

Actions to promote wind-power plant taken by Ministry of the Environment Japan

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Promotion for wind-power plant on the environmental side

< Floating Offshore Wind Turbine Demonstration Project >

offshore wind power promises stable and efficient power generation
⇒ Demonstration project is expected.



Source: Ministry of the Environment

< Collection and Utilization of EIA-Related Information >



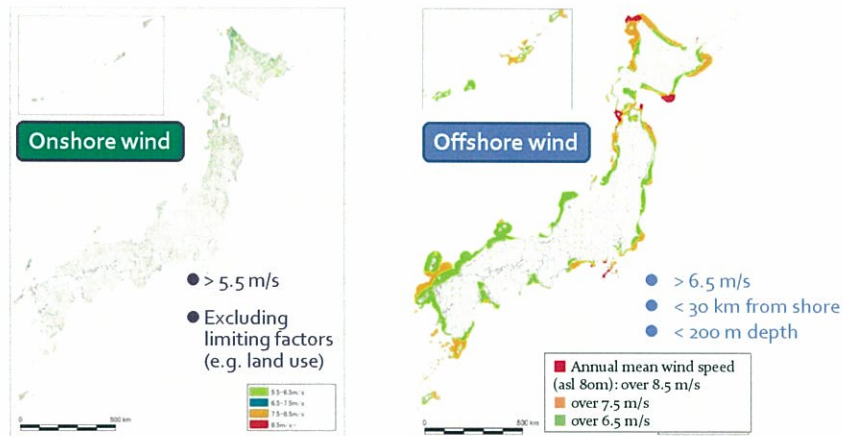
Collecting and utilizing the EIA-Related information will promote "good and swift" EIA for wind-power plant

< Technology Development to reduce "trade-off" >



Development of technology to eliminate or reduce bird-strike risk, noise, etc.

Offshore/Nearshore Wind Power potential in Japan

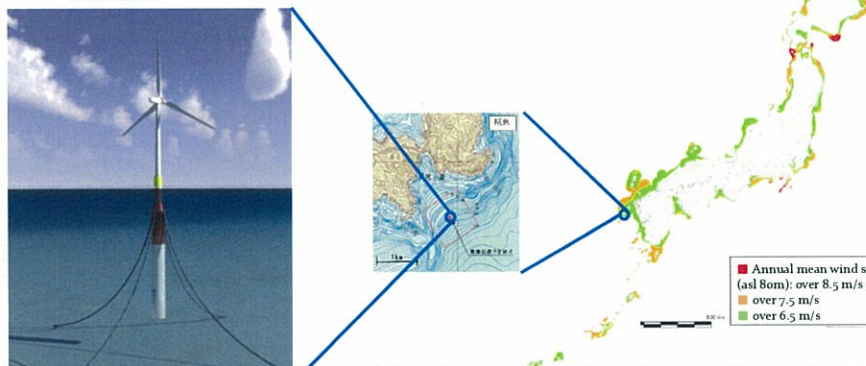


Onshore	283 GW
Offshore, fixed (< 50 m depth)	299 GW
Offshore, floating (> 50 m depth)	1,273 GW



Floating offshore wind turbine demonstration project

- Demonstration project in Nagasaki
- Objective: demonstrating a full-scale (2MW) floating offshore wind turbine
- Location: Kabashima Island, Goto City, Nagasaki Prefecture
- A **full-scale 2MW turbine** has been in operation since last month



Floating Offshore Wind Turbine Demonstration Project

- Japan has the 6th largest exclusive economic zone in the world. **Offshore wind turbines have more introduction potential than that of onshore.**
- With higher wind speed, offshore wind power promises **stable and efficient power generation.**
- Having not much shallow sea areas, Japan **expects much from floating turbines** that can be introduced in deep sea areas (50m or deeper)
- Demonstration project of floating wind turbines started in FY2010. **The pilot scale and commercial scale model were installed and operated in FY2012 and FY2013 respectively.** Associated technologies and systems will be established by FY2015 toward practical application.

Construction, installation, operation and evaluation of Japan's first commercial-scale floating offshore wind turbines

- Full-fledged demonstration off the coast of Kabashima, Goto City, Nagasaki
 - The world's first **hybrid spar** model
- [Significant cost reduction taking advantage of Japanese technologies]



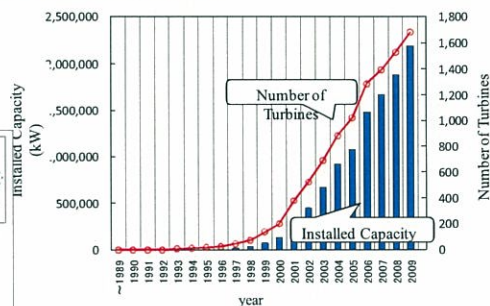
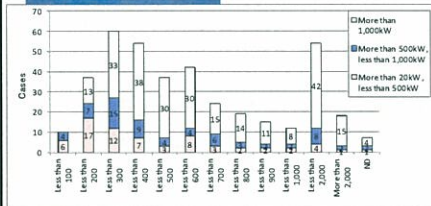
2MW demonstration model

