

**POSITIVE CLIMATE CARE 4.67 MW  
BUNDLED GRID CONNECTED  
WIND POWER PROJECT ACTIVITY  
IN JAISALMER, RAJASTHAN,  
INDIA**



Monitoring Period:  
April 1<sup>st</sup>, 2006 - June 30<sup>th</sup>, 2009

Total Available Volume:  
**21,927 VCU**s

**Positive Climate Care Private Limited**

108, Ashirwad Complex, Central Spine,  
Vidyadhar Nagar, Jaipur-302023  
Rajasthan (India)

Tele-Fax : +91-141-2338078

Website: [www.positiveclimatecare.com](http://www.positiveclimatecare.com)

E-mail: [positiveclimatecare@gmail.com](mailto:positiveclimatecare@gmail.com)

## VER PORTFOLIO DESCRIPTION

### Positive Climate Care 4.67 MW Bundled Grid Connected Wind Power Project Activity in Jaisalmer, Rajasthan, India

<b>Project Type</b>	Type 1: Renewable Energy Projects
<b>Project Locations</b>	Seven wind turbines were installed and operating in three different villages of district <i>Jaisalmer, in the state of Rajasthan, India.</i>
<b>Description of Project</b>	The project activity consists of installation and operation of seven Wind Electricity Generators (WEGs) to aggregate the installed capacity to 4.67 MW. Three out of seven WEGs are of 1250 kW capacity each (Suzlon make) and remaining four machines are of 230 kW capacity each (Enercon make). The generated electricity from the renewable energy of wind power is being sold to the State Electricity Utility RVPNL (Rajasthan Vidyut Prasaran Nigam Limited) through a power purchase and wheeling & banking agreement. The current project activity replaces fossil fuels based electricity generation for the region, thereby contributing to reduced greenhouse gas emissions.
<b>Methodology</b>	AMS I D - Grid Connected Renewable Electricity Generation  Methodological Tool: "Tool to calculate the emission factor for an electricity system"; EB 35, Annex 12, version 01.1; Valid from: July 29 <sup>th</sup> , 2008
<b>Volume / Vintage</b>	5329/ Year 2006  6328/ Year 2007  6971/ Year 2008  3299/ Year 2009  Total Available Volume: <b>21927</b> / (April 1 <sup>st</sup> , 2006 – June 30 <sup>th</sup> , 2009)
<b>Transaction Type / Availability for Delivery</b>	Out of the total issued volume 15779 VCUs are available for sale.
<b>Unit Price</b>	Quotes are welcome.
<b>Legal Title</b>	<b>Positive Climate Care 4.67 MW Bundled Grid Connected Wind Power Project Activity in Jaisalmer, Rajasthan, India</b>
<b>Costs &amp; Taxes</b>	Seller has borne all costs associated with the production, validation and verification of the project activities.
<b>Verification Standard</b>	Voluntary Carbon Standard (VCS) 2007.1
<b>Monitoring Standard / Methodology</b>	Title: "Grid connected renewable electricity generation" AMS I D, version 14; valid from 31 <sup>st</sup> July 2009  Reference: Clause 31 of Appendix B - the simplified modalities and procedures for small-scale CDM project activities.  The project proponents (PPs) formulated a project team to ensure proper and continuous monitoring of the performance of turbines and generation of power. To

