	21,164.02	U.S. Dollar
1.14.1 Structure Demo	40.00	Ton	250.40	10,015.94	U.S. Dollar
1.14.2 Remove Foundations To Subgrade	320.00	Cubic Yard	34.84	11,148.07	U.S. Dollar
1.14.2.1 Excavate / Remove Foundation - Various Depth	320.00	Cubic Yard	17.29	5,532.54	U.S. Dollar
1.14.2.2 Concrete Transport Offsite	320.00	Cubic Yard	17.55	5,615.53	U.S. Dollar
1.15 Private Access Road Removal (New Roads)	66.00	Mile	5,676.59	374,655.17	U.S. Dollar
1.16 Re-Seed With Native Vegetation - Roads & Areas Disturbed By Construction	1.00	Lump Sum	250,920.00	250,920.00	U.S. Dollar
1.16.1 Re-Seed Road Beds	96.00	Acre	765.00	73,440.00	U.S. Dollar

**Table W.1-2. Estimated Project Retirement Costs without Scrap Credit for Turbine Option 2 (116 General Electric 3.03 MW Turbines)**

Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
1.16.2	Re-Seed Turbine Locations	232.00	Acre	765.00	177,480.00	U.S. Dollar
1.17	Home Office, Project Management (5% Of Cost)	1.00	Lump Sum	655,577.25	655,577.25	U.S. Dollar
1.18	Contractor Contingency (3% Of Cost)	1.00	Lump Sum	413,013.66	413,013.66	U.S. Dollar
1.19	Contractor OH & Fee (13% Of Cost)	1.00	Lump Sum	1,843,417.68	1,843,417.68	U.S. Dollar
<b>Total: NOLIN HILLS WIND DECOMMISSIONING, 116 - 3.03 MW Turbines (WO/ Scrap Credit)</b>					<b>16,023,553.74</b>	
<b>Grand Total:</b>					<b>16,023,553.74</b>	

## **Attachment W-2. Estimate of Project Retirement Costs with Scrap Credit**

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**Table W.2-1. Estimated Project Retirement Costs with Scrap Credit for Turbine Option 1 (58 Siemens-Gamesa 6.0 MW Turbines)**