- Design and construction of a floating structure **resistant to typhoons, etc.**
- **Coordination with the fishing industry/system** in harmony with fisheries
- **Environmental assessment method**

In addition, demonstrate technologies and systems to produce hydrogen using surplus electricity in the process of power generation to supply energy for local production for local consumption

In FY2014, gather information concerning full-fledged operation and power generation using the 2000kW commercial-scale equipment, its environmental impact, adaptation to weather conditions, safety, etc. to obtain knowledge toward practical application.

EIA for Wind Power Plant



- Concerns over Environmental Impact noise (inc. low-frequency sound), bird strike etc.
- Voluntary based Environmental Impact Assessments were executed in only 1/4 of all cases, and public comment procedures are not being held

According to a verdict by the Central Environment Council (Feb/2010), the installation of wind power generation facilities should be added to the target projects that require mandatory EIAs under law.

EIA on Power Plants in Japan

	Class-1 Projects	Class-2 Projects
Hydraulic Power	30 MW and over	22.5 MW – 30 MW
Thermal Power	150 MW and over	112.5 MW – 150 MW
Geothermal Power	10 MW and over	7.5 MW – 10 MW
Nuclear Power	(All)	---
Wind Power	10 MW and over	7.5 MW – 10 MW

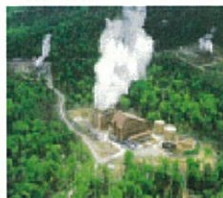
Since Oct. 2012

Expediting of EIA Procedure for Power Plants

- Tight situation of power supply caused by the earthquake
- Promotion of harnessing renewable energy (wind, geothermal)



Necessity of expediting EIA Procedure for rapid installation of power plants



Wind and Geothermal Power Plants

Model Project to prepare basic information for EIA for wind-power plant etc.

Purpose

- Create database of basic environmental information (such as habitat, fly-route etc.) for EIA and supply the data to public. ⇒ promote high-quality and effective EIA implementation

Expected effects

- Avoid and reduce environmental impact by clarifying the areas in which wind-power plant may easily affect
- Using the collected basic information, project proponent can make high-quality and effective (i.e. rapid) EIA ⇒ contribute to promote quick and large-scale installation of wind-power plant

Field survey for basic information on Model Area

- Select model area (by MOEJ and local gov.) for wind-power (ground/ocean), geotherm.
- Survey (bibliography, field, interview etc.)
 - Fly route of migratory birds
 - Nesting situation of raptors.
 - Habitation of etc.

Correct existing information

- Regulation of land use
- Distribution of animals/plant
- Technical information



EIA information database

- Prepare and supply as database
- Map-based information can be available on WEB-GIS

Merits

Project proponents

- Simplify Initial siting study
- Smooth running of projects (shorten the EIA duration, reduce EIA cost, avoid potential environmental risk)

residents, Local gov.

- Expand information exchange by using the information and relating the EIA process

List of Model Areas

FY2012

都道府県	市町村	調査面積 (km ²)
北海道	上川町	1.5
青森県	青森市	3.0
岩手県	横濱町	2.5
秋田県	洋野町	1.5
山形県	由利木柱市	3.0
福島県	小原町	2.5
福井県	いしづき市	5.5
福井県	小浜市	1.0
山口県	萩市	1.0
鹿児島県	阿久根市	2.0
9道県10地区		

FY2013 1st

都道府県	市町村	調査面積 (km ²)
北海道	八雲町	4.0
青森県	島牧村	1.7
青森県	田子町	5.1
岩手県	洋野町	4.6
秋田県	由利木柱市	4.0
秋田県	大館市	2.2
秋田県	能代市	123.5
秋田県	湯沢市	1.5
千葉県	船山市	2.1
千葉県	君津市	1.0
山口県	阿武町・萩市	5.0
山口県	下関市	0.4
愛媛県	砥部町・内子町	2.1
長崎県	西海市	410.2
熊本県	芦北町	1.0
鹿児島県	指宿市	2.1
10道県16地区		

FY2013 2nd

都道府県	市町村	調査面積 (km ²)
北海道	稚内市沖	400
岩手県	普代村・野田村	3
岩手県	洋野町沖	40
秋田県	秋田市・潟上市	6
秋田県	南部沖	580
秋田県	北都沖	170
福島県	いしづき市	7
福島県	古郷町	7
福島県	天栄村	2
福島県	南相馬市・飯館村	3
静岡県	御前崎港	130
兵庫県	神戸町	4
鳥取県	中部沖	40
山口県	萩市	2
福岡県	北九州沖	20
長崎県	五島市黄島沖	500
長崎県	長崎市地島沖	7
鹿児島県	串木野港	20
11道県18地区		

