

# Global Summit on Sustainable Development & Climate Change

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Powering the future

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September 24 & 25, 2009

The Taj Mahal Hotel, Man Singh Road, New Delhi



- **Context**

- **Wind Energy - Opportunities**

- Largest growing renewable energy source
- Large untapped potential
- Cost Competitive with most other sources of Energy

- **Current Challenges**

- Demand for Wind Energy postponed rather than lost
- Freeze in project financing markets post global meltdown

- **Future Growth Drivers**

- Regulatory Environment
- Increasing energy needs

- **Suzlon's contribution in generating green energy**



**Ever increasing energy needs along with rising CO2 emissions have become key challenge for the world today**



**Renewables and energy efficiency have emerged as the key answer to the above problem.**



**Wind with its ability to provide scale, quick installation, and proven technology seems to be the best bet among non-hydro Renewable Energy Sources**

**Sound Financial markets and political support emerge as the two most important fulcrums for our transition to cleaner energy sources**



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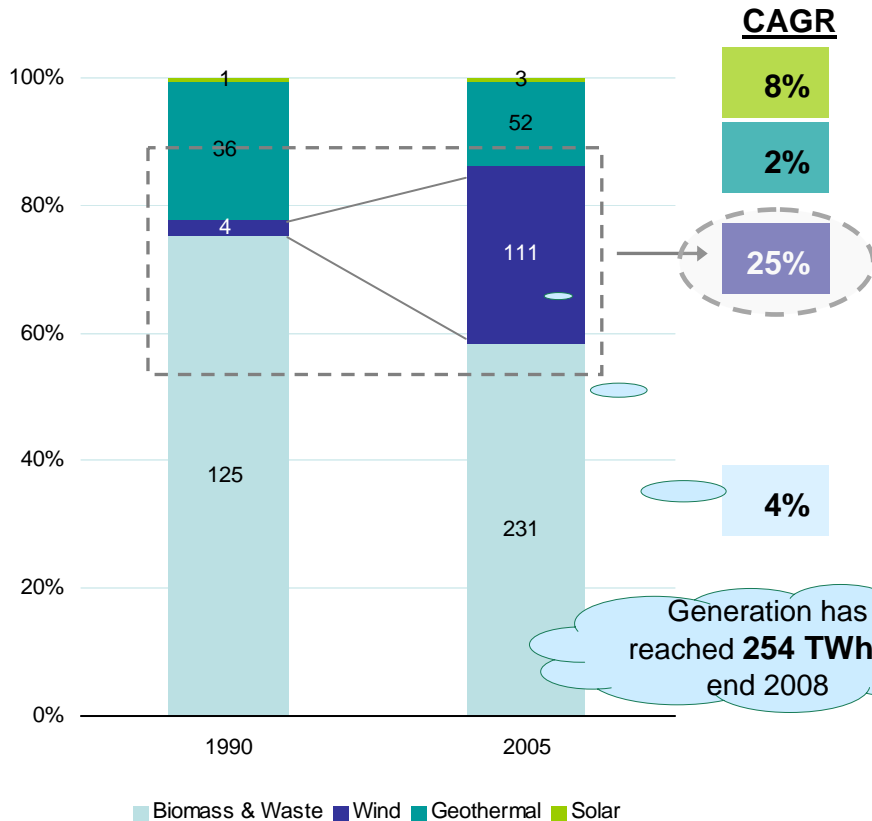
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# Wind – A promising renewable energy source

## Fastest growing renewable energy source (a)



Source IEA WEO 2007

**Notes**

(a) Generation in TWh

## Potential to power the future

### Critical Success Parameters

### Wind Energy Status

**Cost Competitiveness**

✓  
(Median cost - EUR 65 / MWh)

**Established Base**

✓  
(Total of 122 GW capacity by 2008 end)

**Resource Availability**

✓  
(72 TW potential estimated globally at 80m hub height)

**Magnitude**

✓  
(5 times present global energy usage, 7 times electricity usage)

