

# INDIAN WIND INDUSTRY



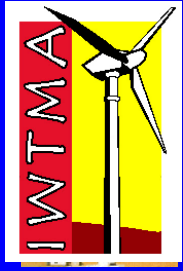
**Presentation**

by

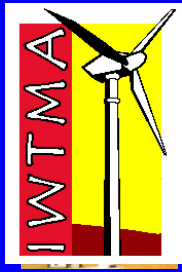
**CHAIRMAN  
IWTMA**

**GWEC**

**MARCH 2005**



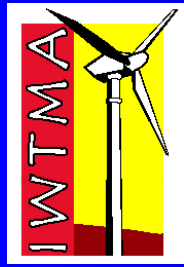
# *India : An Overview*



# *Advantage India*



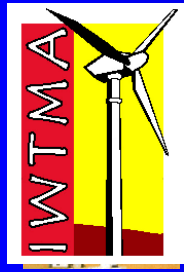
- The largest democracy in the world, politically stable, on a high growth path.
- Cost effective labour.
- Availability of world-class engineering goods and services.
- Well established financial and banking system.
- Time tested legal systems.
- Only country in the world to have a dedicated Ministry of Non-conventional Energy Sources (MNES).
- No prior approval is required for Foreign Direct Investment for wind turbine manufacture.
- Dividends can be repatriated without restrictions.
- Disinvestments can be done with prior permission from Reserve Bank of India (RBI) and disinvestment proceeds can be repatriated.



# *The Indian Power Sector - A Quick Glance*



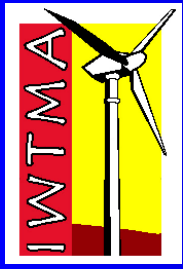
- Per capita electricity consumption : 400 units
- Installed power generation capacity (utilities) : 1,14,000 MW (DEC.2004)
- Overall generating capacity (includes thermal, hydro, nuclear & wind) : 120,000 MW
- Distribution of total installed capacity : 90 % owned by Public Sector  
(60 % : State Government  
30 % : Central Government)  
Rest 10 % is owned by the Private Sector
- Projected installed capacity (2012) : 210,000 MW
- Power generation (2002-03) : 530 billion units
- Energy deficits (Mar 2002) : 7.5 %
- Peak deficit : 12.6 %



# *The Indian Power Sector - Projected Generation*



- The Ministry of Power has proposed to add approximately 100,000 MW by 2012.
- New additions planned :
  - 10th Plan (2002-07) 41,110 MW
  - 11th Plan (2007-12) 58,890 MW
- Break-up of these additions (10th plan) :
  - Central Sector 22,830 MW 55 %
  - State Sector 11,160 MW 27 %
  - Private Sector 7,120 MW 18 %
  - Total 41,110 MW 100 %

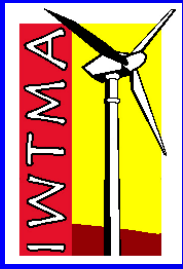


# *Tremendous business potential in India*



<b>Technology</b>	<b>Units</b>	<b>Estimated Potential</b>	<b>Achievements</b>	<b>World Position</b>
Wind Power	MW	45,000	3200 MW	Fifth
Small Hydro power (< 25MW)	MW	15,000	1530 MW	Tenth
Bio-Mass	MW	19,500	628 MW	Fourth
Urban & Industrial Waste	MW	1700	26 MW	-
Solar Photo Voltaic	MW/Sq Km	20	121 MW	Fifth

**Annual turnover of RE industry in India is Approx. One Billion Euro.**

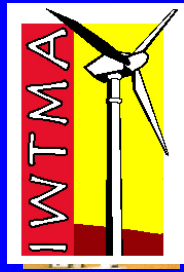


# *Renewable Energy - Indian Scenario*



- Estimated potential 1,00,000 MW.
- Achieved approx. 5000MW (<5%).
- About 85% of total investment from Corporate.
- Growth rate 25% per annum.
- Wind, Solar, Small Hydro and Bio-mass are the major sources of renewable energy.

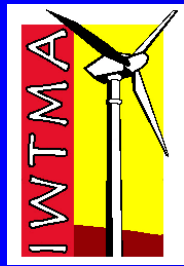
**Tremendous business potential in India**



# *Indian Wind Power Sector – At A Glance*



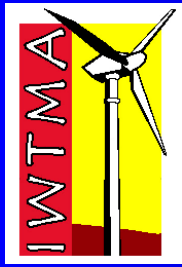
- Gross Wind Power Potential 45,195 MW
- Total Installed Capacity 3180 MW (DEC. 2004)
  - Demonstration Projects 70 MW
  - Commercial 3110 MW
- Additional Target by Indian Government 6,000 MW by 2012  
(Around 750 MW per Annum)
- More than 95% investment is by private sector



## *Growth of Wind Sector in India (MW)*



<b>Year</b>	<b>Capacity</b>	<b>Addition</b>	<b>Growth %</b>
2000-01	1340	173	15
2001-02	1628	288	21
2002-03	1870	242	15
2003-04	2483	615	33
<b>Upto Dec. 2004</b>	<b>3180</b>	<b>697</b>	<b>28 (April to December)</b>



# ***SWOT ANALYSIS - INDUSTRY***



## **1. STRENGTH:-**

- Ability to offer state of the art technology by six large players.
- Annual Market size is around 700 MW – 900 MW.
- Growth in the last three years is phenomenal.
- Industry association i.e. IWTMA is recognised by MNES, IREDA and C-WET.

