Appendix E

Decommissioning Plan

Decommissioning Plan Philip Wind Energy Center Project, Haakon County, South Dakota



### Prepared for:

Philip Wind Partners, LLC One South Wacker Drive Suite 1800 Chicago, Illinois 60606

## Prepared by:

Stantec Consulting Services Inc. 1165 Scheuring Road De Pere, Wisconsin 54115

Project Number: 193709483

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Michael Gerhart, PE Civil Engineer

JoAnne Blank

Senior Associate, Senior Project Manager

like Genhaut

oanne & Blank

Matthew A Clementi, PE

**Senior Engineer** 



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### 1.0 INTRODUCTION

Philip Wind Partners, LLC (Philip Wind) is proposing to construct the Philip Wind Energy Center Project (the "Project") in Haakon County, South Dakota. The proposed number of wind turbines to be built and the total nameplate generating capacity will depend on the final turbine manufacturer and model chosen. The total nameplate capacity is approximately 333 megawatts (MW). Three potential wind turbine generator (WTG or turbine) models are under consideration for the Project and have been used to calculate the estimates in this document (only one of the three turbine models will be constructed):

- 74 Vestas 4.5 MW turbines (V163-4.5); 163-meter rotor diameter; 98-meter hub height.
- 87 General Electric (GE) 3.8 MW turbines (GE3.8-154); 154-meter rotor diameter; 98-meter hub height.
- 56 Nordex 5.9 MW turbines (N163-5.9); 163-meter rotor diameter; 108-meter hub height.

The Project is currently expecting to have a commercial operation date (COD) in late 2027. This Decommissioning Plan (Plan) provides a description of the facility removal and restoration phase of the Project, including a list of the primary wind farm components, and sequence of dismantling and removal activities. A summary of estimated costs and revenues associated with the decommissioning phase is also included.

#### 1.1 WIND FARM COMPONENTS

The main components of the proposed Project include:

- Turbines (tower, nacelle, step-up transformer, hub, rotor and three rotor blades per WTG)
- Turbine foundations
- Access roads
- Project substation
- Crane pads (to be installed and subsequently removed during decommissioning)
- Underground electrical collection system
- Aircraft detection lighting system (ADLS) towers
- Meteorological towers
- Operations and maintenance (O&M) structure

### 1.2 EXPECTED LIFETIME AND TRIGGERING EVENTS

Project decommissioning may be triggered by events such as the end of a power purchase agreement, expiration or termination of lease, or when the Project reaches the end of its operational life.

If properly maintained, the expected lifetime of a utility-scale wind turbine is approximately 30 years. Depending on market conditions and Project viability, the turbines may be retrofitted with updated components, such as nacelles, towers and/or blades to extend the life of the Project. In the event that the turbines are not retrofitted, or at the end of the Project's useful life, the turbines and associated components will be decommissioned and removed from the site.

Turbine components that have resale value may be sold in the wholesale market. Components with no wholesale value will be salvaged and sold as scrap for recycling or disposed of at an offsite licensed solid waste disposal facility (e.g., landfill). Decommissioning activities will include removal of the turbines and associated components as listed in Section 1.1 and described in Section 2.



#### 1.3 DECOMMISSIONING SEQUENCE

Decommissioning activities are anticipated to be completed within 18 months following the decision to decommission the Project. Monitoring and site restoration may extend beyond this time period to ensure successful revegetation and rehabilitation. The anticipated sequence of decommissioning and removal is described below; however, overlap of activities is expected.

- Reinforce access roads (e.g., turning radii) and prepare site (including installation of crane pads, as needed)
- De-energize turbines
- Dismantle and remove rotors, hubs, and nacelles
- · Remove towers and internal components including step-up transformers
- Remove ADLS and meteorological towers
- Remove junction boxes and collection system located less than four feet (48 inches) below the ground surface
- Remove portions of wind turbine foundations less than four feet (48 inches) below the ground surface and backfill sites with approved materials
- Remove crane pads installed for decommissioning and grade turbine sites
- Remove access roads (unless retained at discretion of host landowner)
- Remove substation
- Remove overhead generation tie-in transmission line
- Restore and revegetate disturbed land



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## 2.0 DECOMMISSIONING COMPONENTS AND ACTIVITIES

The wind farm components and decommissioning activities necessary to restore the Project area, as near as practicable, to pre-construction conditions are described within this section. Access roads may be left in place if requested and agreed to by the landowner. Concrete and other components of wind turbines and the underground electric collection system located 48 inches or more below the soil surface will be abandoned in place. Estimated quantities of materials to be removed and salvaged or disposed of are included in this section. Public roads damaged or modified during the decommissioning and reclamation process shall be repaired upon completion of the Project.

