



### APPENDIX 3.3

EXCERPTS FROM “PROJECT APPRAISAL DOCUMENT ON THE PURCHASE OF EMISSION REDUCTIONS PROPOSED BY THE PROTOTYPE CARBON FUND IN THE AMOUNT OF USD 1.5 MILLION TO THE NORTHWIND POWER DEVELOPMENT CORPORATION FOR A NORTHWIND BANGUI BAY PROJECT,”  
WORLD BANK, 8 DECEMBER 2004

This document shows that the Bangui windmills are a private venture, specifically of the Northwind Power Development Corporation (NWPDC). Of local government involvement in the project, the document states that NWPDC “enjoys the support of the provincial government of Ilocos Norte.” Nothing in the document indicates that the project was initiated by then governor Bongbong Marcos.

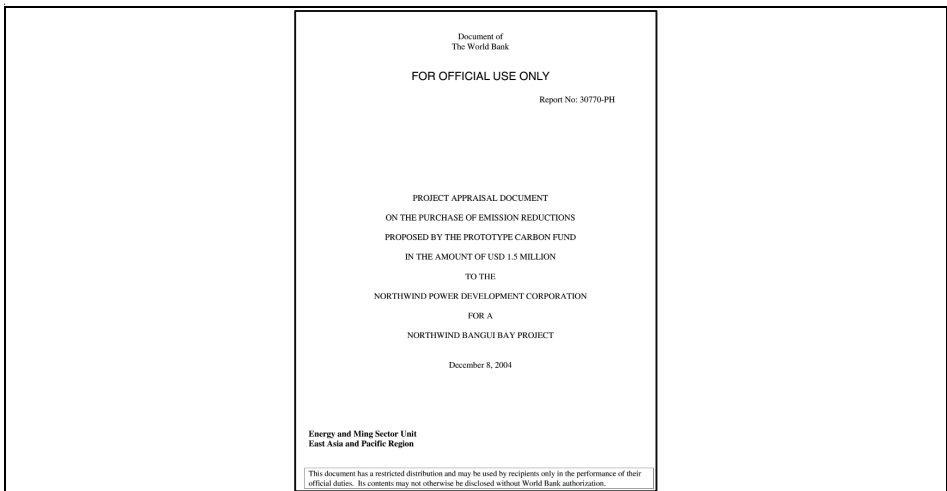


Figure 1. Coversheet of the Bangui Windmills World Bank loan.

Source: World Bank. 2004. “Project Appraisal Document on the Purchase of Emission Reductions Proposed by the Prototype Carbon Fund in the Amount of USD 1.5 Million to the Northwind Power Development Corporation for a Northwind Bangui Bay Project.” World Bank. <http://documents.worldbank.org/curated/en/117851468095656834/pdf/307700PAD0P0871ecemember0200401final1.pdf>.

<b>Philippines</b> <b>NorthWind Bangui Bay Project</b> <b>PROJECT APPRAISAL DOCUMENT</b> <b>East Asia and Pacific Region</b> <b>Energy and Mining Sector Unit</b> <b>Prototype Carbon Fund</b>			
Date: December 1, 2004 Country Director: Joachim von Amsberg Sector Manager: Junhui Wu Project ID: P087464 Instrument: Emission Reductions Purchase		Team Leader: Selina Shum Sectors: Energy Themes: Infrastructure services for private sector development, Rural services and infrastructure, environmental policies and institutions	
Project Financing Data			
<input type="checkbox"/> Loan <input type="checkbox"/> Credit <input type="checkbox"/> Grant <input type="checkbox"/> Guarantee <input checked="" type="checkbox"/> Other: Prototype Carbon Fund For Loans/Credits/Others Total Project Cost (US\$m.): 35.4      Cofinancing: 35.4 Total Bank Financing (US\$m.): \$0 Proposed terms: yearly payments until 2014			
Financing Plan (US\$m.)			
Source	Local	Foreign	Total
Private Investors	1.0	3.7	4.7
IBRD/IDA			
Others			
Danish International Development Agency (DANIDA)		30.8	30.8
Borrower: Not applicable Responsible Agency: NorthWind Power Development Corporation (NWPDC)			
Estimated disbursements (Bank FY/US\$m): N/A			
FY			
Annual			
Cumulative			
Project implementation period: 2005-2014 Expected effectiveness date: January 2005 Expected closing date: December 2014			
Does the project depart from the CAS in content or other significant respects? <i>Ref. PAD A.3</i>			⌊ Yes   X No
Does the project require any exceptions from Bank policies? N/A			⌊ Yes   ⌊: No
Have these been approved by Bank management?			⌊ Yes   ⌊ No
Is approval for any policy exception sought from the Board?			⌊ Yes   X No

