

Pre-Feasibility Study of the Wind Potential in Lao PDR

Project Objective

This project aims to carry out a pre-feasibility study of the wind energy potential in Lao PDR leading to a definition of regions with high wind potentials.

Description

Currently a lack of wind data in Lao PDR exists. Only very few wind measurement masts were installed. Furthermore, the government has recorded data at low altitudes (around 10-20 m). For the development of wind farms, data measured in the neighborhood of a possible planned wind farm and for longer periods are needed.

This study combines in the first stage a lot of information: the electrical situation (location of substations, capacity of the grid, and location of medium and high voltage lines), some major restrictions, general wind speed information (e.g. 3Tier, AWS Truepower, wind mapping, existing wind measurement masts), accessibility and environmental and socio-economic issues. All available reports (such as the wind energy resource Atlas of Southeast Asia) will be studied into detail and used if it adds value. Reference to these studies will be made. With all this information, it will be possible to quickly define the most interesting regions which should be further looked into detail.

For these interesting regions, more detailed data of 3Tier or AWS Truepower or equivalent will be used to be able to locate the most interesting areas in every region. A combination of this information with the existing measurement masts, will give the opportunity to make wind potential maps for some regions.

At three interesting sites (having consulted local authorities and local people), a medium-size wind measurement mast will be installed. Having at least 6 months of measurements by the end of the project will already give a first idea on the wind conditions and possible energy yield. This will allow having a general view on the potential of a site and these measurement masts can be used as reference masts in a later stage (for the development of other sites).

Project Highlights

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| Project ID | : 3-L-049 |
| Country | : Lao PDR |
| Lead Partner | : Tractebel Engineering S.A. |
| Partners | : South-East Asian Pomer Consulting AB (SEAPCO), Green Energy Company (GRECO) |
| Total Project Cost | : € 254,900 |
| EEP Financing (% to total project cost) | : € 198,000 (77.7%) |
| Technical Focus | : Wind Energy |
| Activity | : Pre-feasibility study |
| Duration | : 15 months |

Once the measurement masts have been installed, the pre-design of the wind farm and the first production estimates will be made. For the sites where a wind measurement mast has been installed, a financial, environmental and electrical analysis will be provided.

Apart from installing wind measurement masts on certain sites, the study will also provide other interesting spots to install measurement masts in the future.

At the end of the study, a large part of the development phase will have been performed and all elements will be available to either further develop the project or propose the project to investors who want to further develop the project themselves.

Based on the information obtained during the project, an economic impact assessment will be made to indicate the true potential on wind energy and the consequences on the country's economy. This will allow the government to set targets, to setup a subsidy system and to evaluate the financial benefits of wind energy.

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This study will define the regions with highest potential and give recommendations on the regions which should be developed and where new measurement masts need to be installed. The study with its content will act as the first instrument to start the development of wind energy projects in Lao PDR.



Relevance to Country's Energy and Environment Policies

This pre-feasibility study on wind energy is of high importance for Lao PDR and will give a clear picture to the Lao government on zones with the highest wind potential. This study will also provide an incentive to private investors or banks.

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Innovation and Knowledge Transfer

This study will setup a learning process for the government and investors. There will be an introduction on the possibilities with wind energy in Lao PDR and the pre-development will happen on three sites. The followed procedure can easily be used again afterwards.

The learning process will closely be followed up during the whole project. It is not only the aim to inform the responsible authorities on regular moments, but also to ensure the further development through capacity building.

The results of this study will be widely disseminated. All stakeholders will be regularly consulted and informed during the project. The interaction between parties with different interests or opinions should lead to an end result which is supported by as many people as possible. Secondly, the end result of this project should contain all necessary information to get started with wind energy in Lao PDR. Thirdly, the study will also demonstrate the positive impacts of renewable energy for the villages in the neighborhoods of the wind farms.

The project will be wrapped up with a final event where all involved authorities and stakeholders will be invited to hear the conclusions of the study and to have an open discussion on further steps to be taken to ensure the implementation of wind energy.



Wind measurement mast