### 2.1 WIND FARM SYSTEM OVERVIEW

The Project will consist of 56, 74, or 87 turbines with a total nameplate generating capacity of approximately 333 MW, depending on the final turbine manufacturer and model chosen. This Plan assumes that either 74 turbines (V163-4.5), 87 turbines (GE3.8-154), or 56 turbines (N163-5.9) will be constructed; and are subsequently decommissioned. Table 1 presents a summary of the primary components included in the Plan.

**Table 1 Primary Components of Wind Farm at Decommissioning** 

Component <sup>1</sup>	Quantity (V163 4.5)	Quantity (GE3.8- 154)	Quantity (N163 5.9)	Unit of Measure
Wind Turbines (including 1 tower, 1 nacelle, 1 hub and 1 rotor with 3 blades, per turbine)	74 (222 blades)	87 (261 blades)	56 (168 blades)	Each
Step-up Transformers (ground-mounted for GE and Nordex; in nacelle for Vestas)	74	87	56	Each
Wind Turbine Foundations	74	87	56	Each
Crane Pads or Mats	74	87	56	Each
Underground Collection Cable (cabling greater than 48 inches in depth may be abandoned in place)	498,346	585,893	377,127	Linear Foot (estimated)
Junction Boxes	60	60	60	Each
Access Roads	177,779	209,010	134,535	Linear Foot (estimated)
ADLS Towers	3	3	3	Each
Meteorological Towers	3	3	3	Each
Substation (two transformers)	1	1	1	Each
Overhead Generation Tie-in Transmission Line	7	7	7	Miles

<sup>&</sup>lt;sup>1</sup> Only one of the three turbine models (V163-4.5, GE3.8-154, or N163-5.9) will be constructed.

#### 2.2 WIND TURBINE GENERATORS

The Vestas V163-4.5, General Electric GE 3.8-154, and Nordex N163-5.9 wind turbine generators are each primarily comprised of a modular steel tower, nacelle, and rotor with three rotor blades attached to a hub. The



maximum height (tip height at highest point), hub height and rotor diameters for each turbine model are shown in Table 2 below:

**Table 2 Turbine Model and Specifications** 

Turbine Model	Hub Height	Rotor Diameter	Combined Height (tip-height)
Vestas V163-4.5	98 meters (322 feet)	163 meters (535 feet)	180 meters (591 feet)
General Electric GE3.8-154	98 meters (322 feet)	154 meters (505 feet)	175 meters (574 feet)
Nordex N163-5.9	108 meters (354 feet)	163 meters (535 feet)	190 meters (622 feet)

The turbine components are modular in design, allowing for ease of construction, replacement, and disassembly during decommissioning. Turbine components in working condition may be refurbished and sold in a secondary market yielding greater revenue than selling as salvage material. For the purposes of this report, estimates will be based on the salvage value, as this will be the more conservative estimate of revenue.

**Turbine Tower –** The turbine towers are painted modular (three- to five-section) monopole structures, primarily made of structural steel. The overall weight of the towers for the V163-4.5 turbines is approximately 258.0 metric tons (tonnes); GE3.8-154 tower is approximately 186.7 tonnes; and the N163-5.9 is approximately 334.7 tonnes. Calculations have assumed that the towers will consist of approximately 80 percent salvageable steel. Tower pieces will be transported off-site for recycling; they may be cut into pieces on site for transport. This Decommissioning Plan assumes that towers for the turbines will be decommissioned, removed and salvaged.

**Nacelle –** The nacelle sits at the top of the turbine tower and has an overall weight of approximately 128.2 tonnes including the base plate for the V163-45; 94.3 tonnes for the GE3.8-154; and 139.9 tonnes for the N163-5.9. The salvage value in this report has been calculated assuming 80% salvageable steel along with other non-salvageable materials. Non-salvageable material within the nacelle will be disposed of in an approved landfill.

