



# BackGrounder

## HERMANVILLE/CLEARSPRING WIND PROJECT FACT SHEETS

### **General Information**

- Project Cost - \$60 million
- Commissioning Date – January 2014
- Turbine Cost - \$36 million
- Number of Turbines - ten (10) Acciona 116 - 3000
- Turbine Supplier - Acciona Wind Power North America, LLC
- Electrical Capacity - 30 Megawatts
- Owner/Operator - PEI Energy Corporation
- Power Sales - All electrical power will be sold to Maritime Electric Company, Limited (MECL) for on-Island consumption
- Project Construction/Installation Manager - Frontier Power Systems Inc. (Alberton, PE)

### **Turbine Information**

- Acciona 116 - 3000 Turbine - First North American deployment of this turbine for a commercial wind farm application
- Turbine Tower - Tubular Steel Design - transported in five sections
- Manufactured at DSTM Trenton (NS) and transported by road to the site
- Total Turbine Tower Height - 92 meters
  - Individual Tower Sections Weigh from 68.7 tonnes (Base Section) to 43.4 tonnes (Upper Mid Section)
  - Individual Tower Sections Length from 12.2 meters (Base Section) to 27.0 meters (Top Section)
- Total Turbine Tower Weight - 262 Tonnes

### **Operating Parameters**

- Cut-In Speed - 3 m/sec (10.8 km/hr)
- Maximum Power Reached - 10.2 m/sec (37 km/hr)
- Cut-Out Speed - 25 m/sec (90 km/hr)

### **Rotor/Blades/Nacelle**

- Rotor Diameter - 116 meters
- Rotor Speed - Approximately 12.3 rpm
- Individual Blade Length - 56.7 meters
- Blade Weight - 14 Tonnes per blade
- Blade Design - Polyester reinforced fiberglass that is supported by metal beams and internal ribs
- Nacelle weight - 108 tonnes (with gearbox & generator)

### ***Turbine Foundations***

- Foundation Design - Reinforced Concrete
- Total Cost - \$4 million
- Concrete Per Foundation - 730 cubic yards (95 truck loads)
- Rebar Per Foundation - 30 Tonnes
- Foundation Design - CBCL Limited (Charlottetown, PE)
- Contractor - Perry's Construction Limited (Tignish, PE)

### ***Access Roads***

- Road Layout - two access roads terminating on the Souris Line Road (Rte. 305)
- Total Length of Access Roads - approximately 7 kilometers
- Road Clearing - Merchantable wood harvested and remaining material chipped for biomass energy
- Clearing Contractor - Joe O'Connor (Kinkora, PE)
- Building Material - Select Borrow (from nearby pit) with a granular "A" running surface
- Road, Turbine Site & Laydown Area Cost - approx. \$1.2 million
- Road Contractor - Chapman Brothers Construction (Souris, PE)

### ***Electrical Substation/Utility Interface***

- Expected Cost - \$7 million
- Collector Line System - Seven kilometers in length operating at 12,000 volts
- Collector Line Contractor - H-Line (Murray River, PE)
- Transmission Line - 12 kilometers operating at 138,000 volts
- Transmission Line Contractor - Maritime Electric Company, Ltd. (Charlottetown, PE)
- Substation Design - Strum Engineering Consultants (Dartmouth, NS)
- Substation Construction Contractors - Cahill Brother Construction (Souris, PE); AMAC Electric (Pooles Corner, PE), MacDougall Steel Erectors Inc. (Borden/Carleton, PE), Hanson Electric Ltd. (Charlottetown, PE), Gaudet's Electrical (Tignish, PE), Clinton Construction (Souris, PE)

### ***Landowner/Community Involvement***

- Turbine Locations - Three of the ten turbines are on private lands with the remaining turbines positioned on government lands that are managed by Dept. of Agriculture & Forestry
- Landowner Payout - \$220,000 per year to approx. 55 landowners
- Community Payout - \$125,000 per year