	<p>ensure trouble free operations and efficient generations through all the wind turbines, PPs have entered into a comprehensive Operation and Maintenance (O&amp;M) agreement with the manufactures of the turbines , i.e. Suzlon and Enercon, for the entire crediting period of 10 years. The project team is also responsible for calculation of actual creditable emission reduction in the most transparent and relevant manner.</p> <p>The first monitoring report was submitted to VCSA for the period from April 1<sup>st</sup>, 2006 through June 30<sup>th</sup>, 2009. Salient features from this report are included here:</p> <ul style="list-style-type: none"> <li>○ In accordance with the AMS I D, version 14 guidelines, the monitoring consisted of metering the generated electricity. The metering is carried out using electronic tri-vector meters of accuracy 0.2%.</li> <li>○ The monitoring at WEG end is equipped with an integrated electronic controller meter. These meters are connected to the Central Monitoring Station (CMS) of the entire wind farm through a wireless Radio Frequency network. The generation data of individual machine can be monitored as a real-time entity at CMS. A snapshot of generation on the last day of every calendar month is kept as a record both in electronic as well as printed forms.</li> <li>○ The generated electricity is measured through a two step procedure in which the first metering is carried out at the controller of the machine , as explained in the previous bullet. The second metering consists of joint measurements at the interconnection point wherein representatives of the two parties (i.e. RVPNL/DISCOM and developers) take Joint Meter Reading on the first day of every calendar month.</li> <li>○ In the event that the main metering system is not in service as a result of maintenance, repairs or testing, then the backup metering system is used.</li> <li>○ RVPNL/DISCOM seals the main metering system and the backup metering system in the presence of representatives of Power Producer/Developer.</li> <li>○ When the main metering system and/or backup metering system and/or any component thereof is found to be outside the acceptable limits of accuracy or otherwise not functioning properly, it is repaired, re-calibrated or replaced as soon as possible by the Power Developer or by the RVPNL/DISCOM.</li> <li>○ Any meter seal can only be broken by the authorized officer of RVPNL/ DISCOM in the presence of developer’s representatives, whenever the main metering system or the backup metering system is to be inspected, tested, adjusted, repaired or replaced.</li> <li>○ The individual WEG has installed panel meters and no calibration is required for these meters as there is a quality procedure incorporated in software itself.</li> </ul>
<b>Status of Verification</b>	Verified on September 17, 2010
<b>Additionality</b>	<p>The project activity is a voluntary initiative by project proponents, and it is not mandatory by law. In line with VCS 2007.1 requirements, the project proponents demonstrated, (through Attachment A of Appendix B for simplified modalities and procedures for small scale CDM project activities) that the project activity was additional and not a baseline scenario.</p> <p>Investment analysis, involving separate IRR analysis for each project proponent, indicated that in all the cases internal rate of returns (IRRs) were quite lower than the Weighted Average Cost of Capital (WACC), chosen as the benchmark. The low IRR is mainly attributed to variation in Plant Load Factor (PLF), which is the key</p>

	<p>variable encompassing variation in wind profile, variation in off -take (including grid availability) and machine downtime. PLF in the desert area of Rajasthan is significantly low, indicating further reduction in output thus diminishing IRR. The project was not only determined financially unattractive, but along with the financial barrier, other barriers due to hot climate and harsh environment have also been prevailing at the site. The hot, harsh and dusty climatic region of Rajasthan state was selected as the project site, for the mere reason that energy, technology and overall development should reach in this region too. The site is such that excessive dust can simply malfunction the turbine blades, thereby adding to operation and maintenance expenditure.</p> <p>However, incentive through sale of the emission reductions should improve the returns from the project activity. It can be justified that <i>carbon revenue</i>, which the project activity should obtain through the sale of the emission reductions, is very crucial to sustain the operations of the project activity.</p>
<b>Registry</b>	APX VCS Registry System – Project ID 499
<b>Co-Benefits</b>	<p>The main purpose of the project activity is to generate electrical energy through sustainable means using wind power resources, to bank and wheel through the local and regional grids, and thereby contributing to climate change mitigation efforts. The project is located in the rural areas of Jaisalmer and implementation of the project activity has contributed positively towards the ‘Sustainable Development’ in this region. Some of the co-benefits through this project activity are listed below:</p> <ul style="list-style-type: none"> <li>• The generated electricity is fed into the regional grid through local grid, thereby improving the grid frequency and availability of electricity to the local consumers (villagers &amp; sub-urban habitants), which in turn provide new opportunities for industries and economic activities to be setup in the area thereby resulting in greater local employment, ultimately leading to overall development;</li> <li>• The project activity has led to a good investment in a developing region that would not have otherwise happened in the absence of the project activity;</li> <li>• Upliftment of skilled and unskilled manpower in the region by providing employment not only during the construction phase, but also during its operational life time;</li> <li>• Use of renewable energy source (wind energy) for electricity generation instead of using fossil fuels like coal, natural gas, helps in conservation of these resources and reduces stress on the economy of the country ;</li> <li>• There is considerable wind resource in Rajasthan that has not been harnessed. This Project acts as a catalyst towards sustainable wind energy development in the state of Rajasthan;</li> <li>• As wind power projects produce no end products in the form of solid waste (ash etc.), they address the problem of solid waste disposal encountered by most other sources of power;</li> <li>• Also, as there is no fuel used for electricity generation, there aren't any effluents discharged into the water bodies.</li> </ul>

## Photographs Taken During Stakeholders Meetings



## Wind Mill Photographs





**Electronic Controller Meter**