**Hub, Rotor, and Rotor Blades** – The hub and nose cone assembly (without blades) has an overall approximate weight of 37.9 tonnes for the V163-4.5; 40.9 tonnes for the GE3.8-154; and 54.5 tonnes for the N163-5.9. The rotor hub is mainly comprised of steel that will be salvaged along with the tower and nacelle. The salvage value has been based on an estimate of 90% salvageable steel per hub. The rotor blades are constructed of non-metallic materials such as fiberglass, carbon fibers and epoxies. These materials will likely have no salvage value: however, methods of utilizing the recycled blade components are emerging. If blades are unable to be recycled at the time of decommissioning, they will be properly disposed of in a licensed solid waste facility. Examples of emerging uses of the blade components include incorporating as a raw material in the cement manufacturing process and as a fuel source.

**Other Turbine Components** – In addition to the main components previously described, each WTG contains other items such as anchor bolts and internal electrical wiring that will have additional salvage value. The downtower cabling contains copper which will be 100% salvageable.

**Decommissioning Activity –** The wind turbines will be deactivated from the surrounding electrical system and made safe for disassembly. Improvements to access roads and crane pads will be completed to allow crane access to turbines for removal of components. Liquid wastes, including gear box oil and hydraulic fluids will be removed and properly disposed of or recycled according to regulations current at the time of decommissioning. Control cabinets, electronic components and internal electrical wiring will be removed and salvaged. The hub and rotors will be lowered to the ground for further disassembly. The nacelle and turbine sections will be removed in a manner determined as acceptable practice at the time of decommissioning. This may include



cutting at the base and felling the tower, or by disassembling and removing sections in the reverse order of assembly.

#### 2.3 STEP-UP TRANSFORMERS

The WTG step-up transformers are part of the turbine internal equipment (Vestas) or are pad-mounted at the base of the tower (GE and Nordex models). Transformers will be disassembled and removed. Depending on condition, the transformers may be sold for refurbishment and re-use. If not re-used, salvagers will pick up the transformer from the site. Transformer oil will be drained and recycled or disposed of in accordance with state and federal laws.

#### 2.4 WIND TURBINE FOUNDATIONS

The octagonal spread footing foundations utilized for the Project turbines will be predominantly located underground. A typical foundation design consists of a solid, reinforced circular concrete pedestal, approximately 5.5 feet high and 18.0 to 20.0 feet in diameter. Below the pedestal is the foundation base, a circular-shaped concrete structure approximately 74 feet across and 14.5 feet deep. The entire foundation sits on supporting sub-grade approximately 15.0 feet below the ground surface.

Concrete demolition will be completed on the portion of the pedestal less than 4.0 feet (48 inches) below the ground surface. This will include the anchor bolts, rebar, conduits, cables, and concrete to the required depth. The site will be backfilled with clean fill and graded to land contours as near as practicable to preconstruction conditions. Topsoil will be placed on the disturbed area and revegetated. Excavated materials will be hauled off-site for recycling or disposal, as required at the time of decommissioning. The cost estimate for the excavation and removal of turbine foundations is conservatively based on the previously described design parameters and assumes no resale or salvage value.

### 2.5 COLLECTION SYSTEM

The Project's electrical collection system will be located in cable trenches buried at a depth of 48 inches below the ground surface. The system voltage is 34.5 kV and will run from the individual turbine base or step-up transformers to the Project substation. The total length of the Project collection system cable is estimated at 498,346 linear feet (94.4 miles) for the V163-4.5 turbine layout; 595,893 linear feet (112.9 miles) for the GE3.8-154 turbine layout; and 377,127 (71.4 miles) for the N163-5.9 turbine layout.

The Project collection system will not interfere with farming activities because it will be placed 48 inches or more below the ground surface. Hence, complete cable removal is not required at decommissioning to restore the wind farm site to its former use. Cables 48 inches or more below the ground surface will be completely deactivated and abandoned in place. Junction boxes and collection cables located less than 48 inches below the surface will be removed. Due to the collection system installation depth, it is assumed to be abandoned at the time of decommissioning. If, at the time of decommissioning, the salvage value of the underground cable exceeds the cost of extraction and restoration, the cables may be removed and salvaged. A cost to remove the junction boxes is included in the decommissioning estimate.

