Market Distortations and Barriers Affecting Wind Development in India

Wind India 2006,
Aug.23

- Joseph Chaly
  Director Marketing

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Agenda

- Global Wind Installation
- Indian Scenario
- Installation –State wise
- Market Segments - India
- Market Barriers
- The Way Forward

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Global Market Development- Top 10 Countries

Country	2003	2004	2005	Share %	Cum. Share %
USA	1,687	389	**2,431**	**21.3%**	**21%**
Germany	2,674	2,054	**1,808**	**15.8%**	**37%**
Spain	1,377	2,064	**1,764**	**15.5%**	**53%**
India	423	875	**1,253**	**11.0%**	**64%**
Portugal	107	274	**502**	**4.4%**	**68%**
P.R. China	98	198	**498**	**4.4%**	**72%**
Italy	116	357	**452**	**4.0%**	**76%**
UK	195	253	**447**	**3.9%**	**80%**
France	91	138	**389**	**3.4%**	**84%**
Australia	50	182	**296**	**2.6%**	**86%**
Total	**6,818**	**6,784**	**9,839**		
Percent of World	81.7%	83.2%	86.3%		

Source: BTM Consult ApS - March 2006

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Cumulative Installation- Global Top Ten As On End 2005

Country	**Installed MW**
Germany	18445
Spain	10027
USA	9181
India	**4253**
Denmark	3087
Italy	1713
UK	1336
China	1264
Netherlands	1221
Japan	1159
Total	**51686**

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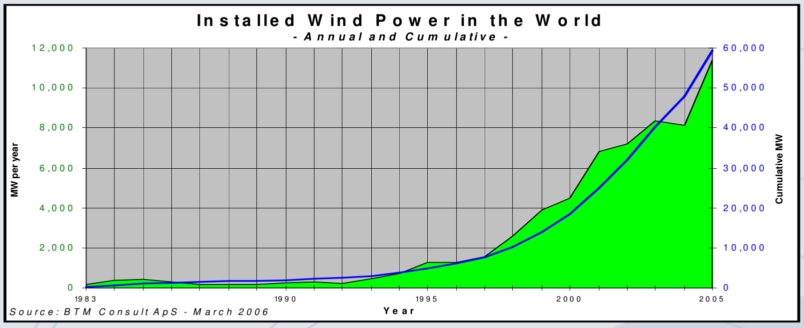
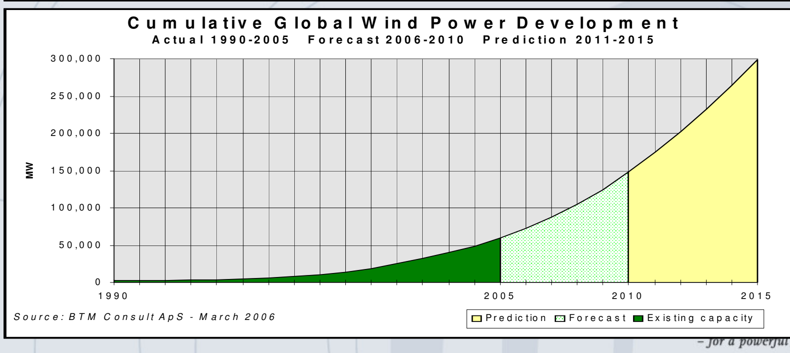
Global Scenario





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Indian Scenario – Power Mix

Fuel		MW	%age
Total Thermal		**83,772**	**66.0**
	Coal	68,988	54.4
	Gas	13,582	10.7
	Oil	1,202	0.09
Hydro		32,976	26.0
Nuclear		3,900	3.1
Renewable		6,191	4.9
Total		**1,26,839**	

7 www.powermin.gov.in, jul 06

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Indian Scenario – Installed Capacity State wise

Indian statewide wind power potential and installed capacity as on March 2006 : Cumulative Installations – 5340.7 MW