From Cost Item: .		To Cost Item: .				
Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
4	NOLIN HILLS WIND DECOMMISSIONING, 58 - 6 MW Turbines (W/ Scrap Credit					
4.1	ODOE Management Fee (Pass Through Cost)	1.00	Lump Sum	533,000.00	533,000.00	U.S. Dollar
4.2	Mob / Demob	1.00	Lump Sum	907,217.85	907,217.85	U.S. Dollar
4.2.1	Equipment Mob	1.00	Lump Sum	101,500.00	101,500.00	U.S. Dollar
4.2.2	Site Facilities	1.00	Lump Sum	2,200.00	2,200.00	U.S. Dollar
4.2.3	Crew Mob & Site Setup	3.00	Day	15,703.57	47,110.71	U.S. Dollar
4.2.4	Crew Demob & Site Cleanup	2.00	Day	15,703.57	31,407.14	U.S. Dollar
4.2.5	Mob-Erection Sub	1.00	Lump Sum	725,000.00	725,000.00	U.S. Dollar
4.3	Site Facilities	8.00	Month	2,155.00	17,240.00	U.S. Dollar
4.4	Field Management	32.00	Week	18,282.31	585,034.03	U.S. Dollar
4.5	Substation & Switchyard Removal	2.00	Each	168,836.05	337,672.10	U.S. Dollar
4.5.1	Fence Removal	2.00	Day	1,286.19	2,572.37	U.S. Dollar
4.5.2	Transformer & Switchyard Equip Removal	2.00	Each	129,881.96	259,763.93	U.S. Dollar
4.5.2.1	Oil Removal & Disposal	2.00	Each	104,732.79	209,465.58	U.S. Dollar
4.5.2.1.1	Oil Removal	2.00	Each	1,982.79	3,965.58	U.S. Dollar
4.5.2.1.2	Oil Disposal	50,000.00	Gallon	4.00	200,000.00	U.S. Dollar
4.5.2.1.3	Trucking - Per Load	4.00	Each	1,375.00	5,500.00	U.S. Dollar
4.5.2.2	Demo & Prepare For Shipment Offsite	300.00	Ton	102.66	30,798.35	U.S. Dollar
4.5.2.3	Scrap Trucking Cost	300.00	Ton	65.00	19,500.00	U.S. Dollar
4.5.3	Remove Control Building	2.00	Each	2,604.41	5,208.82	U.S. Dollar
4.5.3.1	Demo & Prepare For Shipment Offsite	20.00	Ton	195.44	3,908.82	U.S. Dollar
4.5.3.2	Scrap Trucking Cost	20.00	Ton	65.00	1,300.00	U.S. Dollar
4.5.4	UG Utility & Ground Removal	4.00	Day	1,286.19	5,144.74	U.S. Dollar
4.5.5	Remove Foundations To Subgrade	784.00	Cubic Yard	34.84	27,312.78	U.S. Dollar
4.5.5.1	Excavate / Remove Foundation - Various Depth	784.00	Cubic Yard	17.29	13,554.73	U.S. Dollar
4.5.5.2	Concrete Transport Offsite	784.00	Cubic Yard	17.55	13,758.06	U.S. Dollar
4.5.6	Misc. Material Disposal	2.00	Each	1,675.00	3,350.00	U.S. Dollar
4.5.6.1	Trucking - Per Load	2.00	Each	1,375.00	2,750.00	U.S. Dollar
4.5.6.2	Disposal Cost	20.00	Ton	30.00	600.00	U.S. Dollar
4.5.7	Restore Yard	2.00	Each	17,159.73	34,319.46	U.S. Dollar
4.5.7.1	Backfill / Regrade	4.00	Acre	1,624.15	6,496.62	U.S. Dollar
4.5.7.2	Vegetative Cover	2,000.00	Cubic Yard	12.38	24,762.84	U.S. Dollar
4.5.7.2.1	Topsoil, Delivered	1,000.00	Cubic Yard	10.00	10,000.00	U.S. Dollar
4.5.7.2.2	Placement	2,000.00	Cubic Yard	7.38	14,762.84	U.S. Dollar
4.5.7.3	Re-Seed With Native Vegetation	4.00	Acre	765.00	3,060.00	U.S. Dollar
4.6	Construct & Remove Temporary Crane Pads	58.00	Each	7,593.04	440,396.49	U.S. Dollar
4.6.1	Crane Pad 4" Stone 8" depth	5,800.00	Ton	34.90	202,403.64	U.S. Dollar
4.6.2	Crane Pad 2" Stone 6" depth	4,350.00	Ton	38.20	166,153.64	U.S. Dollar
4.6.3	Remove stone after erection	58.00	Each	1,238.61	71,839.21	U.S. Dollar
4.7	WTG Removal	58.00	Each	30,000.00	1,740,000.00	U.S. Dollar
4.7.1	Remove Top,Nacell, Rotor	58.00	Each	20,000.00	1,160,000.00	U.S. Dollar
4.7.2	Remove Base & Mid	58.00	Each	10,000.00	580,000.00	U.S. Dollar
4.8	WTG Sizing & Loadout	58.00	Each	47,915.32	2,779,088.82	U.S. Dollar
4.8.1	Oil Removal & Disposal	0.50	Each	290.13	145.07	U.S. Dollar
4.8.1.1	Oil Removal	0.50	Each	198.28	99.14	U.S. Dollar

**Table W.2-1. Estimated Project Retirement Costs with Scrap Credit for Turbine Option 1 (58 Siemens-Gamesa 6.0 MW Turbines)**

