Wind Resource Assessment: Key Lessons Learned

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

QLW Deep Dive Workshop

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Agenda

- Background
- Objective of QLW's wind resource program
- Next Steps

QLW TA Components

1. Wind Energy Development Roadmaps

– Country-level roadmaps to be developed in partnership with stakeholders

2. Wind Resource Assessment

– Provide long term ground-based wind measurements in areas where there are good to excellent wind resources, electricity demand, adequate grid capacity, and with access to land, road, and grid

3. Knowledge Management and Capacity Building

– 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

– Study of key issues to help remove barriers to project development

5. Business/financial models and contracts

– Development of agreed “standard” business/financial models for assessing bankability of wind projects.

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Focus of QLW: Long Term Measurement

Why?

- In most developing countries, long-term high quality wind data is not available
- Alternative is to use reanalysis datasets--inaccurate in regions with scant measurement
- A financier/independent engineer is unable:
  - To verify the measured data
  - Fill in for missing measurement data
  - Put the measurement in a historical perspective
  - Compute a long-term correction to measured data
- Financiers therefore often require 3 to 5 years of onsite wind data using a tall tower that is close to hub height

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Accelerating Wind Power Development

Primary Objective:

- High quality wind resource maps for developing countries
- Why and 3Tier and others online services not sufficient?

Intended Impact of Long-Term Measurement

- Long-term measurement provides data for more accurate **wind resource maps** (WRM)
- Accurate WRM leads to fewer **prospecting mistakes** and therefore reduces the cost to private developers
- High quality long-term dataset reduce uncertainty, increase P75, P90 estimates, and make wind projects **bankable**
- **Increases confidence** of financiers
- **Reduces time and cost** of wind measurement

Quantum Leap in Mongolia

- **Higher quality wind resource maps** and assessments for new areas for future export of wind energy
  - QLW provided assistance with long-term wind measurement in Eastern Mongolia, areas that have not been measured
  - It should reduce concept-to-commissioning time & reduce uncertainty

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Quantum Leap in Philippines

- Develop **new pipeline** of projects with reduced time from concept-to-commissioning
  - QLW created partnership with USAID/NREL to update wind resource maps
  - We got private developers with onsite wind measurement to contribute to this effort
  - QLW is providing assistance with long-term wind measurement at 4 sites

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Quantum Leap in Sri Lanka

- Develop new pipeline of wind projects in **unexplored areas**
  - QLW is providing assistance with long-term wind measurement in areas unexplored before: Jaffna, Poonaryn and Kokilai
  - Long-term measurement will lead to updated wind resource maps that are more accurate
  - Reduce time from concept-to-commissioning of new projects

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