

# **3<sup>rd</sup> Quantum Leap in Wind Workshop**

**What will it take to accelerate wind development in Asia and  
the Pacific?**

**4 – 5 June 2012, ADB Headquarters, Manila, Philippines**

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# Asia: Leading the World in Wind

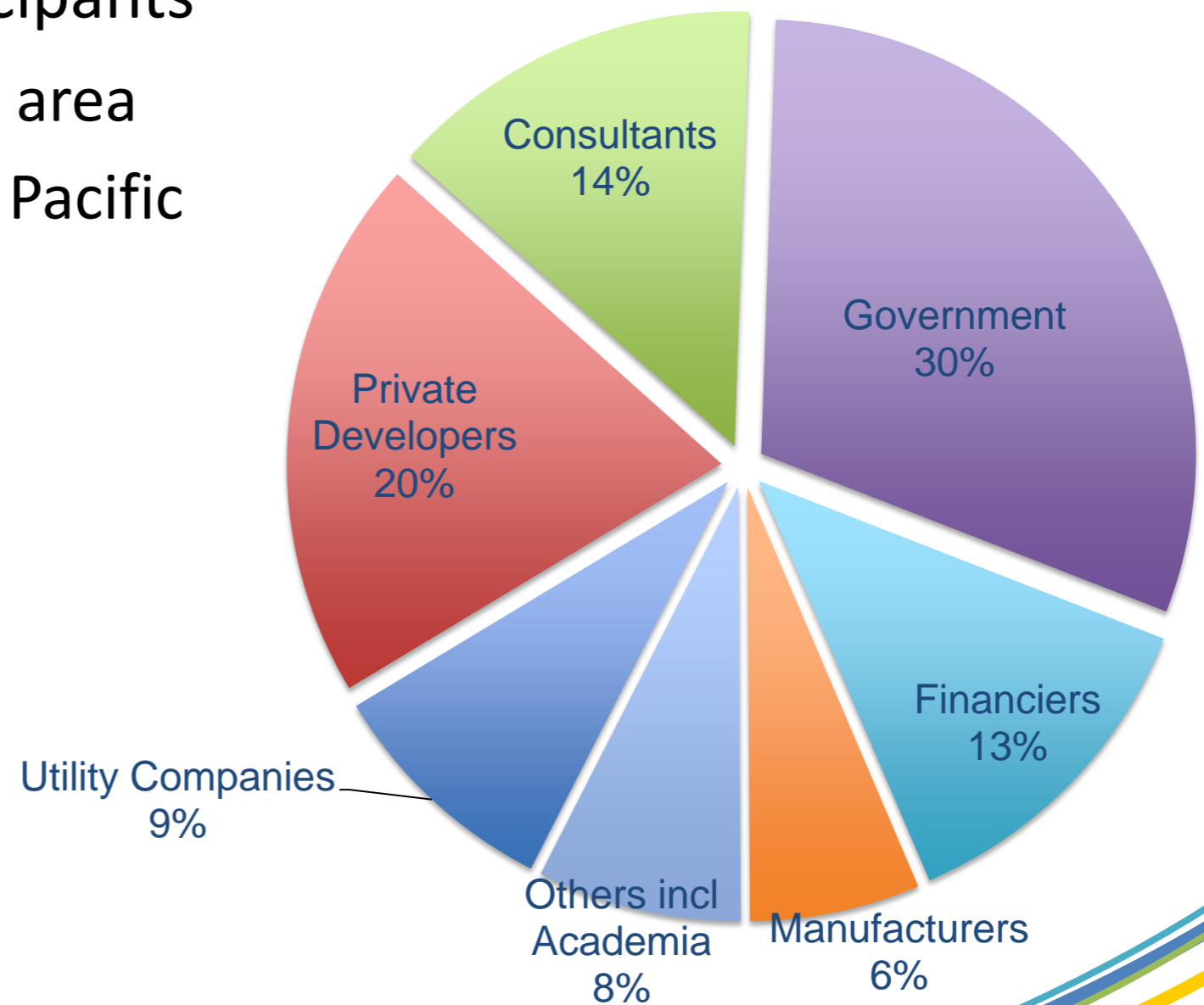
- Nobody predicted the rapid rise of wind installation in Asia
- Asia is hungry for energy!
- Current projections for growth are likely to be under-estimated

# Workshop Overview

- **Day 1** Over 120 Participants
  - Six Case Studies by topic area
  - Lessons for Asia and the Pacific
- **Day 2**
  - Country Updates
  - Panel Discussion



Profile of Workshop Participants



# Case Study: Sri Lanka

- Pioneer Wind Power Project – 20 MW
- Attractive tariff:
  - 19.5 cents USD
- Key difficulties:
  - raising debt funds
  - Permit process: obtaining 165 permits/licenses from 24 agencies!!!
  - Project execution 10 months only after PPA!
- Future outlook:
  - Private sector ready to develop 300-plus MW in Sri Lanka
  - Requires government support
  - Grid issues need to be resolved ASAP
  - Future of wind energy in the long term depends on PPA with India



**Manjula Perera**  
CEO, Wind Force

# Case Study: Mongolia

- Pioneer Wind Power Project
  - 50 MW, late 2012
- Modest tariff
  - 9.5 cents USD
- Key Delays:
  - PPA & financing negotiation took three years
  - Infrastructure hurdles
  - Building stakeholder and community awareness and support
- Project Goal:
  - High quality wind project and beacon for future projects
- Future outlook:
  - Four other wind energy projects in the pipeline
  - Future of wind energy in the long term depends on grid flexibility (hydro) and PPA with China