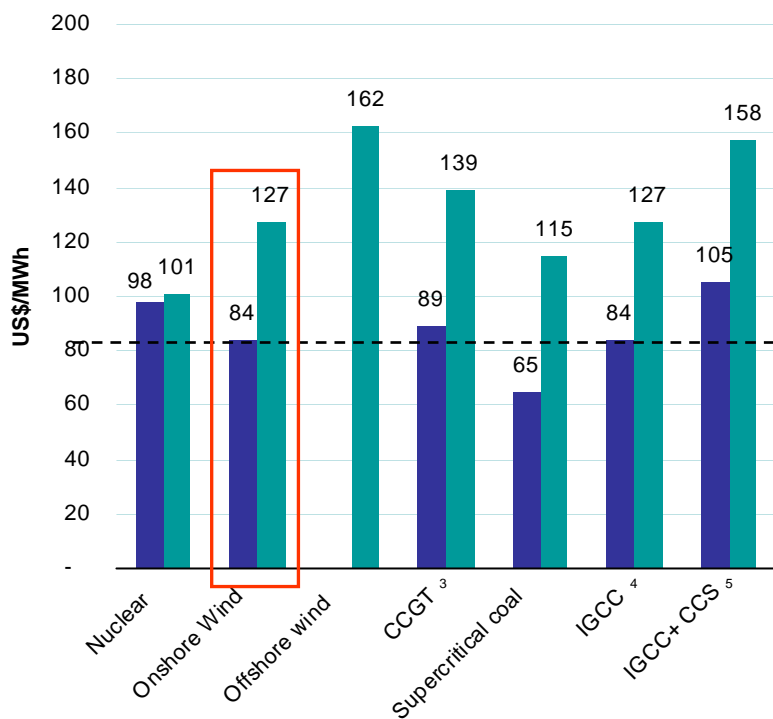
Source BTM March 2009; Journal of Geophysical Research, 2005 : Stanford University; Wind Power Monthly – January '09; GWEC



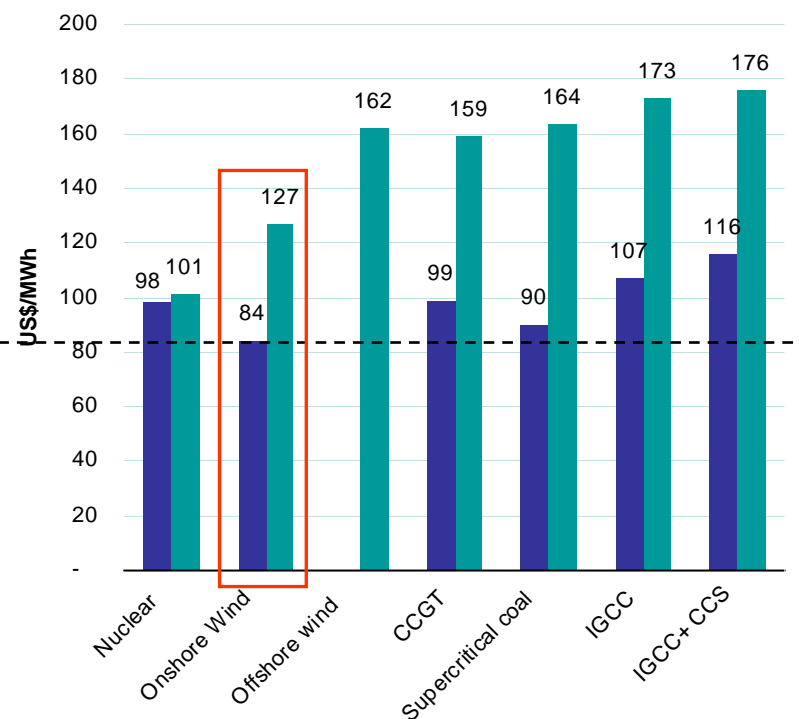
# Wind energy is cost competitive with fossil fuels and out performs other renewables