Code Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
4.8.1.2 Oil Disposal	10.00	Gallon	4.00	40.00	U.S. Dollar
4.8.1.3 Trucking - Per Load	0.00	Each	1,375.00	5.93	U.S. Dollar
4.8.2 Demo & Prepare For Shipment Offsite	25,114.00	Ton	32.49	815,933.75	U.S. Dollar
4.8.3 Blade T&D	3,480.00	Ton	95.00	330,600.00	U.S. Dollar
4.8.4 Scrap Trucking Cost	25,114.00	Ton	65.00	1,632,410.00	U.S. Dollar
4.9 WTG Foundation Removal	58.00	Each	60,058.84	3,483,412.64	U.S. Dollar
4.9.1 Remove Cylindrical Pedestal	11,600.00	Cubic Yard	45.91	532,500.63	U.S. Dollar
4.9.2 Remove Top 2' Of Octagonal Base	47,560.00	Cubic Yard	47.16	2,243,067.72	U.S. Dollar
4.9.3 Concrete Transport Offsite	59,160.00	Cubic Yard	11.96	707,844.29	U.S. Dollar
4.10 Pad Mount Transformer Removal	58.00	Each	2,306.12	133,755.09	U.S. Dollar
4.10.1 Oil Removal & Disposal	58.00	Each	1,381.33	80,116.86	U.S. Dollar
4.10.1.1 Oil Removal	58.00	Each	110.20	6,391.86	U.S. Dollar
4.10.1.2 Oil Disposal	17,400.00	Gallon	4.00	69,600.00	U.S. Dollar
4.10.1.3 Trucking - Per Load	3.00	Each	1,375.00	4,125.00	U.S. Dollar
4.10.2 Remove & Loadout Transformer	58.00	Each	109.96	6,377.64	U.S. Dollar
4.10.3 Scrap Trucking Cost	696.00	Ton	65.00	45,240.00	U.S. Dollar
4.10.4 Remove Foundations To Subgrade	58.00	Each	34.84	2,020.59	U.S. Dollar
4.10.4.1 Excavate / Remove Foundation - Various Depth	58.00	Cubic Yard	17.29	1,002.77	U.S. Dollar
4.10.4.2 Concrete Transport Offsite	58.00	Cubic Yard	17.55	1,017.82	U.S. Dollar
4.11 MET Tower Removal	2.00	Each	3,750.90	7,501.81	U.S. Dollar
4.11.1 Structure Demo	2.00	Each	2,503.99	5,007.97	U.S. Dollar
4.11.2 Remove Foundation	30.00	Cubic Yard	47.16	1,414.89	U.S. Dollar
4.11.3 Concrete Transport Offsite	30.00	Cubic Yard	11.96	358.95	U.S. Dollar
4.11.4 Scrap Trucking Cost	16.00	Ton	45.00	720.00	U.S. Dollar
4.12 Transmission Line Removal (OH, 34.5 KV)	1.00	Lump Sum	203,373.13	203,373.13	U.S. Dollar
4.12.1 Conductor Removal	15.60	Mile	7,592.69	118,445.94	U.S. Dollar
4.12.1.1 Cut / Lower Cable, Size & Loadout	15.60	Mile	6,682.69	104,249.94	U.S. Dollar
4.12.1.2 Scrap Trucking Cost	218.40	Ton	65.00	14,196.00	U.S. Dollar
4.12.2 Remove Wood Poles	360.00	Each	235.91	84,927.19	U.S. Dollar
4.12.2.1 Remove Wood Poles	360.00	Each	179.66	64,677.19	U.S. Dollar
4.12.2.2 Pole Trucking Cost	270.00	Ton	75.00	20,250.00	U.S. Dollar
4.13 Transmission Line Removal (OH, 230 KV)	1.00	Lump Sum	556,460.00	556,460.00	U.S. Dollar
4.13.1 Conductor Removal	32.00	Mile	7,592.69	242,966.02	U.S. Dollar
4.13.1.1 Cut / Lower Cable, Size & Loadout	32.00	Mile	6,682.69	213,846.02	U.S. Dollar
4.13.1.2 Scrap Trucking Cost	448.00	Ton	65.00	29,120.00	U.S. Dollar
4.13.2 Remove Wood Monopoles	343.00	Each	913.98	313,493.97	U.S. Dollar
4.13.2.1 Remove Wood Monopoles	343.00	Each	538.98	184,868.97	U.S. Dollar
4.13.2.2 Pole Trucking Cost	1,715.00	Ton	75.00	128,625.00	U.S. Dollar
4.14 O&M Building Removal	1.00	Lump Sum	21,164.02	21,164.02	U.S. Dollar
4.14.1 Structure Demo	40.00	Ton	250.40	10,015.94	U.S. Dollar
4.14.2 Remove Foundations To Subgrade	320.00	Cubic Yard	34.84	11,148.07	U.S. Dollar
4.14.2.1 Excavate / Remove Foundation - Various Depth	320.00	Cubic Yard	17.29	5,532.54	U.S. Dollar
4.14.2.2 Concrete Transport Offsite	320.00	Cubic Yard	17.55	5,615.53	U.S. Dollar
4.15 Private Access Road Removal (New Roads)	29.00	Mile	5,676.59	164,621.21	U.S. Dollar
4.16 Re-Seed With Native Vegetation - Roads & Areas Disturbed By Construction	1.00	Lump Sum	120,870.00	120,870.00	U.S. Dollar
4.16.1 Re-Seed Road Beds	42.00	Acre	765.00	32,130.00	U.S. Dollar