Figure 2. Bangui World Bank loan summary part one.

Source: World Bank (2004).

Does the project include any critical risks rated “substantial” or “high”? <i>Ref. PAD C.5</i>	☐ Yes X No
Does the project meet the Regional criteria for readiness for implementation? <i>N/A</i>	☐ Yes ☐ No
<p><b>Project development objective <i>Ref. PAD B.2.</i></b>  This Project will contribute to the country’s development objectives of sustainable economic development through the enhancement of both quantity and reliability of power supply in an environmentally responsible manner. The Project will also contribute towards the global environment objective of reducing greenhouse gas emissions through the avoidance of thermal power generation.</p>	
<p><b>Project description <i>Ref. PAD B.3.</i></b>  This wind farm project will comprise (a) fifteen wind turbines, with a total capacity of 24.75 MW and annual energy production is estimated to be about 74.48 GWh; and (b) construction of a 50 km 69kV overhead transmission line to deliver the power to Ilocos Norte Electric Cooperative (INEC) which has the exclusive franchise to distribute electricity in the area. The PCF will purchase ERs, targeted annually at 35,600 tons of Carbon Dioxide equivalent(tCO<sub>2</sub>e), for the first 10 years of the project operation at a price of US\$4.25/tCO<sub>2</sub>e, totalling approximately \$1.5 million.</p>	
<p>Which safeguard policies are triggered, if any? <i>Ref. PAD D.3, Technical Annex 10</i></p> <p>O.P. 4.01 – Environmental Assessment - see Annex 10</p> <p>Significant, non-standard conditions, <b>if any</b>, for:</p> <p>Board presentation: Not applicable</p> <p>Loan/credit effectiveness: Not applicable</p> <p>Covenants applicable to project implementation: Not applicable</p>	

Figure 3. Bangui World Bank loan summary part two.

Source: World Bank (2004).

## **B. PROJECT DESCRIPTION**

### **1. Instrument**

The Project sponsor is a local private company, Northwind Power Development Corporation (NWPDC). PCF will purchase partial or entire CERs upon the operation of this Project for ten years. The Emission Reductions Purchase Agreement (ERPA), recently negotiated between NWPDC and the Bank (acting as trustee for PCF), provides for a price of \$4.25 per tCO<sub>2</sub>e and target annual CERs of 35,600 tCO<sub>2</sub>e. The exact amount of CERs eligible for purchase is determined by a Baseline Study and by independent verification of actual energy output each year after plant commissioning.

### **2. Project Development Objective and Key Indicators**

This Project will contribute to the country's development objectives of sustainable economic development through the enhancement of both quantity and reliability of power supply in an environmentally sustainable manner. The Project will also contribute towards the global environment objective of reducing greenhouse gas emissions through the avoidance of thermal power generation. The key Project performance indicators will include (a) the quantity and cost of electricity generation/sales; and (b) actual CERs.

