



Shallow coastline

A 20 m - 30 m deep seabed suitable for bottom-mounted wind turbines can be found off the coast of Akita Prefecture.

The region, centered on the Oga Peninsula and bordered by the Aomori Prefecture border to the north and the Yamagata Prefecture border to the south, is blessed with continuous sandy seabeds over large areas, making it capable of supporting a large-scale offshore wind turbine operation.

Sub-marine cables

It would be possible to lay direct current (DC) sub-marine cable taking advantage of the shallow terrain. It could be connected to the Tokyo Electric Power system in Kashiwazaki, Niigata via the islands of Tobishima, Awashima, and Sadogashima. Transmission loss will be greatly reduced through the use of DC lines. Another transmission route could be through the Oma line in Aomori Prefecture that Tokyo Electric Power has already laid. This would assure the entire Tohoku region a lifeline in the event of an emergency.



The westerly winds are a rich wind resource for Japan...

The western coast of Akita Prefecture is blessed with abundant seasonal winds. In the past, these seasonal winds blowing in from Siberia were a nuisance to the people living here. But as we have opened the door to the 21st century, the development of wind turbine technology has changed these winds into a rich energy resource. Securing renewable energy is indispensable to the creation of a sustainable economy in Japan. Our proposal is one that can revitalize the region and be in Japan's national interest.

Kingdom of the Wind - Offshore project
<http://kaze-project.jp/>

Kingdom of the Wind - Offshore project



PHOTO : Kim Hansen

426 7 MW wind turbines along the Akita Prefecture Coast for a total power generation of 3 GW

The safe energy Japan needs now is here.

Akita proposes taking advantage of this purely domestically produced energy for our future.



PHOTO : Mariusz Paździora

426 turbines at ¥ 2.5 billion per turbine - Over ¥ 1 trillion

The turbines that rotate **160 m diameter blades** to produce electricity are expensive at ¥2.5 billion per turbine. We plan to continue with the coastal installation of a large-scale bottom-mounted offshore wind turbine project, while putting efforts into promoting the wind turbine industry.

Establishing an **entirely made-in-Japan blade factory** is needed to increase the competitiveness of domestic manufacturers. There is industrial land adjacent to harbors in Akita Prefecture. By producing each 80 m blade on site and attaching them to the nacelles offshore, shipping costs can be greatly reduced.

Attitudes of fishermen The fishermen of Akita Prefecture implemented a three-year fishing ban in the 90s on hatahata sand fish in order to prevent their depletion and succeeded in restoring this resource. This project was positively reviewed by fisheries around the world. Since the participants in this project at the time continue to be involved in the fishing industry, we believe it will not be difficult to get their consent for this project.

The three principles of the Kingdom of the Wind

1. The local companies, organizations, and individuals will have ownership of more than half of the project.
2. Decision-making for the project will be carried out by an organization based in the area.
3. Over half of the social and economic benefits will be distributed to the local region.

We define the Kingdom of the Wind group project to be one that satisfies at least two of the above principles.

Since offshore wind turbines are a large-scale project, we do not anticipate everything to work perfectly, but we believe that these three principles will be effective as a **policy to find good partners for the region**, and ones that can work well with the region.

We are considering recruiting joint venture groups responsible for six blocks.

We expect this will lead to the **creation of new jobs**. Akita Prefecture's elementary and junior high school achievement tests continue to shine as the best in Japan; a smart workforce is Akita's greatest resource.

Q&A

What are the plans for the project?

Japan's energy is in a state of emergency. Before discussing restarting nuclear power plants, we should work on producing renewable energy. This project aims to be half finished in 10 years and completely finished by 2030. The reason for this is that updating of the equipment will begin in the 21st year.

What will the effect on fishing be?

It is believed that the impact will be minimal. One effect is that schools of fish may not approach the area while the project is under construction. However, in cases already implemented in Europe, there have been instances of fish gathering after the construction is complete due to the reef effect, so there are both negatives and positives.

Are the power companies on board?

It is said that the unstable aspects of natural energy are problematic, but there are many measures that can be considered. Of course, perfect technical measures will not be established immediately, but Japan's engineers are certainly capable of solving these issues. In preparation, it is meaningful for Japan to have its own energy that does not rely on other countries, so we are convinced that this is in our national interests.