**Table W.2-1. Estimated Project Retirement Costs with Scrap Credit for Turbine Option 1 (58 Siemens-Gamesa 6.0 MW Turbines)**

Code Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
4.16.2 Re-Seed Turbine Locations	116.00	Acre	765.00	88,740.00	U.S. Dollar
4.17 Scrap Metals Credit	1.00	Lump Sum	(5,756,832.00)	(5,756,832.00)	U.S. Dollar
4.17.1 Scrap Metals Credit - Transformer & Switchyard	150.00	Ton	(216.00)	(32,400.00)	U.S. Dollar
4.17.2 Scrap Metals Credit - Control Building	10.00	Ton	(216.00)	(2,160.00)	U.S. Dollar
4.17.3 Scrap Metals Credit - WTG	25,114.00	Ton	(216.00)	(5,424,624.00)	U.S. Dollar
4.17.4 Scrap Metals Credit - Pad Mount Transformer	696.00	Ton	(216.00)	(150,336.00)	U.S. Dollar
4.17.5 Scrap Metals Credit - MET Tower	16.00	Ton	(216.00)	(3,456.00)	U.S. Dollar
4.17.6 Scrap Metals Credit - T Line	666.00	Ton	(216.00)	(143,856.00)	U.S. Dollar
4.18 Home Office, Project Management (5% Of Cost)	1.00	Lump Sum	601,540.35	601,540.35	U.S. Dollar
4.19 Contractor Contingency (3% Of Cost)	1.00	Lump Sum	378,970.41	378,970.41	U.S. Dollar
4.20 Contractor OH & Fee (13% Of Cost)	1.00	Lump Sum	1,691,471.21	1,691,471.21	U.S. Dollar
<b>Total: NOLIN HILLS WIND DECOMMISSIONING, 58 - 6 MW Turbines (W/ Scrap Credit</b>				<b>8,945,957.14</b>	
<b>Grand Total:</b>				<b>8,945,957.14</b>	

**Table W.2-2. Estimated Project Retirement Costs with Scrap Credit for Turbine Option 2 (116 General Electric 3.03 MW Turbines)**

From Cost Item: .

To Cost Item: .

Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
3 NOLIN HILLS WIND DECOMMISSIONING, 116 - 3.03 MW Turbines (W/ Scrap Credit)						
3.1	ODOE Management Fee (Pass Through Cost)	1.00	Lump Sum	533,000.00	533,000.00	U.S. Dollar
3.2	Mob / Demob	1.00	Lump Sum	907,217.85	907,217.85	U.S. Dollar
3.2.1	Equipment Mob	1.00	Lump Sum	101,500.00	101,500.00	U.S. Dollar
3.2.2	Site Facilities	1.00	Lump Sum	2,200.00	2,200.00	U.S. Dollar
3.2.3	Crew Mob & Site Setup	3.00	Day	15,703.57	47,110.71	U.S. Dollar
3.2.4	Crew Demob & Site Cleanup	2.00	Day	15,703.57	31,407.14	U.S. Dollar
3.2.5	Mob-Erection Sub	1.00	Lump Sum	725,000.00	725,000.00	U.S. Dollar
3.3	Site Facilities	8.00	Month	2,155.00	17,240.00	U.S. Dollar
3.4	Field Management	32.00	Week	18,282.31	585,034.03	U.S. Dollar
3.5	Substation & Switchyard Removal	2.00	Each	168,836.05	337,672.10	U.S. Dollar
3.5.1	Fence Removal	2.00	Day	1,286.19	2,572.37	U.S. Dollar
3.5.2	Transformer & Switchyard Equip Removal	2.00	Each	129,881.96	259,763.93	U.S. Dollar
3.5.2.1	Oil Removal & Disposal	2.00	Each	104,732.79	209,465.58	U.S. Dollar
3.5.2.1.1	Oil Removal	2.00	Each	1,982.79	3,965.58	U.S. Dollar
3.5.2.1.2	Oil Disposal	50,000.00	Gallon	4.00	200,000.00	U.S. Dollar
3.5.2.1.3	Trucking - Per Load	4.00	Each	1,375.00	5,500.00	U.S. Dollar
3.5.2.2	Demo & Prepare For Shipment Offsite	300.00	Ton	102.66	30,798.35	U.S. Dollar
3.5.2.3	Scrap Trucking Cost	300.00	Ton	65.00	19,500.00	U.S. Dollar
3.5.3	Remove Control Building	2.00	Each	2,604.41	5,208.82	U.S. Dollar
3.5.3.1	Demo & Prepare For Shipment Offsite	20.00	Ton	195.44	3,908.82	U.S. Dollar
3.5.3.2	Scrap Trucking Cost	20.00	Ton	65.00	1,300.00	U.S. Dollar
3.5.4	UG Utility & Ground Removal	4.00	Day	1,286.19	5,144.74	U.S. Dollar
3.5.5	Remove Foundations To Subgrade	784.00	Cubic Yard	34.84	27,312.78	U.S. Dollar
3.5.5.1	Excavate / Remove Foundation - Various Depth	784.00	Cubic Yard	17.29	13,554.73	U.S. Dollar
3.5.5.2	Concrete Transport Offsite	784.00	Cubic Yard	17.55	13,758.06	U.S. Dollar
3.5.6	Misc. Material Disposal	2.00	Each	1,675.00	3,350.00	U.S. Dollar
3.5.6.1	Trucking - Per Load	2.00	Each	1,375.00	2,750.00	U.S. Dollar
3.5.6.2	Disposal Cost	20.00	Ton	30.00	600.00	U.S. Dollar
3.5.7	Restore Yard	2.00	Each	17,159.73	34,319.46	U.S. Dollar
3.5.7.1	Backfill / Regrade	4.00	Acre	1,624.15	6,496.62	U.S. Dollar
3.5.7.2	Vegetative Cover	2,000.00	Cubic Yard	12.38	24,762.84	U.S. Dollar
3.5.7.2.1	Topsoil, Delivered	1,000.00	Cubic Yard	10.00	10,000.00	U.S. Dollar
3.5.7.2.2	Placement	2,000.00	Cubic Yard	7.38	14,762.84	U.S. Dollar
3.5.7.3	Re-Seed With Native Vegetation	4.00	Acre	765.00	3,060.00	U.S. Dollar
3.6	Construct & Remove Temporary Crane Pads	116.00	Each	7,593.04	880,792.99	U.S. Dollar
3.6.1	Crane Pad 4" Stone 8" depth	11,600.00	Ton	34.90	404,807.29	U.S. Dollar
3.6.2	Crane Pad 2" Stone 6" depth	8,700.00	Ton	38.20	332,307.29	U.S. Dollar
3.6.3	Remove stone after erection	116.00	Each	1,238.61	143,678.41	U.S. Dollar
3.7	WTG Removal	116.00	Each	30,000.00	3,480,000.00	U.S. Dollar
3.7.1	Remove Top,Nacell, Rotor	116.00	Each	20,000.00	2,320,000.00	U.S. Dollar
3.7.2	Remove Base & Mid	116.00	Each	10,000.00	1,160,000.00	U.S. Dollar
3.8	WTG Sizing & Loadout	116.00	Each	31,754.04	3,683,469.04	U.S. Dollar
3.8.1	Oil Removal & Disposal	116.00	Each	262.13	30,407.36	U.S. Dollar
3.8.1.1	Oil Removal	116.00	Each	198.28	23,000.36	U.S. Dollar



