

## COMPLETION REPORT

A Comparison of Policies and Development of Green Technology for Protecting our Environment in Japan and Vietnam. Case Study of Electric Wind Energy Generators

Dr. Phan Anh Tuan

Lecturer

School of Transportation Engineering

Hanoi University of Science and Technology

The world is prioritizing the development of green technology to combat the pollution and climate change. Wind energy is considered as a green energy source, clean and inexhaustible. This energy is not depleted but the only problem is how much percentage of this energy we can obtain and convert to electric power for our demand of daily electricity using. This project has made a comparison of policies and development of green technology for protecting our environment in Japan and Vietnam: *Case study of electric wind energy generators*.

Research found that:

1. Vietnam's wind energy potential is considerably higher compared to Thailand, Laos or Cambodia. Vietnam is one of the ASEAN countries with wind potential could be used for electricity. However, compared to Japan, wind potential in Vietnam is not so high.
2. With good encourage policies for wind energy development, at current, Japan has 326 wind energy plants. In which, public operated 68 plants (Municipalities, NEDO, METI), private operated 258 plants. While onshore wind turbines are dominated by international manufacturers, 86% of offshore wind turbines are manufactured by Japanese companies, with Hitachi and Fuji pre-eminent. Increasingly, local companies are also starting to develop larger models, with Mitsubishi developing a 7MW turbine. This upsizing is important for the economics of wind farms as they move from demonstration to full scale deployment. In the opposite site, Vietnam does not have good encourage wind development policies. Therefore, only some wind power plants have built in Vietnam.
3. Japanese government has quite complete and clear policies on wind power development. So wind power developing companies will ease to invest in wind power plants in the country.
4. Vietnam is a developing country so that laws and policies in the country are not stable. In ten years, from 2010 to 2015, there are so many Decisions and Circulars have promulgated by the Government. This problem has prevented the development of wind power projects in Vietnam. Many wind power plants are scheduled for building in Vietnam in the past. However, since the law and policies are not so clear and stable, many of these plants have been delayed or cancelled.
5. For the sustainable development of wind power and encourage both domestic and international investors, Vietnam should learn from the policies that Japan has adopted.

Publication of the Results of Research Project:

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.)

Date: Nov. 24-25, 2016

Venue: Sunway Hotel Phnom Penh, Cambodia.

Name of Conference: The 3<sup>rd</sup> Regional Conference on Energy Engineering.

Title of Presentation: Research and Development of Wind Energy in Japan and Vietnam

Pages: 54 - 60

Authors: Phan Anh Tuan, Pham Thi Thanh Huong

Presenter: Phan Anh Tuan

Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)

Book (Publisher and Date of the Book, Title and Author of the Book, etc.)