

DEMPSEY RIDGE WIND PROJECT



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1 PROJECT DETAILS

1.1 Summary Description of the Project

The Dempsey Ridge wind project is located in Beckham and Roger Mills counties, Oklahoma, on over 7,500 acres of agricultural and grazing land. The project has a capacity of 132 megawatts (MW), consisting of 66 Gamesa 2.0 MW turbines.

The project is expected to reach commercial operation on December 15, 2011. Initiation of test energy will begin some weeks prior to commercial operation. The facility will deliver power into the Southwest Power Pool (SPP) Regional Transmission Organization (RTO) with interconnection with AEP West¹. SPP is one of the nine RTOs in North America. As an RTO under the Federal Energy Regulatory Commission (FERC), SPP operates the market for electricity in the Southwest United States, ensuring reliable supplies and competitive wholesale prices of power. SPP started its real-time spot market operations in early 2007. The real-time market allows power generators to sell power into a wholesale market where it is purchased by load serving entities.

The Dempsey Ridge wind project's Net Capacity Factor (NCF) is currently projected to be 41.8% (at the project substation), based upon long term on-site data acquisition which commenced in October 2006. The NCF for a wind project is the actual energy output for the year divided by the energy output if the machine operated at its rated power output for every hour of the year.

The project is 100% owned by Dempsey Ridge Wind Farm, LLC and Dempsey Ridge Wind Farm, LLC is 100% owned by Acciona Wind Energy USA LLC.

PROJECT OVERVIEW	
Nameplate Capacity	132 MW
Location	Beckham and Roger Mills Counties, OK
Commercial Operation Date	December 15, 2011
Capacity Factor / MWh per year	41.8% / 483,342 MWh/year (at the project substation)
Wind Study	DNV Renewables (USA) Inc.
Project Area under Lease	>7,500 acres under easement agreements
Project Interconnection	SPP: AEP West, Sweetwater 230 kV substation

¹ Initially the project will connect to the Sweetwater-Elk City 230kV line until certain Network Upgrades are completed. Once the Network Upgrades are completed (expected Q1 or Q2 2012) the project will connect to the AEP West Sweetwater 230kV substation for the duration of the project life.

Turbine Technology	Gamesa G90/2000-IEC II A 2.0 megawatt wind turbine
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Table 1: Project Overview

The project has 100% land control for the entire project including all the turbines, substation, and transmission line right-of-way. The point of interconnection land control is currently contemplated under the Large Generator Interconnection Agreement; however a separate easement agreement for this land may be executed in the future. Wind leases are currently on twenty-five year terms with a fifteen year extension. The transmission easements are perpetual. The project substation and operations and maintenance building are on property owned by Dempsey Ridge Wind Farm, LLC.

1.2 Sectoral Scope and Project Type

The project activity is considered under UNFCCC – CDM category “Zero emissions – grid connected electricity generation from renewable sources” with capacity greater than 15 MW. As per the scope of the project activity enlisted in the ‘list of sectoral scopes and related approved baseline and monitoring methodologies’, the project activity may be principally categorized as – Category: 1; Energy industries (renewable/non-renewable sources).

Approved consolidated baseline methodology **ACM0002² “Consolidated baseline methodology for grid connected electricity generation from renewable sources”**; Version 12.1.0.

1.3 Project Proponent

Dempsey Ridge Wind Farm, LLC is the Project Proponent

PROJECT PROPONENT CONTACT	
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Table 2: Project Proponent Contact Information

²<http://cdm.unfccc.int/methodologies/DB/C505BVV9P8VSNV3LTK1BP3OR24Y5L>

1.4 Other Entities Involved in the Project

There are no other entities involved in the Project.

1.5 Project Start Date

The Project Start Date is the turbine supply agreement dated December 10, 2010.

1.6 Project Crediting Period

The starting date of the first crediting period for the project will be the date the wind farm begins commercial operation, which date is expected to be December 15, 2011. The expected operational lifetime of the project activity is 20 years and the project proponent expects to go for a renewable crediting period of 10 years. So, the first crediting period will go from December 15, 2011 to December 14, 2021; the second crediting period will go from December 15, 2021 to December 14, 2031.

1.7 Project Scale and Estimated GHG Emission Reductions or Removals

Project	X
Mega-project	

Years	Estimated GHG emission reductions or removals (tCO ₂ e)
Year 1	312,658
Year 2	312,658
Year 3	312,658
Year 4	312,658
Year 5	312,658
Year 6	312,658
Year 7	312,658
Year 8	312,658
Year 9	312,658
Year 10	312,658
Total estimated ERs	3,126,586
Total number of crediting years	10
Average annual ERs	312,658

Table 3: Estimated GHG Emission Reductions

1.8 Description of the Project Activity

The Dempsey Ridge project activity is a zero emissions, grid-connected, electricity generation source. Wind energy is a clean energy source, and operations do not produce carbon dioxide, sulfur dioxide, mercury, particulates, or any other type of air pollution, as do conventional fossil fuel power sources. The electricity generated by the Dempsey project will displace electricity generated from existing fossil fuel plants in the Southwest Power Pool.