## Cost competitiveness of wind

### Base generation<sup>1</sup>



### Total costs (including carbon cost<sup>2</sup>)



■ USA ■ Europe

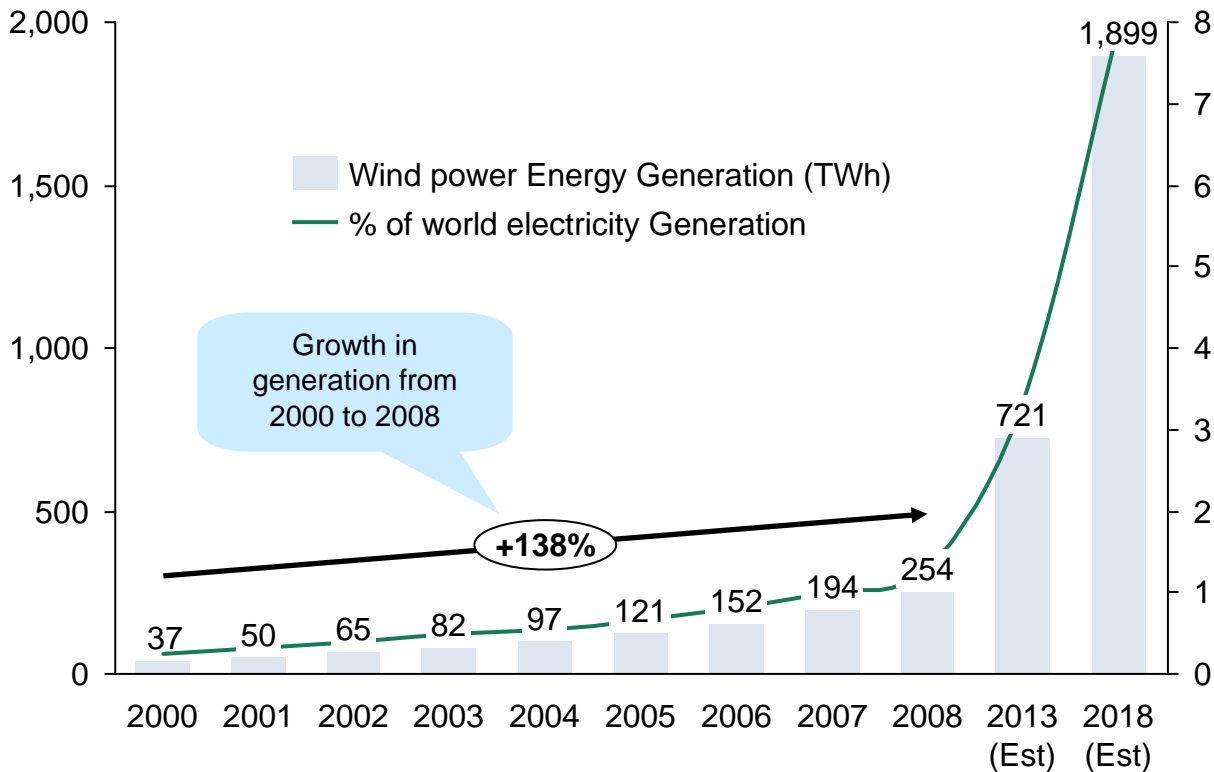
■ USA ■ Europe

Source Emerging Energy Research July 2008

- Notes**
- <sup>1</sup> Includes capital cost, fuel cost and O&M
  - <sup>2</sup> Assuming US\$30/ ton cost of carbon in USA and US\$60/ ton cost of carbon in Europe
  - <sup>3</sup> Combined Cycle Gas Turbine
  - <sup>4</sup> Integrated Gasification Combined Cycle
  - <sup>5</sup> Integrated Gasification Combined Cycle + Carbon Capture and Storage
- Costs in Europe have been converted from €/MWh to US\$/MWh (1€ = 1.53 US\$)