**Table W.2-2. Estimated Project Retirement Costs with Scrap Credit for Turbine Option 2 (116 General Electric 3.03 MW Turbines)**

Code Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
3.8.1.2 Oil Disposal	1,508.00	Gallon	4.00	6,032.00	U.S. Dollar
3.8.1.3 Trucking - Per Load	1.00	Each	1,375.00	1,375.00	U.S. Dollar
3.8.2 Demo & Prepare For Shipment Offsite	33,176.00	Ton	32.49	1,077,861.68	U.S. Dollar
3.8.3 Blade T&D	4,408.00	Ton	95.00	418,760.00	U.S. Dollar
3.8.4 Scrap Trucking Cost	33,176.00	Ton	65.00	2,156,440.00	U.S. Dollar
3.9 WTG Foundation Removal	116.00	Each	10,026.58	1,163,082.75	U.S. Dollar
3.9.1 Remove Cylindrical Pedestal	2,320.00	Cubic Yard	45.91	106,500.13	U.S. Dollar
3.9.2 Remove Top 2' Of Octagonal Base	17,400.00	Cubic Yard	47.16	820,634.53	U.S. Dollar
3.9.3 Concrete Transport Offsite	19,720.00	Cubic Yard	11.96	235,948.10	U.S. Dollar
3.10 Pad Mount Transformer Removal	116.00	Each	1,646.12	190,950.18	U.S. Dollar
3.10.1 Oil Removal & Disposal	116.00	Each	981.33	113,833.72	U.S. Dollar
3.10.1.1 Oil Removal	116.00	Each	110.20	12,783.72	U.S. Dollar
3.10.1.2 Oil Disposal	23,200.00	Gallon	4.00	92,800.00	U.S. Dollar
3.10.1.3 Trucking - Per Load	6.00	Each	1,375.00	8,250.00	U.S. Dollar
3.10.2 Remove & Loadout Transformer	116.00	Each	109.96	12,755.28	U.S. Dollar
3.10.3 Scrap Trucking Cost	928.00	Ton	65.00	60,320.00	U.S. Dollar
3.10.4 Remove Foundations To Subgrade	116.00	Each	34.84	4,041.18	U.S. Dollar
3.10.4.1 Excavate / Remove Foundation - Various Depth	116.00	Cubic Yard	17.29	2,005.55	U.S. Dollar
3.10.4.2 Concrete Transport Offsite	116.00	Cubic Yard	17.55	2,035.63	U.S. Dollar
3.11 MET Tower Removal	3.00	Each	3,750.90	11,252.71	U.S. Dollar
3.11.1 Structure Demo	3.00	Each	2,503.99	7,511.96	U.S. Dollar
3.11.2 Remove Foundation	45.00	Cubic Yard	47.16	2,122.33	U.S. Dollar
3.11.3 Concrete Transport Offsite	45.00	Cubic Yard	11.96	538.42	U.S. Dollar
3.11.4 Scrap Trucking Cost	24.00	Ton	45.00	1,080.00	U.S. Dollar
3.12 Transmission Line Removal (OH, 34.5 KV)	1.00	Lump Sum	118,634.33	118,634.33	U.S. Dollar
3.12.1 Conductor Removal	9.10	Mile	7,592.69	69,093.46	U.S. Dollar
3.12.1.1 Cut / Lower Cable, Size & Loadout	9.10	Mile	6,682.69	60,812.46	U.S. Dollar
3.12.1.2 Scrap Trucking Cost	127.40	Ton	65.00	8,281.00	U.S. Dollar
3.12.2 Remove Wood Poles	210.00	Each	235.91	49,540.86	U.S. Dollar
3.12.2.1 Remove Wood Poles	210.00	Each	179.66	37,728.36	U.S. Dollar
3.12.2.2 Pole Trucking Cost	157.50	Ton	75.00	11,812.50	U.S. Dollar
3.13 Transmission Line Removal (OH, 230 KV)	1.00	Lump Sum	556,460.00	556,460.00	U.S. Dollar
3.13.1 Conductor Removal	32.00	Mile	7,592.69	242,966.02	U.S. Dollar
3.13.1.1 Cut / Lower Cable, Size & Loadout	32.00	Mile	6,682.69	213,846.02	U.S. Dollar
3.13.1.2 Scrap Trucking Cost	448.00	Ton	65.00	29,120.00	U.S. Dollar
3.13.2 Remove Wood Monopoles	343.00	Each	913.98	313,493.97	U.S. Dollar
3.13.2.1 Remove Wood Monopoles	343.00	Each	538.98	184,868.97	U.S. Dollar
3.13.2.2 Pole Trucking Cost	1,715.00	Ton	75.00	128,625.00	U.S. Dollar
3.14 O&M Building Removal	1.00	Lump Sum	21,164.02	21,164.02	U.S. Dollar
3.14.1 Structure Demo	40.00	Ton	250.40	10,015.94	U.S. Dollar
3.14.2 Remove Foundations To Subgrade	320.00	Cubic Yard	34.84	11,148.07	U.S. Dollar
3.14.2.1 Excavate / Remove Foundation - Various Depth	320.00	Cubic Yard	17.29	5,532.54	U.S. Dollar
3.14.2.2 Concrete Transport Offsite	320.00	Cubic Yard	17.55	5,615.53	U.S. Dollar
3.15 Private Access Road Removal (New Roads)	66.00	Mile	5,676.59	374,655.17	U.S. Dollar
3.16 Re-Seed With Native Vegetation - Roads & Areas Disturbed By Construction	1.00	Lump Sum	250,920.00	250,920.00	U.S. Dollar
3.16.1 Re-Seed Road Beds	96.00	Acre	765.00	73,440.00	U.S. Dollar

