Why R&D ?

- Requirements specific to India
- Uniqueness of Indian wind regimes and grid conditions
- To lower costs and make better use the wind resource, ENERGY SECURITY
- Research Labs are 10-15 years behind industry

- Head of *Risoe*

Wind Resource/Micrositing

- Quick Resource Mapping of the entire country through advanced modeling techniques
- Integrate information on roads, grid, related information through GIS
- Greater importance on Micrositing to improve performance

Forecasting

- High penetration areas – TN, Maharashtra
- Information needed by the grid operator for better grid planning
- Need to involve wind farm operators, meteorology people,
- Need to start urgently
  - Trial and error
  - Long learning curve
  - Cannot use models developed in the West as it is

Legislation/Policy

- Production/Generation linked incentives like the Production Tax Credit (PTC)
- Clean Energy Fund (Example of Maharashtra)
- Renewable Purchase Obligation / Renewable Portfolio Standards / Tradable Certificates / Target Setting
- Integrated Long-term Policy Framework
- RE Law (*Need of the hour*)

Grid Issues

- Integration
- Grid Management, short-term planning
- Power Evacuation
- Power Quality
- Technical Potential

Turbine, O&M, Projects

- Manufacturing; Indigenization
- Materials
- In-house Design
- Low Wind Regime Turbine
- Recyclability
- Best Practices in O&M in India
- Logistics, Roads

Offshore

- Urgent need for Wind Resource Assessment in India
- Study Feasible Potential in India and identify possible sites
- Put in place primary guidelines

Conclusions

- Urgent need for R&D on many fronts considering specific Indian requirements and conditions
- Public-Private Partnerships for specific R&D projects
- Effective use of Civil Society, NGOs, Academia, Industry for moving ahead