# Wind's share in global energy output can increase many fold over next decade

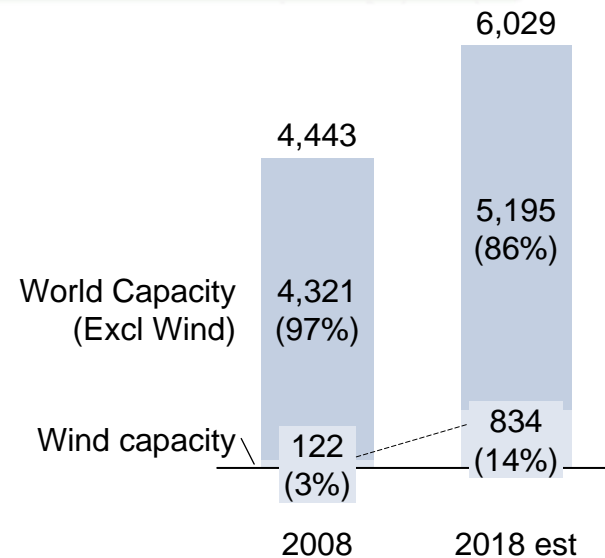


Source: BTM Consult ApS 2009

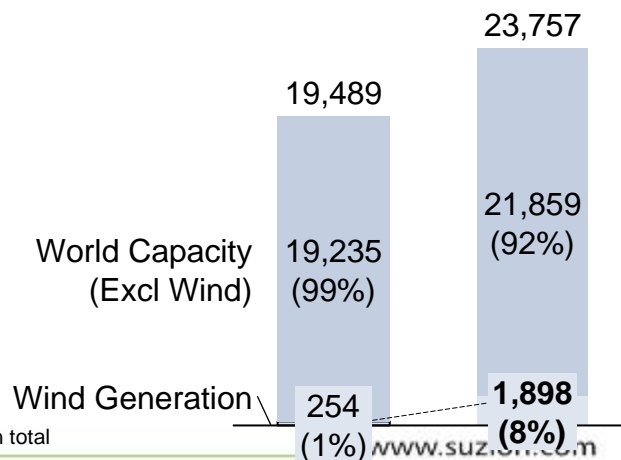
**Share of energy generation from wind is expected to grow from 1.3% in 2008 to 8% by 2018**

Bracket suggests share of wind energy in total

## Global Installed Capacity (GW)



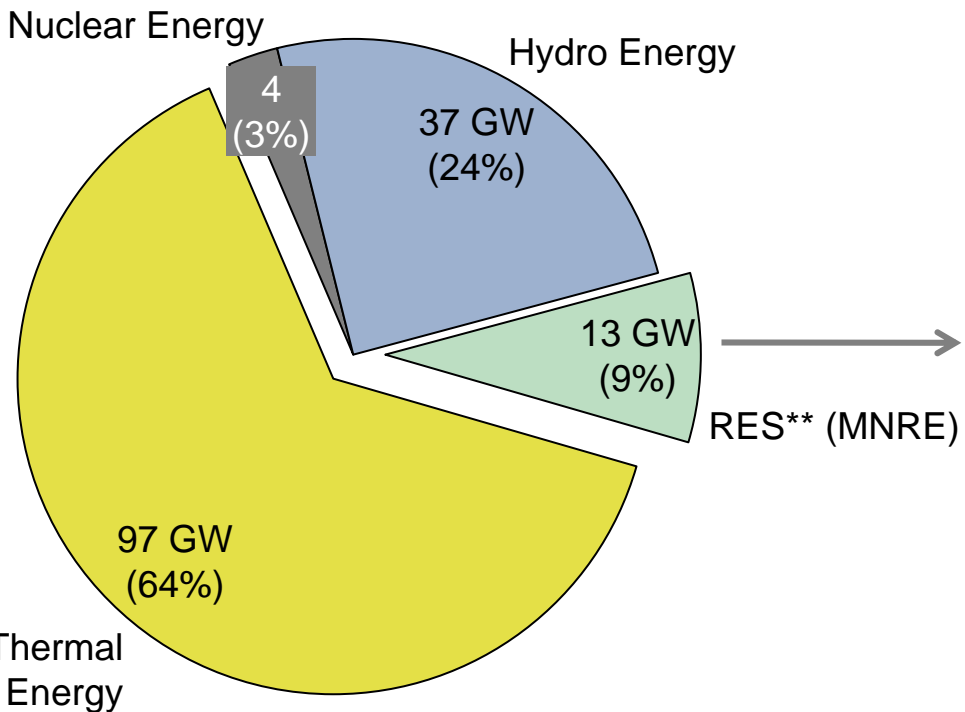
## Global Energy Generation (TWh)