## **2. WEAKNESS:-**

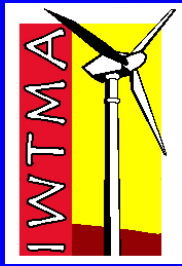
- Less R & D on technology adaptation and innovation.

## **3. OPPORTUNITY:-**

- Fast track growth due to need and necessity of power.
- Encouragement to FDI's to invest in the sector.
- Conducive policy in 7 states.

## **4. THREAT:-**

- Risk factor associated with non uniform state policy.

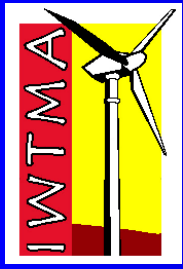


# *Wind Power and Corporates*



- Rising Power tariff of conventional power projects.
- Low Gestation Period.
- Hassle Free Operations and Maintenance.
- Declining cost due to improving technologies.
- Cost per Kwh is the lowest on full life cycle basis.
- IRRs in the range of 10% - 25% for Investments in Wind Power generation.
- Green power which qualifies generally for Carbon Credits.
- Accelerated Depreciation of 80%.

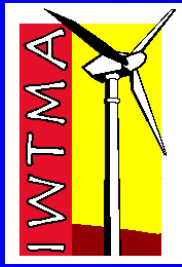
**Corporate has a major role to play and tap the potential**



# *Initiatives for Further Development of Wind Power In India*



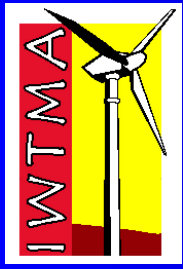
- Mandatory purchase of Wind Power i.e. green power by utilities.
- Cess on conventional power to fund Renewable Energy as a whole and wind power in particular.
- Creation of a National Renewable Energy Act / Legislation.
- Long term PPA's.
- Customs duty to be abolished on renewable energy equipments.
- Priority sector status for financing of Wind Power projects.
- Encourage FDI in Wind Power projects.
- Set up a mechanism for availing carbon credits.



# *The Power Market in India – The Future*



- The growth of the Power Market would take place through:
  - Differentiation in business models of traders on the basis of geographical reach.
  - Increase in the depth or width of services or variety of products that are made available to customers.
    - Needs to evolve from providing just physical delivery of electricity to better service packages that add value to the business of its customers, on either side of the value chain.
    - Through better product packages, which reduce the operational or financial risks of investors.



# *The Way Ahead*

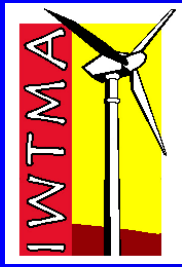


The need of the hour is: -

□ To create an integrated energy policy and regulatory framework that addresses renewables as a whole and Wind Power in particular and such a policy framework should allow the country to utilize its energy assets to the optimum level. It should :-

- also allow organizations to derive synergies in various parts of the value chain that make up the presently disparate parts of the sector.
- and it should also pave the way to create a holistic energy security framework for the country.

□ It is therefore, necessary that we wake up to the fact that it is only by providing for a seamlessly integrated and commercially vibrant energy market in the country that energy security in the real sense of the term would be provided to all.

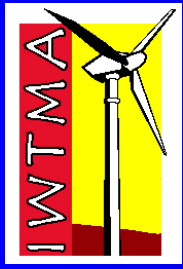


# *The Way Ahead*



- Presently, the prices in the power market do not necessarily follow the prices in the fuel / gas markets.
  - We lack strong and logical inter-linkages:
    - for example, a typical gas producer or buying entity does not have options to choose whether their product can be sold as such, or after processing to the next step in the value chain i.e. power generation.
    - Hedging of risks therefore arises from a view of commodities and services on a stand-alone basis.
    - Cross-commodity risk management gives more efficient options to all participants in the market.
- To gain efficiencies in such an illiquid / inefficient market, the ‘Total Energy Company’ would arise.

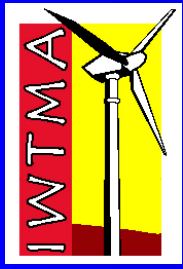
These few entities would try to position themselves as ‘source to destination’ energy companies by either integrating backwards or forwards and try to internally manage the risks across the sectors.



# *Tasks Ahead*

## *Sustainable Policy Framework*

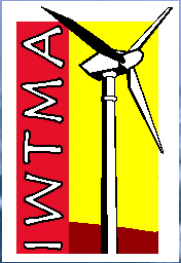
- Energy Security.
- Conservation of valuable foreign exchange.
- Preservation of our environment.
- Foreign Exchange Earnings through Carbon Credits.
- Huge potential for export of Renewable Energy equipments.



# *India Shining*



- Indian Economy on a resurgent mode.
- GDP growth of 8.2 % in 2003-04.
- Banks now funding projects at interest rates of 9%.
- Industry on an upbeat mood - New investments in automobile, steel and power.
- Infrastructure development projects on high gear.



**THANK YOU**