#### 2.6 CRANE PADS

Crane pads will be constructed at the base of each turbine to support the cranes and turbine deconstruction activities. Pads are assumed to be approximately 40 feet by 60 feet long and consist of compacted native soils and aggregate base fill, or protective wooden mats. Crane pads will be recycled from turbine to turbine and



aggregate base, if used, will be re-used at multiple sites; therefore, only approximately 25 pads (V163-4.5), 29 pads (GE3.8-154), or 19 pads (N163-5.9) will require new materials. After decommissioning activities are completed the crane pad aggregate and protective matting will be removed and the areas filled with native soil, as necessary. Land will be graded, and pre-construction contours restored to the extent practicable. Restoration will likely be performed in conjunction with the turbine foundation and/or access road restoration. Soils compacted during de-construction activities will be de-compacted within cultivated areas, to restore the land to pre-construction land use.

#### 2.7 ACCESS ROADS

Access roads will be located at each turbine providing access from public roads to the turbine site. The final width of the roads is approximately 16 feet, widening near the turbine base. Wind turbine access roads are constructed to match the contours of the adjacent land. Typical construction of an access road includes preparation of the subgrade surface followed by the placement of 12 inches of aggregate material. The estimated length of access roads and quantity of aggregate for each turbine layout is provided in Table 3.

**Table 3 Typical Access Road Length and Aggregate** 

Turbine Layout	Length of Road (linear feet)	Aggregate (Cubic Yards)
V163-4.5	177,779	105,351
GE 3.8-154	209,010	123,858
N163-5.9	134,535	79,724

Access roads will be removed from the Project area unless written communication is received from the host landowner requesting that the road be retained. Decommissioning activities include the removal and transportation of aggregate materials to a site for salvage preparation. Local townships or farmers may accept the material prior to processing for use on local roads or trails; however, for the purpose of this estimate it is conservatively assumed that all materials will be removed from the Project area.

Following removal of aggregate, the access road areas will be graded, de-compacted (ripped to 18 inches), backfilled with native soils, as needed, and land contours restored to integrate with surrounding land.

#### 2.8 PROJECT SUBSTATION AND ABOVE GROUND TRANSMISSION LINE

The Project substation with an approximately eight-acre footprint will be removed unless an alternate use for the facility is obtained. The substation foundation, transformers, and fencing will be removed and sold, recycled, or properly disposed of according to regulations current at the time of decommissioning. Due to the expected lifetime of the substation and its components, there would likely be substantial resale value at the time of Project decommissioning. Although that resale value would be much higher than the estimated scrap value, this report assumes a conservative value of recycled revenue only. The substation site will be backfilled with native soils and graded to restore land contours as near as practicable to preconstruction conditions.

An approximately seven-mile-long dedicated overhead generation tie-in transmission line connects the Project substation to a larger utility owned switchyard. Unless an alternate use for the transmission line is determined, the line and structures will be removed, and the land restored to pre-construction conditions to the extent practicable.



# 2.9 OPERATIONS AND MAINTENANCE BUILDING, METEOROLOGICAL TOWERS, AND ADLS TOWERS

The Project will utilize an operation and maintenance (O&M) structure within the Project site. The O&M area will be approximately five acres in size. The building and property will likely be sold or reverted back to the landowner after wind energy production has ceased. The cost to remove the O&M building is therefore not included in this Plan.

Three meteorological towers will be erected to acquire wind data during operation of the Project. Three additional towers will be erected to support the system for aircraft detection. The meteorological and ADLS towers will be dismantled, removed, and salvaged or disposed of during decommissioning of the Project.

### 2.10 TOPSOIL RESTORATION AND REVEGETATION

Project areas that have been disturbed will be restored, in consultation with current landowners, to a condition which would support the pre-construction land use. Restoration and revegetation will be completed in consultation with landowners and will comply with the conditions required by Haakon County, local townships, or state regulations in effect at the time of decommissioning.