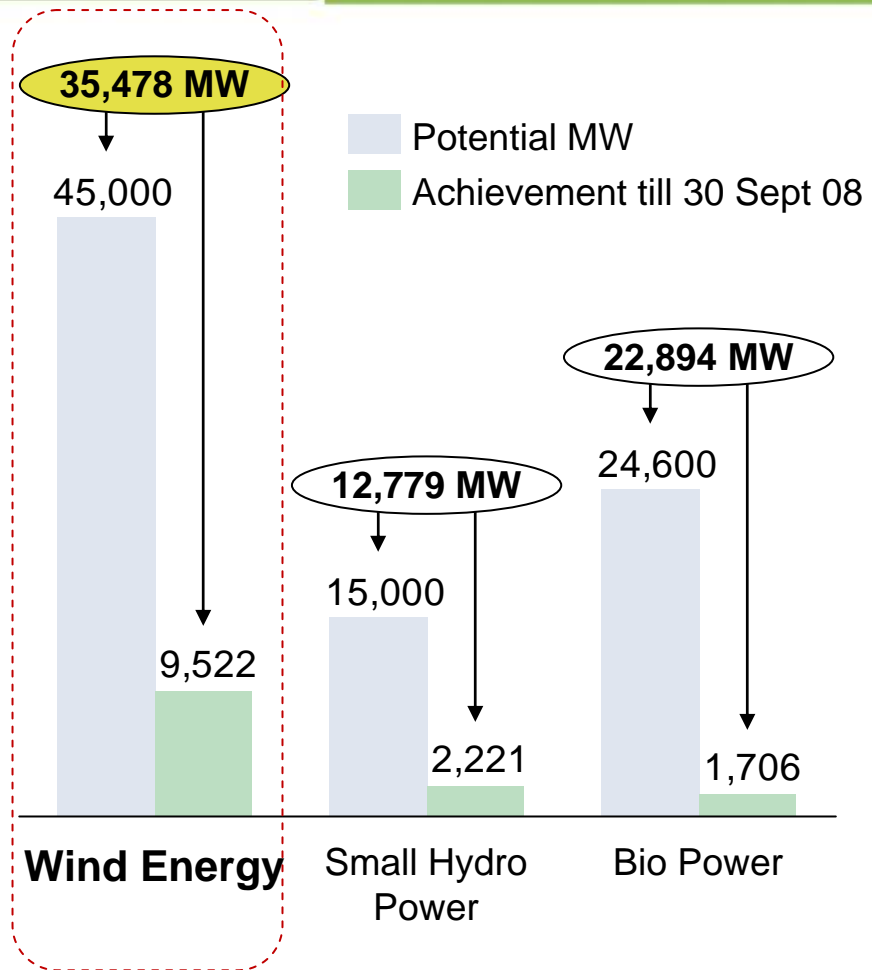


# Wind offers the highest potential among all other renewable energy sources in India

**Installed Capacity 151 GW as on 31<sup>st</sup> July 2009**



\*\* - RES = Renewable Energy Sources (Small Hydro, Biomass gasifier, Bio mass power, Urban & Industrial Water power and wind energy)



Source: MNES

India achieved 1.96% of CO2 reduction with Suzlon contributing 0.5% of the total in 2008

Wind energy can contribute another 35 GW of electricity base to the growing need of India's electricity needs



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# Global meltdown has created some short term challenges for the Wind industry

