



Wind Energy Asian Regional Outlook

ADB-IEA Workshop

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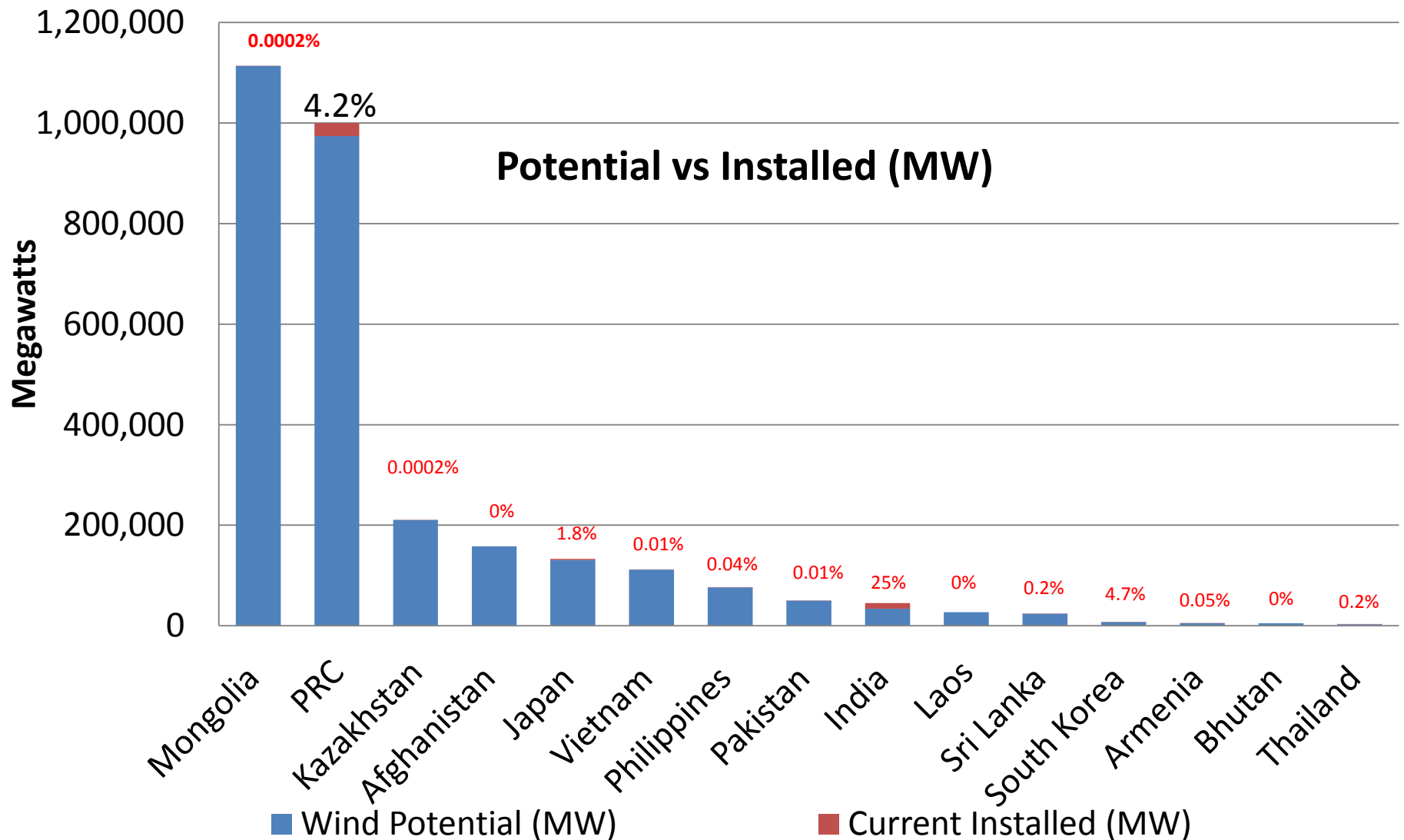


Outline

- Quantum Leap in Wind (QLW) Technical Assistance – Introduction
- Regional Status
 - Summary of 5 Case Studies
 - Country Updates from 12 Countries
 - Key take-away
- Wind Futures Report



Asia Wind Potential



Wind energy worldwide to provide up to 10% of electricity demand by 2020



ADB Quantum Leap in Wind (QLW) in Asia and the Pacific

Objectives:

1. Access to clean and affordable energy

- Reach more than 5 million people
- Target 1 GW wind in Asia (excluding PRC and India) in 5 years
- 2 million tons per year reduction in CO₂

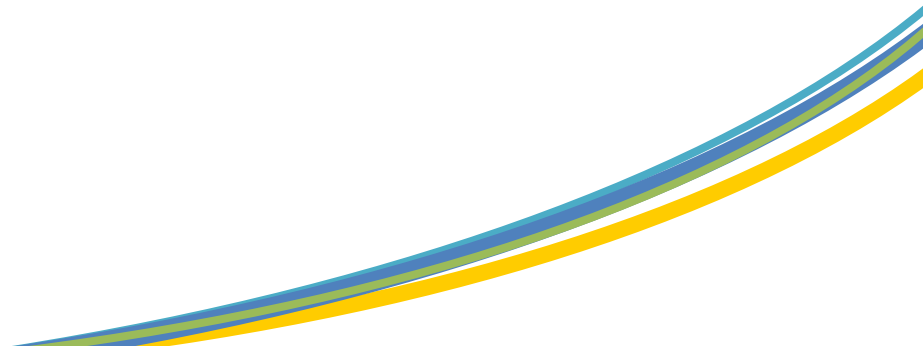
2. Promote and build capacity for wind and other renewable energy

- Expanding to Asia Pacific market will encourage competition and technological innovation