The Dempsey Ridge wind project will consist of 66 Gamesa G90 turbines. Each turbine will have a hub height of 78 meters (m) and a rotor diameter of 90 m, for a total height of approximately 123 m. The turbines will be accessed by public and constructed project roads and interconnected by communication and electric power collection cable within the wind farm.

Key characteristics of the turbines are described in the following table.

TURBINE CHARACTERISTICS	
Nameplate Capacity	2.0 MW
Design Life	Minimum of 20 years
IEC Design	IIA/IIIA
Drive Train	Main axis supported on two spherical bearings reducing the possibilities of breakdown as well as providing a longer service life
Optimal Reliability and Performance	Improved and increased mechanical capacity in yaw system, framework, main axis, and blade bearings guaranteeing maximum reliability and allowing larger rotors to increase power generation
Controlled Brake System	Joint action of aerodynamic brakes and mechanical emergency brake with a hydraulic control system allows controlled braking preventing damage due to excessive transmission load
Dynamic VAR Control System	0.95 lagging to a 0.95 leading power factor throughout the power range
FAA Lighting	Standard FAA Lighting

Table 4: Turbine Characteristics

Each wind turbine will be interconnected in series (“daisy chained”) with other turbines. The collection system (34.5 kV electrical lines) will run underground to the project substation. Here the voltage will be increased to 230 kV and then sent via an overhead transmission line to the interconnection substation at the Point of Interconnect (POI) at the AEP West 230 kV Sweetwater substation.

The technical specifications of the project are as follows:

TECHNICAL INFORMATION	
Turbine Type	G90 2.0MW 60Hz
Number of Turbines	66
Nameplate Capacity	132 MW
Rotor Type	90 meter

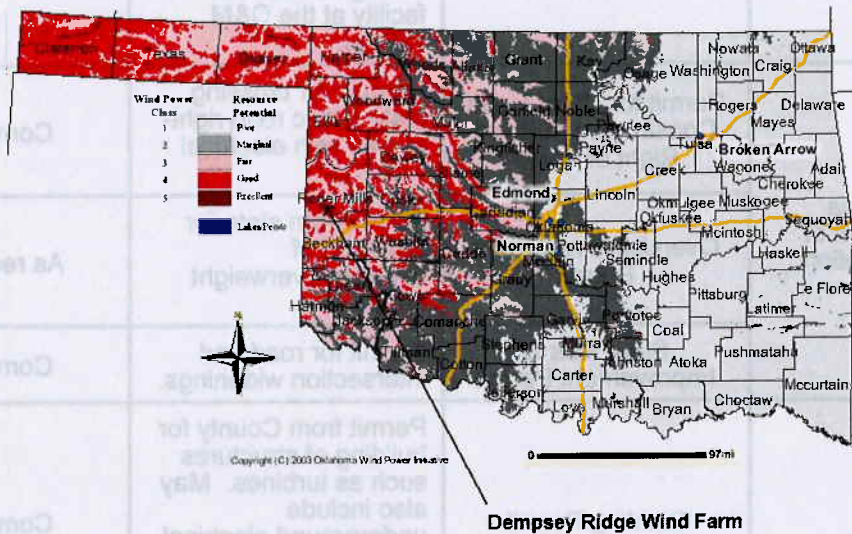
Table 5: Technical Information

The expected operational lifetime of the project is 20 years from the commercial operation date.

1.9 Project Location

The project is located about 10 miles southwest of Cheyenne and 30 miles northwest of Elk City in Western Oklahoma at grid coordinates: Latitude: 35.5°N Longitude: -99.48°W

The project is divided between two counties: All turbines, the substation, and approximately 9.9 miles of overhead transmission line are located in Roger Mills County and the remaining approximately 5.2 miles of overhead transmission line and the interconnect point are located in Beckham County. The project is accessible via Oklahoma State Highway 6 and U.S. Route 283.



1.10 Conditions Prior to Project Initiation

The project area and adjacent properties are located in a traditionally rural region where agriculture and mineral resource extraction are the principal economic pursuits. The project property consists of separate leased parcels of land totaling an area of approximately 11.7 square miles. Agricultural lands surround the project property in all directions and are dominated by livestock pasture with a few surface water bodies in the adjacent area. The land is owned and will remain under the ownership of several parties for agricultural use. Socio-economic activity in the project area will remain unchanged upon completion of the wind farm construction and throughout the operational life of the farm.