### 2.11 ROADWAY IMPACTS

During the life of the Project, local roads will be maintained to withstand heavy equipment and maintenance vehicles; however, the Plan includes additional costs of road repairs into this plan to accommodate road improvements and repairs necessary following decommissioning activities. Philip Wind is negotiating a Road Use Agreement with Haakon County and will comply with required road repairs during the decommissioning phase, as will be stated within the agreement.



## 3.0 DECOMMISSIONING COST ESTIMATE SUMMARY

Expenses and revenues associated with decommissioning the Project will be dependent on labor costs and market value of salvageable materials at the time of decommissioning. For the purposes of this report early 2025 market values were used to estimate both expenses and revenues. Fluctuation and inflation of the salvage values or labor costs were not factored into the estimates.

### 3.1 DECOMMISSIONING EXPENSES

Project decommissioning will incur costs associated with the disassembly, removal, excavation and restoration of the proposed wind turbine sites and support infrastructure as described in Section 2. Table 4 (V163-4.5), Table 5 (GE3.8-154), and Table 6 (N163-5.9) summarize the estimates for activities associated with the major components of the Project based on the three turbine models under consideration.

Table 4 Estimated Decommissioning Expenses – V163-4.5 74-Turbine Layout

Activity	Unit	Number	Cost per Unit	Total
Overhead and management (includes estimated permitting required)	Lump Sum	1	\$1,266,000	\$1,266,000
Mobilization and demobilization	Lump Sum	1	\$125,000	\$125,000
Turbine and step-up transformer disassembly and removal from site				
Crane set-up and disassembly of turbine			\$39,200	\$2,900,800
Deconstruction into salvageable pieces			\$16,800	\$1,243,200
Transport of materials to recycler	Each	74		
- Steel transport			\$18,701	\$1,383,874
- Copper transport			\$500 \$4.400	\$37,000
<ul> <li>Demolition, transport and disposal of rotors (3 blades) and nacelle cover</li> </ul>			\$4,100	\$303,400
Transformer (load only, refurbisher will haul)			\$1,600	\$118,400
Crane pad installation, excavation, and removal. Includes topsoil stockpile and re-spreading	Average Each	74	\$2,275	\$168,350
Wind turbine foundation - Concrete demolition and disposal for top 48 inches of pedestal; backfill and site grading	Each	74	\$23,215	\$1,717,910
Junction boxes	Each	60	\$275	\$16,500
ADLS towers	Each	3	\$21,700	\$65,100
Meteorological towers	Each	3	\$17,300	\$51,900
Access road excavation and removal	Lump Sum	1	\$316,050	\$316,050
Access road backfill, stabilization, and restoration	Lump Sum	1	\$1,553,050	\$1,553,050
Above ground generation tie-in transmission line	Mile	7	\$257,200	\$1,800,400
Substation removal and site grading	Lump Sum	1	\$495,000	\$495,000
Public road repairs	Lump Sum	1	\$368,000	\$368,000
Total Estimated Decommissioning Cost (Vestas V163	-4.5)			\$13,929,934



# Table 5 Estimated Decommissioning Expenses – GE3.8-154 87-Turbine Layout

Activity	Unit	Number	Cost per Unit	Total
Overhead and management (includes estimated permitting required)	Lump Sum	1	\$1,307,000	\$1,307,000
Mobilization and demobilization	Lump Sum	1	\$125,000	\$125,000
Turbine and step-up transformer disassembly and removal from site				
Crane set-up and disassembly of turbine			\$34,700	\$3,018,900
Deconstruction into salvageable pieces			\$14,800	\$1,287,600
Transport of materials to recycler	Each	87		
<ul> <li>Steel transport</li> </ul>	Lacii	01	\$13,889	\$1,208,343
<ul> <li>Copper transport</li> </ul>			\$500	\$43,500
Demolition, transport and disposal of rotors (3 blades) and nacelle cover			\$4,100	\$356,700
Transformer (load only, refurbisher will haul)			\$1,600	\$139,200
Crane pad installation, excavation, removal, and transportation including topsoil stockpile and respreading	Average Each	87	\$2,265	\$197,055
Wind turbine foundation - Concrete demolition and disposal for top 48 inches of pedestal; backfill and site grading	Each	87	\$19,510	\$1,697,370
Junction boxes	Each	60	\$275	\$16,500
ADLS towers	Each	3	\$21,700	\$65,100
Meteorological towers	Each	3	\$17,300	\$51,900
Access road excavation and removal	Lump Sum	1	\$371,550	\$371,550
Access road backfill, stabilization, and restoration	Lump Sum	1	\$1,825,850	\$1,825,850
Above ground generation tie-in transmission line removal	Mile	7	\$257,200	\$1,800,400
Substation removal and site grading	Lump Sum	1	\$495,000	\$495,000
Public road repairs	Lump Sum	1	\$380,000	\$380,000
Total Estimated Decommissioning Cost (General	Electric GE3.8-	154)		\$14,386,968