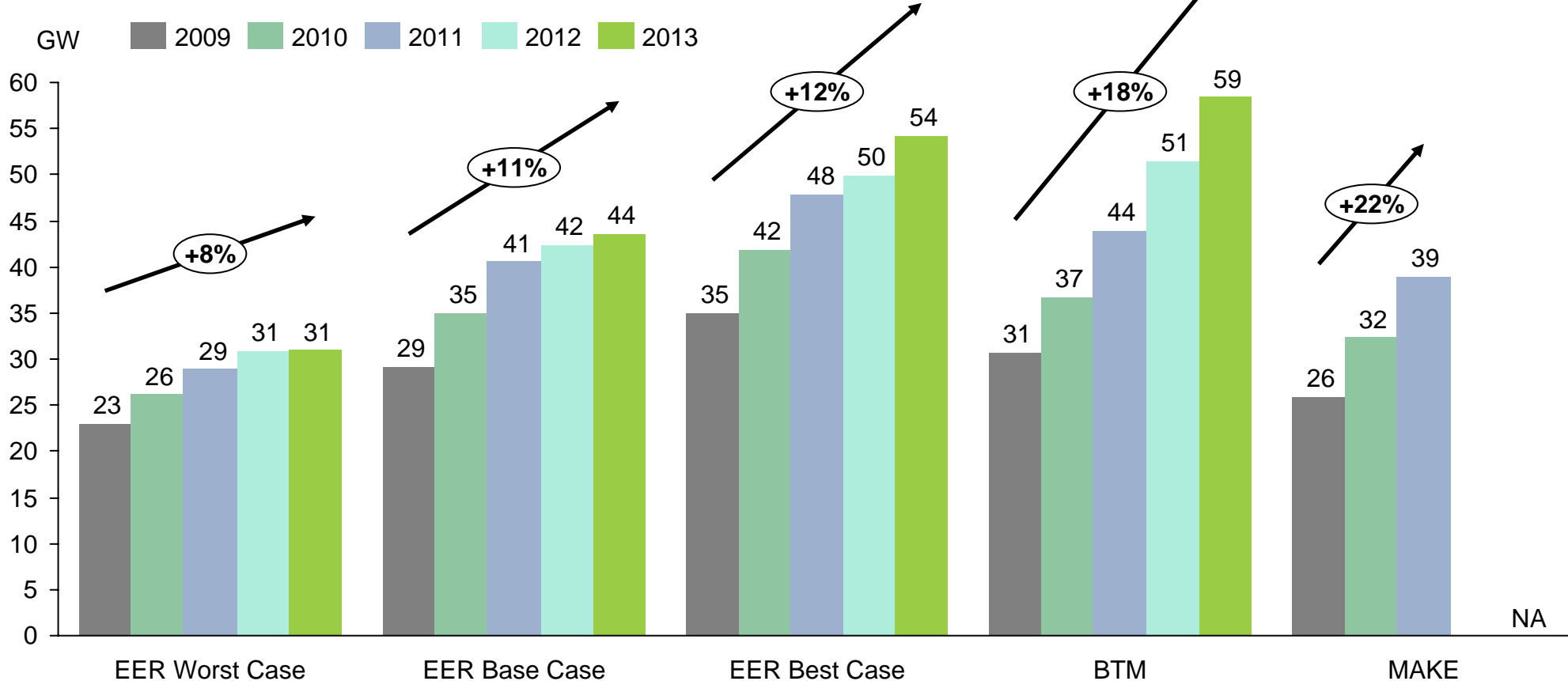
- **New order booking has slowed down as capital availability dries up**
  - The average order intake per month prior to the global slow down was c. 4,000 MW, which has dropped to c. 1,800 MW post Q2 2008
- **Weak financing markets is at the root of slow down**
  - Lower solvency, Lower risk tolerance, Higher interest rates for capital expansion, Difficulties in project/vendor financing
  - Project delays and cancellations due to lack of available capital to finance new project development
  - Wind projects are valued with less aggressive assumptions thus projects with relatively low quality are no longer financeable
  - Q1 asset financing is 64% down as compared to Q1 2008 and 65% down on a four quarter rolling average basis



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# Industry experts are bullish about wind energy future

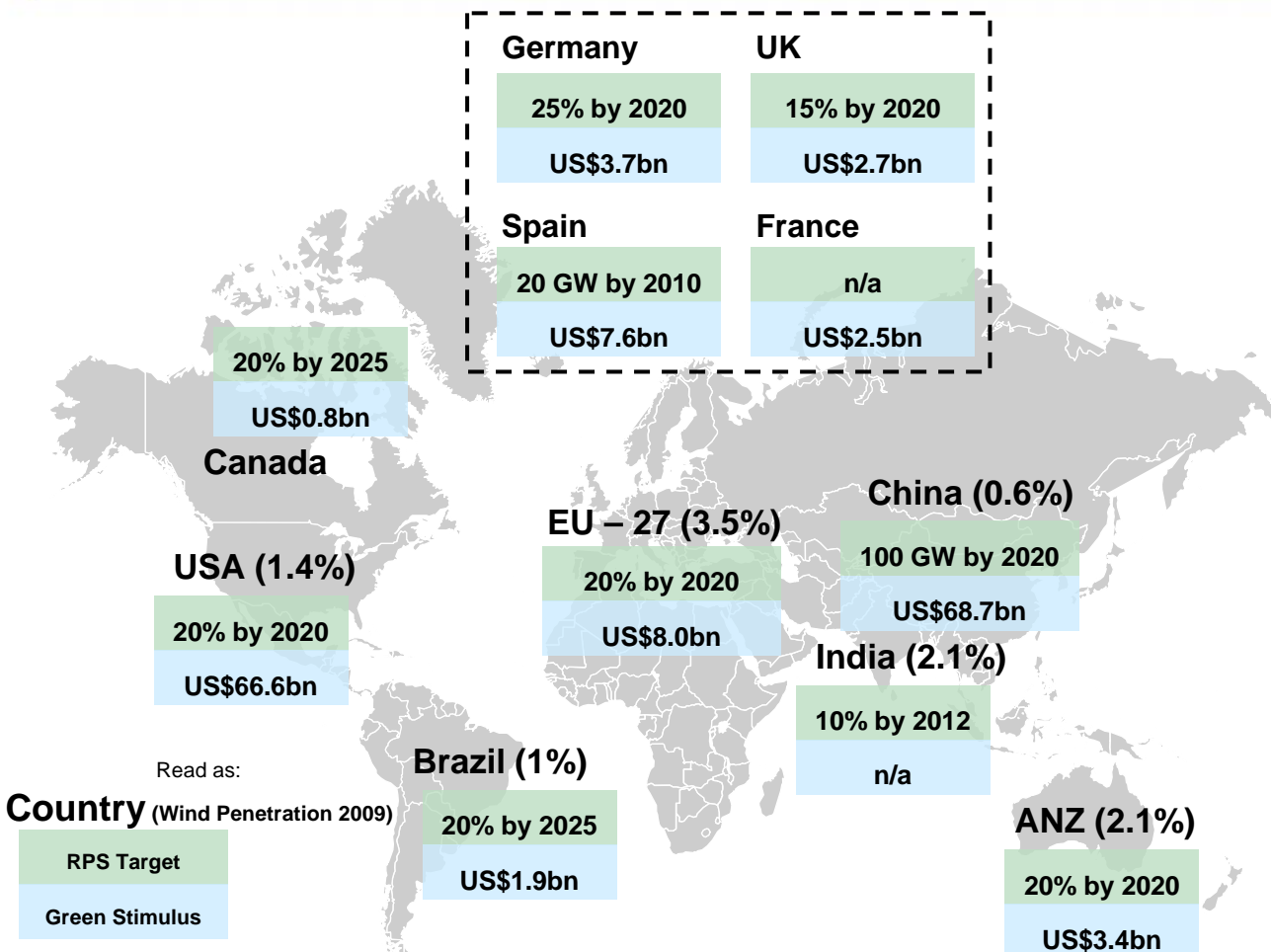
## Wind energy presents a long term growth opportunity



