

ఆంధ్రప్రదేశ్ సంప్రదాయేతర ఇంధన వనరుల అభివృద్ధి సంస్థ లి.,
Non-Conventional Energy Development Corporation of Andhra Pradesh Ltd.,
(A State Government Company)

Regd. Office: 5-8-207/2, Pishah Complex, Nampally, Hyderabad-500 001. India.
Tele: Off: 3202391 / 3203692 / 3203836 / 3203837, Grams: "NEDCAP" Fax: 040-3201666



Branch Office :

Tel:

Ref:

Date:

NEDCAP/WE/NCES/207

17.04.2000

To

Mr. V.R. Raghunathan,
Chairman and Managing Director,
M/s WESCARE (India) Ltd.,
Chennai

Sir,

Sub: Development of Non Conventional Energy power projects - Reg.

During the meeting held on 11.04.2000 at our registered office, you have proposed that sale of CO₂ benefit can be effected by NEDCAP on behalf of the power producers through renewable sources in Andhra Pradesh. You have promised that the details will be made available to NEDCAP for further action at our end.

It is requested to arrange to send the details in order to take further action.

Thanking you,

Yours faithfully
For NEDCAP Ltd.,

Managing Director

WESCARE

WESCARE (INDIA) LIMITED

Wescare Towers, Cenotaph Road,
Teynampet, CHENNAI - 600 018. INDIA.
TEL : (91) 44 - 4360581
FAX : (91) 44 - 4360583
E-mail : wescare@vsnl.com

Date : 25.04.2000

The Managing Director
Non Conventional Energy Development
Corporation of Andhra Pradesh Ltd.
5-8-207/2, Pishah Complex, Nampally,
Hyderabad -500 001

Dear Sir,

Sub: Sale of Co2 benefit - Reg.

Refer your letter NEDCAP/WE/NCES/203 dated 17.04.2000 regarding the above subject.

Please find enclosed a write up on Co2 reduction through wind power - a concept proposal for cross border cooperation.

Hope the above details will be of use to you.

Thanking you,

Yours faithfully
for **WESCARE (INDIA) LTD,**


N RAMANI
Director

CO₂ REDUCTION THROUGH WIND POWER : A Concept Proposal for Cross Border Co-operation

Introduction

The concern for the environment in terms of air, water and land pollution has increased in recent years. Many scientific studies, international institutions, international treaties have emerged to assess, understand, reduce and monitor the state of the earth's environment. There is now scientific consensus about the impact of technology, development and industry to natural resources. Sustainable development and green technologies offer the possibility of development without environmental impact.

The energy and electricity sectors are a major contributor to the economic output of a country and are also now accepted as a major contributor to anthropogenic emissions in the form of green house gas emissions. Within the energy sector, energy efficiency and renewable energy have been identified as two thrust areas which can result in a reduction in emission of green house gases.

Background

On the 9th of May 1992, the United Nations adopted the United Nations Framework Convention on Climate Change. Between 1992 and 1993 the Convention has been accepted by 166 countries. The adoption of the Convention has put an end to the debate regarding the harmful impacts of emissions. The Second Assessment Report (SAR) of the Inter Governmental Panel on Climate Change, considered to be a monumental scientific undertaking which involved 350 scientists as authors and 545 as reviewers, established that. The Convention has begun a phase of negotiations, discussions, and investigations into the best approaches to deal with a now accepted global concern.

As per the provisions of the Convention, the Parties of the Convention have met for Conferences with a view to elaborate on the approach towards implementing the objectives of the Convention. Most notably a Protocol, now known as the Kyoto Protocol, was adopted at the third session of the Conference of Parties of the Convention in 1997 held at Kyoto. The Protocol laid out the broad guideline for voluntary and regulatory efforts towards fulfilling the aims of the Convention. The Protocol envisages the use of new instruments such as Joint Implementation, Clean Development Mechanisms and Emission Trading Systems.

The World Business Council for Sustainable Development (WBCSD), an independent industry coalition comprising of 125 leading companies from 30 countries¹, estimates that the "Non-Annexure 1" countries comprising of many Asian, African and other developing countries of the Group of 77 will account for more than 50 % of emissions as their economies grow. This brings into importance the need for international collaborations and joint participation in projects resulting in displacement or reduction of green house gas emissions.

The challenges viz. target reductions, the apparent conflicting interests of parties and the pioneering nature of the process itself pose challenges to governments, policy makers and industries. The WBCSD comments that "the Kyoto Protocol should be approached in the spirit of innovation, that is, with the expectation that mistakes will be made, but that it is better to start down the road of *learning by doing* than to wait."² Projects are expected to use market based instruments, have a voluntary approach (until regulation catches up), and be innovative. With this in mind, this proposal for prospecting of Green Incentives for wind power projects in India is being developed.