**Sukhbaatar Tsegmid**  
Senior Advisor, Newcom LLC

# Case Study: Philippines

- Pioneer Wind Power Project
  - 33 MW, DANIDA support
  - First large scale wind project in SE Asia
- Key Risks and Delays:
  - Negotiations with local power cooperative
  - Initial PPA annulled, 2 year negotiation process
  - National Policies: FIT, RPS
  - Wind power currently sold on spot market
- Future outlook
  - Wind developments stalled since first project (2005)
  - **56** projects worth **1700 MW** awaiting FIT approval



Poch Ambrosio  
Corporate Secretary, NorthWind Power

# Case Study: Pakistan

- Pioneer Wind Power Project – 50 MW
- Attractive tariff
  - Cost-plus with up to 17% ROE
  - Government bears wind and grid risk
- Key risks:
  - Security and Financing
- Future outlook:
  - Abundant wind resource
  - Pakistan has an Energy Deficit
  - Challenging political and financing environment
  - 250MW+ projects in pipeline



**Jens Olsen**  
CEO, Nordex China

# Case Study: India

- 22.5MW project in 1999
  - One of largest wind projects in the region at the time
- Wind resource assessment:
  - Data from government's (CWET) wind mast
- Enabling factors:
  - Attractive tax incentives (accelerated depreciation, deferred sales tax)
  - Standard PPAs for wind are available
- Key points of case-study
  - Achieved 20-25% increase in operational efficiency
  - Post-installation Fine-tuning and Optimization of wind plant, balance-of-plant and operations are key to achieving higher wind energy output



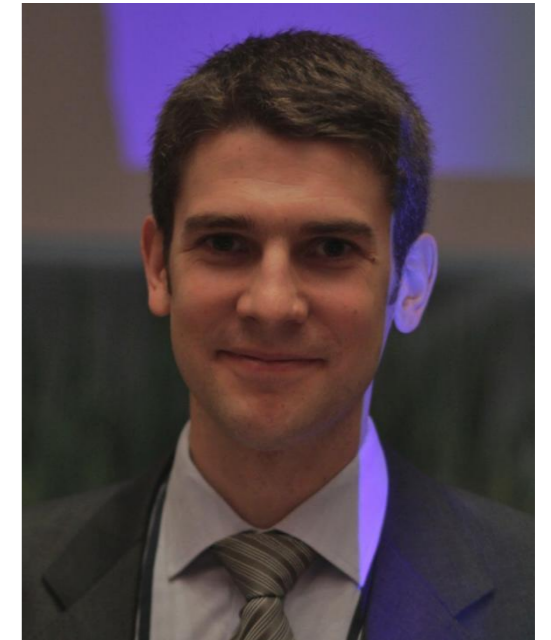
**S.Lakshmanan**  
Director-Technical, Windward Tech



# Case Study: Thailand

- Pioneer Wind Power Project

- 207MW wind project despite lower wind conditions
- Turbine capacity 2.3MW
- Community relations fostered early with local
- compensation mechanisms and visits to demo sites



**Phil Napier-Moore**  
Lead Energy Advisor, Mott MacDonald

- Enabling factor:

- Mature project finance market for independent power producers (competition to lend)

- Key difficulties:

- Developers assume wind and grid availability risks
- Lack of policy on land use for wind

# Key Points from Day 1

- Hope
  - Five out of 6 case studies were Pioneer wind projects – they have paved the way for wind development in Asia
- Uncertainty
  - Sustainable development of wind projects require improved, long-term policies. Example: Philippines, Sri Lanka
- High price of failure
  - Pioneer wind projects showcase the potential of wind energy
  - Success is imperative to ensure smoother road ahead
- Technology is the straightforward part
  - “People” & “policy” factors present the biggest holdups to wind projects
  - Negotiations, processes, public awareness

# Country Updates

Mongolia	Progress despite low FIT
Philippines	Lack of FIT & RPS policies have stalled development
Sri Lanka	Prospect of government competing with private sector
Vietnam	Low FIT set in order to attract the best, most efficient wind projects
Bangladesh	No FIT in place, Gov steps in when no private sector takers for tenders
Thailand	Current focus on harnessing low speed and off-shore wind
Pakistan	Tariff is cost plus and 17% ROE, but moving towards FIT regime
Timor-Leste	Abundant wind resource on mountain tops, Land use a key problem
Fiji	Collapsible turbines, but low operational efficiency
Afghanistan	Security remains greatest issue for developers despite gov guarantees
India	200MW demonstration off-shore wind plants planned, 6 month turnkey projects available
China	Primary constraint is grid limitation, curtailment is 17 - 25% in some grids

# Key Points from Day 2

- Feed-in-Tariffs:
  - Different components, should be seen in the context of the “total package”
  - Countries need time to arrive at the appropriate FIT levels
  - Recommendation for ADB to publish apples-to-apples comparison of wind energy tariffs
- Grid interconnection and ability to absorb variable wind energy
  - Key problem for both large and small scale wind development
  - ADB assistance in grid interconnection studies requested
- Land use:
  - Land acquisition has been an issue in almost all countries
  - Key source of project delays and abandonment

**“Asia is energy hungry”**

**“Asia is the world leader in wind energy”**



**“All predictions about wind energy have been proved wrong”**

**“There is a war for renewable energy talent in Asia”**

**“Dealing with technology is the easy part, dealing with people is the challenge”**

**“Capex costs have reduced by 40% in only 4 years”**

**“Wind energy is more expensive than conventional energy is a myth”**