**Table W.2-2. Estimated Project Retirement Costs with Scrap Credit for Turbine Option 2 (116 General Electric 3.03 MW Turbines)**

Code Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency
3.16.2 Re-Seed Turbine Locations	232.00	Acre	765.00	177,480.00	U.S. Dollar
3.17 Scrap Metals Credit	1.00	Lump Sum	(7,564,968.00)	(7,564,968.00)	U.S. Dollar
3.17.1 Scrap Metals Credit - Transformer & Switchyard	300.00	Ton	(216.00)	(64,800.00)	U.S. Dollar
3.17.2 Scrap Metals Credit - Control Building	20.00	Ton	(216.00)	(4,320.00)	U.S. Dollar
3.17.3 Scrap Metals Credit - WTG	33,176.00	Ton	(216.00)	(7,166,016.00)	U.S. Dollar
3.17.4 Scrap Metals Credit - Pad Mount Transformer	928.00	Ton	(216.00)	(200,448.00)	U.S. Dollar
3.17.5 Scrap Metals Credit - MET Tower	24.00	Ton	(216.00)	(5,184.00)	U.S. Dollar
3.17.6 Scrap Metals Credit - T Line	575.00	Ton	(216.00)	(124,200.00)	U.S. Dollar
3.18 Home Office, Project Management (5% Of Cost)	1.00	Lump Sum	655,577.25	655,577.25	U.S. Dollar
3.19 Contractor Contingency (3% Of Cost)	1.00	Lump Sum	413,013.66	413,013.66	U.S. Dollar
3.20 Contractor OH & Fee (13% Of Cost)	1.00	Lump Sum	1,843,417.68	1,843,417.68	U.S. Dollar
<b>Total: NOLIN HILLS WIND DECOMMISSIONING, 116 - 3.03 MW Turbines (W/ Scrap Credit)</b>				<b>8,458,585.74</b>	
<b>Grand Total:</b>				<b>8,458,585.74</b>	