# Table 6 Estimated Decommissioning Expenses – N163-5.9 56-Turbine Layout

Activity	Unit	Number	Cost per Unit	Total
Overhead and management (includes estimated permitting required)	Lump Sum	1	\$1,174,000	\$1,174,000
Mobilization and demobilization	Lump Sum	1	\$125,000	\$125,000
Turbine and step-up transformer disassembly and removal from site  • Crane set-up and disassembly of turbine			\$55,000	\$3,080,000
Deconstruction into salvageable pieces			\$22,700	\$1,271,200
Transport of materials to recycler			, ,	, , , , , , , ,
<ul> <li>Steel transport</li> </ul>	Each	56	\$23,330	\$1,306,480
<ul> <li>Copper transport</li> </ul>			\$500	\$28,000
Demolition, transport and disposal of rotors (3 blades) and nacelle cover			\$4,100	\$229,600
Transformer (load only, refurbisher will haul)			\$1,600	\$89,600
Crane pad installation, excavation, removal, and transportation including topsoil stockpile and respreading	Average Each	56	\$2,280	\$127,680
Wind turbine foundation - Concrete demolition and disposal for top 48 inches of pedestal; backfill and site grading	Each	56	\$23,215	\$1,300,040
Junction boxes	Each	60	\$275	\$16,500
ADLS towers	Each	3	\$21,700	\$65,100
Meteorological towers	Each	3	\$17,300	\$51,900
Access road excavation and removal	Lump Sum	1	\$239,150	\$239,150
Access road backfill, stabilization, and restoration	Lump Sum	1	\$1,175,250	\$1,175,250
Above ground generation tie-in transmission line removal	Mile	7	\$257,200	\$1,800,400
Substation removal and site grading	Lump Sum	1	\$495,000	\$495,000
Public road repairs	Lump Sum	1	\$342,000	\$342,000
Total Estimated Decommissioning Cost (Nordex	N163-5.9)			\$12,916,900



#### 3.2 DECOMMISSIONING REVENUES

Revenue from decommissioning the Project will be realized through the sale of wind farm components and construction materials. Turbine components may be sold within a secondary market or as salvage. For purposes of this report, estimated recovery values were based on the salvage value, as this is the more conservative estimate of revenue.

The market value of both steel and copper fluctuates daily and has varied widely over the past five years. Salvage value estimates were based on an approximate five-year-average price of steel and copper derived from sources including on-line recycling companies and United States Geological Survey (USGS) commodity summaries. The price used to value the steel used in this report is \$275 per metric ton; the value of copper, \$3.50 per pound (\$6,127 per metric ton). The tower and nacelle are assumed to have 80 percent salvageable steel content. The hub is assumed to have 90 percent salvageable steel.

Tables 7 through 9 (V163-4.5, GE3.8-154, and N163-5.9, respectively) summarize the potential salvage value for the wind turbine components and construction materials based on the three turbine models under consideration.