### **3. Project Components**

The Project is located in the foreshore of Bangui Bay in Ilocos Norte Province. The wind farm project, with total cost of US\$35.45 million, will comprise: (a) fifteen wind turbines of 1,650 kW rated capacity each, totaling 24.75 MW. Annual energy production is estimated to be about 74.48 GWh at a capacity factor of 34%; and (b) construction of a 50 km 69kV overhead transmission line to deliver the power to the switchyard of the offtaker, in Laoag City. The Engineering and Procurement Contract (EPC) of about \$31 million for a turnkey installation of power plant, substation and transmission line has been awarded to NEG Micon. Considering the wind farm costs alone, the installed cost is about \$1,186 per kW. Counting all project costs, the installed cost is about \$1,400 per kW. This is still in the middle of the cost range of recent experience for 25 MW-scale wind projects. All power produced will be sold to the Ilocos Norte Electric Cooperative

(INEC) through an Electricity Sales Agreement (ESA) signed in 2002. INEC has the exclusive franchise to distribute electricity in the area.

#### **4. Lessons Learned and Reflected in the Project Design**

The project technical design represents the most advanced developments in wind technology and the results of decades of operational experience by Danish companies. Some of the lessons learned from past wind projects that were reflected in the present design include: a) the need for an adequate period of wind energy measurements at the site, b) the need to ensure minimal grid interconnection impacts, c) adequate consideration for the violent typhoons that are frequent in the country, and d) the need for long-term power purchase contracts to assure project sustainability. At least two years of wind data collection with anemometers and modern data logger equipment preceded the project design. A detailed system impact study for the INEC/Transco grid was carried out by the national transmission company which confirmed that the wind farm could be readily connected to the grid with only a minimal amount of capacitive compensation needed. The NM82 turbine that was chosen has a survival wind speed of 70 m/s, well in excess of the maximum 44 m/s recorded with typhoons in the area during the two years of wind measurement. The 20 year ESA with INEC minimizes the market risk of the Project. Lessons learned from earlier CF projects have been incorporated in the Bank's due diligence work, as well, including: a) the need to pay special attention to the implications of overall power sector restructuring and renewable energy policy on the Project, and b) the need to carefully assess the creditworthiness of the offtaker and its long term ability to purchase power from the Project.

#### **5. Alternatives Considered and Reasons for Rejection**

An alternative to this Project is to maintain status quo of power supply by the National Power Corporation (NPC) that has been dominated by imported and polluting fossil fueled power generation. This alternative has been rejected for the following reasons: (a) the shift from fossil fueled power generation to renewable forms of energy is a key strategy of the GOP to increase the energy security of the country while minimizing the environmental impact of power generation; (b) the shift from public sector to private sector financing of power generation and transmission is a compelling response to the serious fiscal deficits of the country and provides the potential for operational efficiency

gains by private sector management; and (c) the Project, by design, represents a lower cost alternative to the traditional supply of power by NPC. This will be translated into lower end-user price in the Project area as the price of wind power to be sold to INEC will be lower than that of NPC. Indeed, the Project was selected as the first PCF project in the Philippines because of its sound project design, its readiness to commence operation in 2005 and the commitment of the Project sponsor, private investors and provincial government in forging an effective public/private partnership which is crucial to advance RE development in the country.

## C. IMPLEMENTATION

### 1. Institutional and Implementation arrangements

The Project will be implemented in accordance with the ERPA signed between NWPDC and the Bank, as trustee of the PCF. A Monitoring Plan (MP) has been agreed between parties to the ERPA. The ERPA and MP define the quantity, price and other delivery conditions for ERs to be purchased by PCF as well as monitoring and verification systems and methods. Eligibility of ERs for purchase by PCF will be verified by an independent third party. Verification and certification of ERs generated annually by the Project will be coordinated by the PCF which will ultimately purchase the ERs. As per the requirement of the Kyoto Protocol, GOP will operate a registry to manage the transfer of ERs generated by the project.

*NWPDC, the Project Sponsor*, will be responsible for implementation of the Project, including the following provisions under the ERPA:

- Maintain and operate the Project in accordance with sound business practices, proper due diligence and high efficiency;
- Undertake all reasonable efforts, including project documentation, to ensure eligibility of ERs under Art.12 of the Kyoto Protocol;
- Undertake, satisfactory to the Bank, actions agreed in the Environmental Management Plan (EMP) to comply with the Bank's safeguard policies; and

- Notify the Bank of anything that may have an impact on the project or its capacity to deliver ERs, including delays, material adverse changes and force majeure.

