ALLEVIATING CYCLONE AND EARTHQUAKE CHALLENGES FOR WIND FARMS

Joint Industry Project - Call for Participants

Emerging wind energy markets in Asia-Pacific and Americas present new design challenges for wind farms and wind turbine structures, in particular cyclones and earthquakes. The industry urgently needs a commonly acceptable approach.

Background
Cyclones and Earthquakes have rarely been design driving in established wind energy markets such as Europe - but with the wind industry moving on a global scene, the picture is rapidly changing. These extreme events with a high level of uncertainty are considered highly relevant in emerging markets.

For cyclones, existing models for determining relevant input data are either not applicable or result in high uncertainty if land passage or interaction are important.

Methods for determining extreme wind speed and extreme gust wind speed for such sites are crucial to balance technical and economic feasibility of projects.

For earthquakes, a consistent and consensual design approach is needed, combining local experience with international standards. The main focus is on soil-structure interaction during both construction and operation phases, as well as particular challenges such as liquefaction.
The “ACE” JIP

**Alleviating Cyclone and Earthquake Challenges for Wind Farms**

### Challenges to Address

- Do existing practices and standards adequately balance reliability and safety with the economic feasibility?
- How to fill gaps in standards such that a consistent safety level is obtained?
- Can we establish a commonly agreed and accepted solution for all stakeholders?
- How to do so timely to benefit ongoing projects?

### Participants

The project will be led by DNV GL with participation from stakeholders with an interest in the development and design of wind farm projects, in particular project owners, developers, designers, wind turbine manufacturers, insurance providers, and authorities.

### Timeline, Cost and Budget

The project will start in Q4 2019. Final completion is envisioned in Q2 2020. Intermediate results will be made available to the partners. Approximately 12 participants in total are anticipated. The project participation fee will depend on the number of participants.

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