Table 7 Estimated Decommissioning Revenues - V163-4.5

Item	Unit	Number	Salvage Price per Unit	Salvage Price per Turbine	Total (based on 74 turbines)
Vestas 98-meter Turbine Tower	Tonnes per tower	206.4	\$275	\$56,760	\$4,200,240
Nacelle (steel)	Tonnes per nacelle	102.6	\$275	\$28,215	\$2,087,910
Rotor Hub	Tonnes per hub	34.1	\$275	\$9,378	\$693,972
Anchor Bolts (steel)	Tonnes per turbine	2	\$275	\$550	\$40,700
Transformer	Per turbine	1	\$1,500	\$1,500	\$111,000
Copper	Tonnes per turbine	3.5	\$6,127	\$21,445	\$1,586,930
Substation Components (two transformers)	Each	1	\$75,000	-	\$75,000
Total Potential Revenue (Vo	\$8,795,752				

Table 8 Estimated Decommissioning Revenues – GE3.8-154

Item	Unit	Number	Salvage Price per Unit	Salvage Price per Turbine	Total (based on 87 turbines)
General Electric 98-meter Turbine Tower	Tonnes per tower	149.4	\$275	\$41,085	\$3,574,395
Nacelle (steel)	Tonnes per nacelle	75.4	\$275	\$20,735	\$1,803,945
Rotor Hub	Tonnes per hub	36.8	\$275	\$10,120	\$880,440



Item	Unit	Number	Salvage Price per Unit	Salvage Price per Turbine	Total (based on 87 turbines)
Anchor Bolts (steel)	Tonnes per turbine	2	\$275	\$550	\$47,850
Transformer	Per turbine	1	\$1,500	\$1,500	\$130,500
Copper	Tonnes per turbine	3.5	\$6,127	\$21,445	\$1,865,715
Substation Components (two transformers)	Each	1	\$75,000	-	\$75,000
Total Potential Revenue (G	\$8,377,845				

Table 9 Estimated Decommissioning Revenues - N163-5.9

ltem	Unit	Number	Salvage Price per Unit	Salvage Price per Turbine	Total (based on 56 turbines)
Nordex 108-meter Turbine Tower	Tonnes per tower	267.8	\$275	\$73,645	\$4,124,120
Nacelle (steel)	Tonnes per nacelle	111.9	\$275	\$30,773	\$1,723,288
Rotor Hub (steel)	Tonnes per hub	49.1	\$275	\$13,503	\$756,168
Anchor Bolts (steel)	Tonnes per turbine	2	\$275	\$550	\$30,800
Transformer	Per turbine	1	\$1,500	\$1,500	\$84,000
Copper	Tonnes per turbine	4.0	\$6,127	\$24,508	\$1,372,448
Substation Components (two transformers)	Each	1	\$75,000	-	\$75,000
Total Potential Revenue (No	\$8,165,824				

### 3.3 NET DECOMMISSIONING COST SUMMARY

Table 10 through Table 12 (V163-4.5, GE3.8-154, and N163-5.9, respectively) provide summaries of the net estimated costs to decommission the Project based on the three turbine models under consideration. Estimates are based on 2025 prices, with no market fluctuations or inflation considered.



Table 10 Net Decommissioning Summary - V163-4.5

Item	(Cost)/Revenue
Decommissioning Expenses	(\$13,929,934)
Potential Revenue – salvage value of turbine components and recoverable materials	\$8,795,752
Net Decommissioning (Cost)/Revenue (Vestas V163-4.5)	(\$5,134,182)
Per Turbine Decommissioning (Cost)/Revenue (based on 74 turbines)	(\$69,381)

Table 11 Net Decommissioning Summary - GE3.8-154

Item	(Cost)/Revenue
Decommissioning Expenses	(\$14,386,968)
Potential Revenue – salvage value of turbine components and recoverable materials	\$8,377,845
Net Decommissioning (Cost)/Revenue (GE3.8-154)	(\$6,009,123)
Per Turbine Decommissioning (Cost)/Revenue (based on 87 turbines)	(\$69,070)

Table 12 Net Decommissioning Summary - N163-5.9

Item	(Cost)/Revenue
Decommissioning Expenses	(\$12,916,900)
Potential Revenue – salvage value of turbine components and recoverable materials	\$8,165,824
Net Decommissioning (Cost)/Revenue (Nordex N163-5.9)	(\$4,751,076)
Per Turbine Decommissioning (Cost)/Revenue (based on 56 turbines)	(\$84,841)

### 3.4 FINANCIAL ASSURANCE

Philip Wind will post a performance bond or equivalent financial instrument for decommissioning prior to the date of commissioning. An updated Decommissioning Plan will be completed prior to COD that will determine the amount of such financial assurance based on the final Project design.