Wind power projects are a suitable technology and investment for achieving emissions reduction as:

- Energy industries contribute a major portion of emissions.
- Unlike afforestation projects, renewable energy projects answer the development needs for energy solutions in growing economies.
- Wind power is among the most mature forms of renewable energy and capable of providing large amounts of utility scale power.
- The technology has now been widely tested and established market operators are available for supply of equipment, know how, and services.

The Proposal – An Overview of the Transaction

The Proposal envisages the payment of a Green Incentive for electricity units (measured in kilowatt-hours or kWh) generated by existing and new wind power facilities in Andhra Pradesh, India.

The Proposed Paying Party will be an overseas corporate body and the Receiving Party will be the owner of wind power facilities in India or a legitimate representative or agent of the owner.

¹ Member companies include the likes of 3M Corp., Asea Brown Boveri, Zurich Insurance Group, Unilever, PowerGen, AT&T, Arthur D. Little, Sony Corp, Mitsubishi Corp., among others.

² "COP 4 : A Business Perspective" by WBCSD.

The payment of a Green Incentive will be against units or kWh produced by wind turbines and will entitle the Paying Party:

- To treat this payment as an expenditure towards reduction in emissions.
- To avail of any tax or fiscal incentives that may be available in the Paying Party's country.
- To be able to sell, lend, assign and transfer any emissions credits that will be associated with the electricity for which a Green Incentive has been paid.

The Receiving Party will:

- Be entitled to sell the electricity to any customer of its choice.
- Not sell, lend, assign and transfer "emissions-credits" associated with kWh generated and for which Green Incentive has been received.

The transaction will be governed by an agreement between the Paying Party & the Receiving Party.

The Green Incentive will be calculated on the basis of the CO₂ content (in Kilograms) of each unit of displaced electricity. Coal thermal plants dominate the power sector in India and are expected to be the mainstay of future capacity addition. Coal based electricity is known to emit 0.75 to 1.25 kilograms of CO₂ per kWh of electricity. Therefore the value in CO₂ kg terms of electricity generated by wind power will be 0.75 to 1 (being the amount of CO₂ avoided from being emitted).

There are varying estimates of the cost of avoiding emissions equivalent to 1 kg of CO₂. During the Netherlands Programme on Pilot Projects for Joint Implementation, these figures ranged from half a US dollar to 250 US dollars per avoided ton of CO₂. Given the pioneering nature of the transaction and the importance of making a first breakthrough, the Green Incentive may be valued from 5 US cents to 10 US cents.

Wind Energy in India – A brief Overview

India is the fourth largest market for wind power with an installed capacity of nearly 1000 MW, next only to Germany, United States and Denmark. The wind power industry has grown in India within the span of a decade. With an estimated potential of 20,000 MW, the country is now poised to achieve significant growth in this sector.

Costs of avoided ton of CO₂ from a mix of different projects (forestation, waste treatment, energy efficiency etc.) from "The Netherlands' Programme on Activities Implemented Jointly", Netherlands Ministry of Foreign Affairs.

The wind power program in India was initiated by the Government of India towards the end of the Sixth Plan in 1983-84. A separate ministry in the central government, the Ministry of Non-conventional Energy Sources (MNES), coordinates the wind power program of the country. The objective of the program is aimed at catalyzing commercialization of wind power generation in the country. In India, every state of the country has a State Electricity Board that functions as the electric utility within the state and is responsible for generation, transmission and distribution of electricity. The MNES therefore operated with the assistance of State Nodal Agencies in each of the states.

The components of the Program were:

- Wind Resource Assessment Program
- Implementation of Demonstration Projects
- Support for Research & Development
- Support for Development of Manufacturing Capacity
- Package of Incentives for Market Driven Growth

As a result of the above, nearly 1000 MW of wind power capacity has been added in recent years, particularly in the states of Tamil Nadu and Gujarat. From the period 1992 to September 1998, a total cumulative of 3,467.5 million kWh was produced by wind power in India and fed into the transmission systems.

The past developments in this sector and the possibilities for future growth make India a favorable choice to implement a pioneering Green Incentive transaction.

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Ref:

NEDCAP/WE/10/2000/460

Date:

02.5.2000

M/s. WESCARE (India) Ltd,
WESCARE TOWERS
Cenotaph Road, Teynem pet,
Chennai - 600 018

Fax:044-4360583

Attn: Mr N. Ramani

Sir,

Sub:Sale of Co2 benefit - Reg.
Ref: Your lr.dt.25.4.2000.

* * *

With reference to the above we are to inform that the concept proposal for Cross Border Co-operation is received. We request you to intimate the agency to be approached for claiming green power incentive with detailed address and contact person. On sending the proposal to the agency concerned, we will be approaching you for pursuation.

Thanking you,

Yours faithfully,
for NEDCAP Ltd,

G. Lakshmi
for MANAGING DIRECTOR

for EB