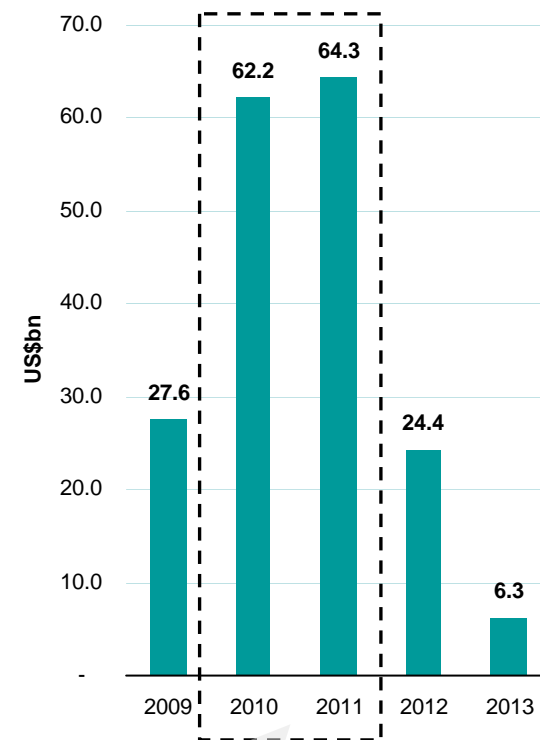
Source Emerging Energy Research June 2009, BTM March 2009, MAKE Consulting June 2009

**While the total electricity generation capacity is expected to grow at ~3%, wind based capacities are expected to grow at 15-18% for next five years**

# Regulatory Environment will act as a primary driver of demand



**Yearly spending of stimulus packages**



**Maximum stimulus impact to be realized in 2010 and 2011**

Source BTM April 2009, New Energy Finance July 2009, JM Financial Broker Research June 2009

**Total amount announced by 12 economies amount to US\$185bn; Governments' focus on meeting renewable energy commitments is still undiluted**

Source New Energy Finance July 2009



# Recent positive developments

## India

- Rajasthan revised from Rs 3.60 – 3.89 per kWh to Rs 4.28 – 4.50 per kWh
- Follows recent favourable policy announcements from Gujarat (Rs 3.5), Tamil Nadu (Rs 3.4) and Andhra Pradesh (Rs 3.5)

## China

- New tariffs set at CNY 0.51- 0.61 per kWh
- New feed-in-tariff will replace existing public bidding process

## USA

- US Stimulus package: Guidelines for cash grant in lieu of 30% ITC (Section 1603) published
- Cash grants announced for US\$500 mn in lieu of PTCs including \$295mn to Iberdrola and \$48mn to Horizon