QLW - MONGOLIA, PHILIPPINES, SRI LANKA, VIETNAM

DURATION: 3 Years, 2012-2014,
Components

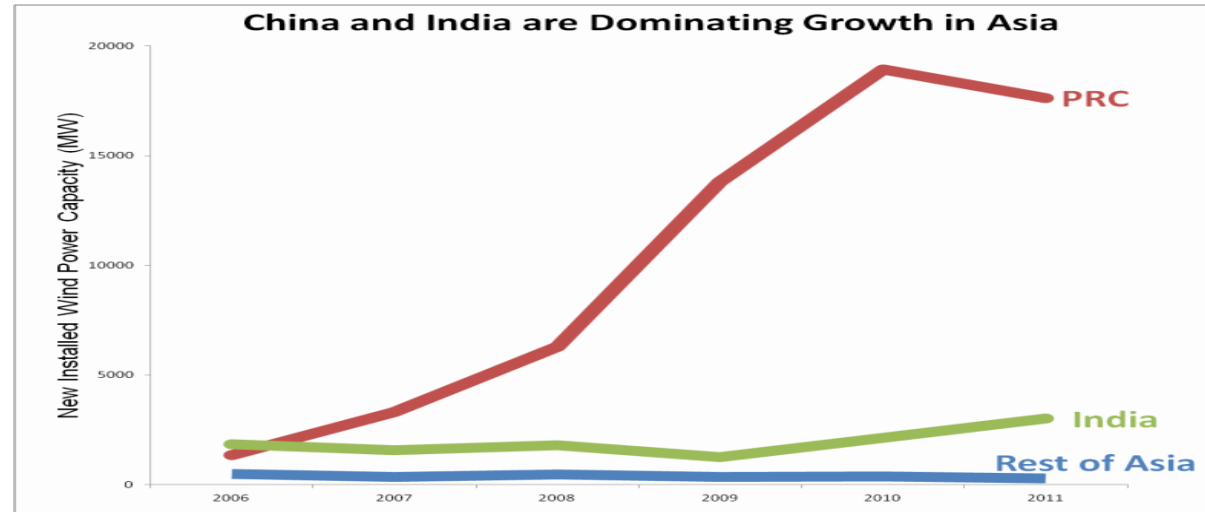
1. **Wind Energy Development Roadmaps (200K):** country-level roadmaps in partnership with stakeholders
 2. **Wind Resource Assessment (900K):** ground-based wind measurements for long term reference
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QLW Components (Cont...)


3. **Knowledge Management and Capacity Building (500K):** in-country, regional and international workshops to share lessons and good cases of wind development, including technical courses
4. **Pre-feasibility Studies and Economic Analysis (200K):** study of key issues to help remove barriers to project development
5. **Business/financial models and contracts (200K):** development of agreed “standard” business/financial models for assessing bankability of wind projects.



China & India



- **China:** wind cap. more than doubled from **26 GW** in 2009 to **62 GW** at end of 2011; 17.6 GW installed in 2011 alone, offshore cap is 258 MW
- **India:** wind cap. grew by **3 GW** in 2011 to reach a cumulative capacity of **16G W**
- **China and India** have strong manufacturing capacity and are increasingly looking to compete overseas.
- **The rest of Asia is lagging in wind development**



Key Points from 5 Pioneer Projects: Sri Lanka, Mongolia, Philippines, Pakistan, and Thailand

- Technology is the straightforward part
 - “People” & “policy” factors present the biggest holdups to wind projects
 - Negotiations, processes, public awareness
- Uncertainty
 - Sustainable development of wind projects require improved, long-term policies.
Example: Philippines, Sri Lanka

Key Points (cont)

- High price of failure
 - Pioneer wind projects showcase the potential of wind energy
 - Success is imperative to ensure smoother road ahead
- Hope
 - Five out of 5 case studies were Pioneer wind projects – they have paved the way for wind development in Asia



Selected Country Updates

Mongolia: Progress, low FIT; huge potential but who to sell this to?

Philippines: High FIT has been approved, long term plans needed

Sri Lanka: Government competing with private sector?

Vietnam: Low FIT to attract the best, most efficient wind projects

Bangladesh: No FIT, Long terms plans needed

Thailand: Focus on harnessing low speed and off-shore wind

Pakistan: Tariff is cost plus and 17% ROE, moving towards FIT

Timor-Leste: Wind resource mountain tops, Land use problem

Fiji: Collapsible turbines, but low operational efficiency

Afghanistan: Security issues despite government guarantees

India: 200MW demonstration off-shore wind plants planned

China: Primary constraint is grid limitation, off-shore plants planned



Key Points from Country Updates

- Feed-in-Tariffs:
 - Components, in the context of the “total package”
 - Need time to arrive at the appropriate FIT levels
 - Need for comparison of wind energy tariffs
- Grid interconnection of variable wind energy
 - problem for large and small scale wind
 - Grid interconnection studies needed
- Land use:
 - Land acquisition - an issue in almost all countries
 - Key source of project delays and abandonment

Wind Energy Future in Asia

A Compendium of Wind Energy Resource Maps,
Project Data and Analysis for 17 Countries in Asia and the Pacific



Download: <http://i-windenergy.com/QLW-Publications>

Summary: Investing in the Future

- Upgrade and strengthen power grids
- Capacity - electricity planning and dispatch centers
- Long-term wind resource assessment
- Build technical capacity in regulatory agencies
- Institute land reforms & develop legal frameworks
- Perform economic analysis, in addition to financial analysis, treating the economic value of developing wind power as the avoided cost of building a marginal coal power plant



“Asia is energy hungry”

“All predictions about wind energy have been proved wrong”

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

“Asia is the world leader in wind energy”

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

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

“Commit to wind energy and with it improve people’s lives”



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

Thank you !

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