

India – Sri Lanka Wind Energy Knowledge Exchange Program

6th Nov 2009

Hotel Trident, Chennai



United States Agency for
International Development



South Asia Regional Initiative for
Energy



Experience Sharing With Wind Farm Developers

Rangarajan Balajee
Chief Operating Officer

Auro Mira Energy Co (P) Ltd.

“Auro Mira House”

11/29 Shafee Mohd. Road

Chennai- 600006

Ph: +91-44-2820 9800 (30 lines)

Dir: +91-44-2820 9899

Mob: +91-94450 21681

Fax: +91-44-2820 9897

Background of Wind Energy

- ✚ Wind as an essential component of green energy
- ✚ Origin of wind energy
- ✚ Commercial exploitation and use of wind energy started in 1880s in Scotland and USA (Cleveland, Ohio)
- ✚ The first major initiative in wind energy in India happened in 1985 with setting up of 49 kW plant at Polanko, Gujarat

- ✚ From small beginning the total installed capacity globally currently stands at 138,549 mW and in India it is 10,742 mW
- ✚ USA being the top with 25.35%, 5 nations contribute for 83.89% installation of the above and India is in 5th position
- ✚ In India, Tamilnadu being the top with 42.39% 4 states contribute for 76.65%

Key areas for installing the project based on experience

Site
identification

Technology
sourcing

Understand
local policy
guidelines

Project
structuring





Project
implementa
tion

Evacuation
and Power
Sale





Site Identification

- ✚ Proven / Installed location: We looked at total capacity installed / availability of land/ availability of other required infrastructure such as evacuation, transmission and facilities available on post COD for smooth O & M
- ✚ New Locations : Analysis of pre-identified sites by the Government Agencies
- ✚ Validation of existing wind data
- ✚ On satisfactory result went ahead in purchase of land for the project

Technology Sourcing

-  Overview of existing technology and equipment at various wind farm near the identified location
-  Analyzing in-depth the performances and problem of various technologies installed near the identified location
-  Zeroing on the best suited technology / equipment
-  In case of non-tested sites closely interact with leading wtg manufacturers to finalise the best

Local policy guidelines

-  Understand land use restriction in the local area
-  Understand categorization of the land (Private / Government / Forest)
-  Understand the accessibility / approach to the identified site
-  Understanding of any major environmental impact

Project Implementation

- ✦ Finalise implementation strategy and time lines
- ✦ Finalise turnkey contracts Vs packaged based procurement
- ✦ Clarity on project management capabilities



- ✚ Structure monitoring to ensure against time and cost slippages
- ✚ Addressing implementation issues if any jointly with the Vendor
- ✚ Achieving project COD as per envisaged time lines

Evacuation and Power sale


- ✚ Tie-up with the transmission utility for evacuation of power (In India this is done immediately on freezing the project and site identification)

- ✚ Finalization of power consume, either for:
 - i) captive
 - ii) 3rd Party Sale
 - iii) power trading companies
 - iv) sale to Government utilities

Challenges faced

- ✚ We started off with an idea, but no experience
- ✚ Convincing lenders to look at this industry as a promising and safe investment opportunity
- ✚ Obtain timely permission from the transmission utility for grid connectivity
- ✚ Getting listed in domestic and overseas stock exchange






 Identifying the best option for power sale and executing the arrangement with sufficient safe guards that will satisfy lenders

 To form an association of wind energy companies that will take up industry related issues with Government, local bodies, funding agencies, etc

 Taking the project for CDM benefit

(Clean Development Mechanism)

Criticality

-  Ensuring best O&M practices that would facilitate maximum WTG availability
-  Cordial relationship with local community
-  Remote Monitoring of generation using SCADA system (Supervisory Control And Data Acquisition)
-  Constant monitoring of wind resources in the wind farm
-  Receivables management



ENERGY

Thank You