## ANZ

- MRET aims at 20% renewable energy penetration by 2020

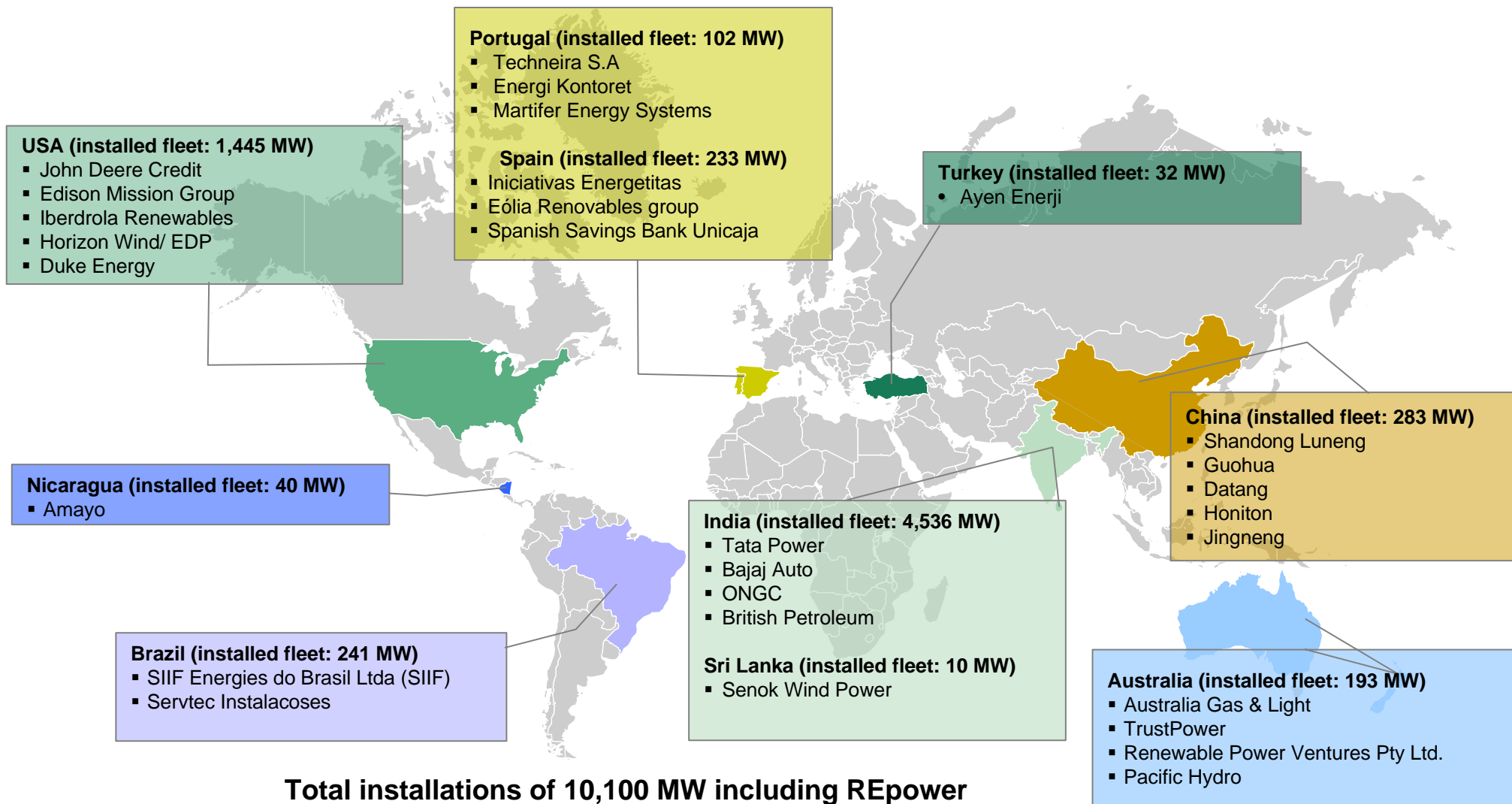
## Brazil

- PROINFA II targets 3,300 MW from renewables (Auction opens in Nov end)
- BTM Consult expects 2,000 MW wind installation in 5 years



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# Suzlon accounts for ~8% of world wind energy installations



<sup>1</sup> As on June 2009



**Thank You**