	Installed	Gross Potential	Tech. Potential
Tamilnadu	: 2893	3050	1880
Maharastra	: 1001	3650	3040
Karnataka	: 584	6620	1180
Rajasthan	: 359	5400	910
Gujarat	: 338	9675	1780
Andra Pradesh	: 121	8275	1920
Madhya Pradesh	: 40	5500	845
Kerala	: 2	875	605
West Bengal	: 2.7	450	450

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Tariff structure

State	Tariff Wind	Duration of PPA
Rajasthan	Rs3.25 Esc@2% Rs 3.97 from 11th to 20th year	10 yrs
MP	Rs 3.97 in 1st year reducing to 3.3.46 in 4th year and 3.3 from 5th to 20th year	20 yrs
Gujarat	Rs.3.37	20 yrs
Maharashtra	Rs 3.50 Esc @15paise	13 yrs
AP	Rs. 3.37	10 yrs
Karnataka	Rs. 3.40	10 yrs
TN	Rs. 2.90	20 yrs
Kerala	Rs.3.14	20 yrs

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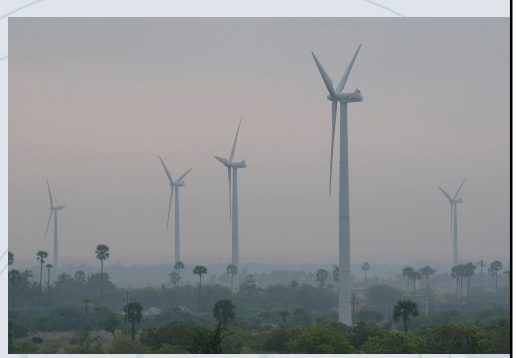
Where we Operate – Segments

- *Captive Power Projects*
- *Small IPPs by Indian Companies*
- *High net Worth Individuals*
- *International wind farm developers*



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Market Barriers

•***Infrastructure***

- *Evacuation Infrastructure- Substations and Grid network*
- *Civil Infrastructure – Road Network*

•***Duties***

- *High Import Duty on Components*
- *Excise Duty on Raw Materials*

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Market Barriers

Contd.

•***Policy Framework***

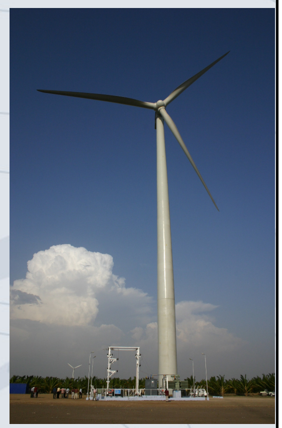
- *Unfair Comparison with Conventional Power*
- *Conditions in PPA unacceptable for International investors*

•***Funding Issues***

- Absence of Project Financing
- *High Interest Rates for Balance Sheet Funding*

• ***Mindsets***

- *Mind set about Infirm Power*
- "Main stream energy Mind Set"



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The Way Forward…

- Integration into Mainstream Power Portfolio
- Integration of Grid Network On a National Level
- Setting up of Evacuation Infrastructure- State Level
- Support to Develop Road Network Into the Wind Farm Areas
- Review Power Purchase Agreements
- National level Policy Framework and Legislation for Renewables
- Payment guarantees

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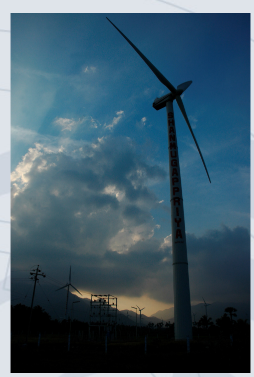
What Lies Ahead …

- **Stable and favorable policy regime with focus on Renewables.**
- **Project Financing Mechanisms**
- **Bankable Power Purchase Agreements.**
- **Foreign Direct Investments**



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Corporate office and Assembly unit

298, Old Mahabalipuram Road,

Sholinganallur, Chennai – 600119, India.

Thank You

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