Specifically, in relation to ER, NWPDC will:

- Monitor the emissions and other relevant parameters;
- Organize periodic auditing of the project and verification that emission reductions have been achieved in compliance with relevant project criteria, including the preparation of required reports;
- Prepare a brief annual or biannual report that should include: information on overall project performance, emission reductions generated and verified and comparison with targets, observations regarding MP baseline scenario indicators, information on adjustment of key MP assumptions, and calculation methods and other amendments of the MP; and
- Ensure certification of verified emission reductions.

**Payment and Flow of Funds.** The timing of the first payment will occur upon certification by the PCF that all the relevant conditions provided under the ERPA have been met. Thereafter, the PCF will only disburse against delivery of verified and certified ERs. The involvement of the PCF with the project will expire after CERs up to the total contract amount have been delivered. In the event that the project sponsors fail to deliver the quantity of CERs for any given calendar year as set forth in the ERPA, they will be required to make-up the shortfall over the course of the following calendar year or other period agreed upon.

## 2. Monitoring and Evaluation of Outcomes/Results

Carbon finance projects are initially evaluated on the basis of an ex-ante analysis of the emissions baseline (conventional generation and emissions that would have occurred in the absence of the project) and determination of project additionality. Project performance – and payment for CERs – is then monitored in accordance with the requirements of the MP incorporated in the schedule of the ERPA and evaluated on the basis of achieving the expected CERs. Monitoring and evaluation of CERs is implicit in the project as a function of electricity

generation as it occurs, with payment based on Megawatt hours (MWh) of generation as invoiced to the customer purchasing the electricity.

To increase the likelihood that CERs acquired under the ERPA will satisfy the requirements of the UNFCCC and the Kyoto Protocol, PCF will retain the services of internationally-recognized, fully independent third parties to: a) provide validation of the sector-wide Baseline; b) provide validation of the project design, the project specific Baseline Study (test of additionality against the sector-wide baseline), and the MP. This independent third party will also undertake periodic verification and certification of the ER generated by each project and issue a Verification and Certification Report that includes:

- A statement of the amount of verified and CERs the projects have generated in the relevant period,
- Other matters as may be required by the UNFCCC or Kyoto Protocol, and
- Verification of compliance with Bank Safeguard Policies.

The validator will present a Project Design Document (initial PDD in Annex 13), along with a description of the methodology chosen to measure the ERs and to demonstrate additionality, to the Executive Board of CDM, for its approval and registry under international rules. This approach ensures the creation of an environmental commodity that is recognized by existing laws of the Philippines and conforms in due course to the relevant international agreements. It is understood that these international guidelines may change, according to decisions by the Conference of the Parties to the UNFCCC and Kyoto Protocol. The project will be reviewed by the Bank during the construction phase of Project to address areas of implementation weaknesses, especially concerning the EMP, accommodate changes in priorities, and ensure compliance with relevant Bank policies and procedures.

### **3. Sustainability**

The project sponsor is a private company whose principals have years of experience in power and energy systems and business development, and enjoys the support of the provincial government of Ilocos Norte. The main consultants for the technical design was the Danish firm, TRIPOD, that has over twenty years of experience in providing specialized wind energy engineering services to international clients.



NEG Micon (NEGM), a highly reputable Danish firm, will construct the wind farm on turnkey basis, and operate and maintain it for the first five years, ensuring ample time to train NWPDC local personnel. The wind farm is thus expected to operate efficiently and continuously during the project life. Multiyear wind measurements conducted at the pre-investment stage maximizes the chances that projected annual wind energy production will be achieved. Purchase of generated electricity on “as-and-when-available” basis is guaranteed by a 20-year ESA with a single offtaker, INEC. The finances of INEC are expected to remain satisfactory, as elaborated in the financial analyses below.