FY2014 1st

都道府県	市町村	調査面積 (km ²)
北海道	二七町	9
北海道	岩手町沖	37
北海道	寿都町	8
北海道	寿都町沖	88
青森県	八戸市	8
秋田県	能代市	2
福島県	南相馬市	21
石川県	輪島市	26
静岡県	磐田市	10
愛媛県	八幡浜市	4
高知県	室戸市	37
福岡県	北九州市沖	240
長崎県	新上五島町沖	158
鹿児島県	徳島川内市沖	177
11道県14地区		

FY2014 2nd

都道府県	市町村	調査面積 (km ²)
北海道	八雲町山崎	8
青森県	五戸町藤田木町	4
青森県	五戸町藤田木町	1
青森県	八戸市南郷区	50
岩手県	奥州市	19
岩手県	久慈市	10
岩手県	豊岡市竹野町	2
兵庫県	豊岡市但東町	2
静岡県	新温泉町	14
静岡県	牧之原市沖	48
兵庫県	洲本市沖	47
鳥取県	出雲市沖	52
新潟県	村上市沖	27
8道県13地区		

	Survey area
Windpower(ground)	360 km ²
Windpower(ocean)	5,369 km ²
Geothermal	4 km ²

※some areas are still under survey.

Survey has been done in 20 prefectures, 71 areas (48 of wp ground, 21 of wp ocean, 2 of geothermal)

Basic environmental information database system for Environmental Impact Assessment

1. Basic information GIS system

provide environmental information of model areas

2. Reference Search

search system of past EIS document

3. EIA Case Search

search system of past EIA case information

4. Reports List

The Zoning Project for Wind Power Plant initiated by regional communities

Not yet determined, possibly in FY2015

Background and Purpose

- Designing and Planning of wind power plant conducted by proponents has tended to lag behind originally scheduled due to;
 - coordination with incumbent proponents, and
 - procedures required for regulations concerned.
- Thus, necessary to ease the burden related to Environmental Impact Assessment procedure (post "Scoping"), by both forgoing EIA procedures and zoning initiated by regional communities in a blanket manner.
- Aiming at compressing the time span (planning to groundbreaking) in average, 5-7 years, to 3 years at maximum, by establishing the zoning method.

Project scheme

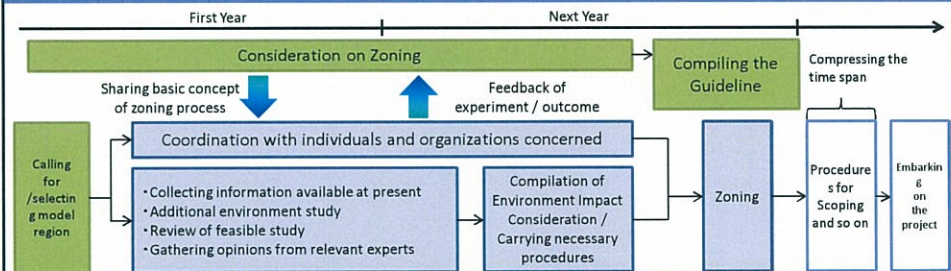
- Expected players : local municipality or private entity
- Term for the project : FY2015 – FY2016

Abstract

- 1) **Establishing the method for the strategic zoning**
 Compiling a Guideline for the Zoning Project for Wind Power initiated by regional communities focusing on;
 - limitation by attributes of the project / the region
 - reconciliation method for stakeholders/ inhabitants
 - good practices of carrying EIA procedure
- 2) **Demonstration project in selected model regions**
 Calling for local municipalities that are proactive in inviting to set up Wind Power stations. The project consists of;
 - coordinating with individuals / organizations concerned
 - collecting information available at present, and
 - reviewing feasible studies in the model regions. (3 regions incl. onshore, offshore)

Expected outcome

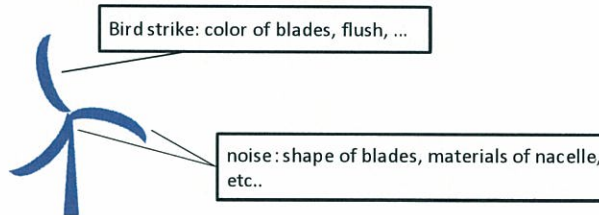
- Both mitigating risks associated with a project and environmental consideration in early stage
- Encouraging to establish bases for supply of renewable energy
- Realization of actual case of Strategic Environment Assessment



Other related projects

- ❑ Verification project of Environmental conservation measures/techniques for wind-power plant (still under budgetary request, not yet be determined.)
 - To seek and find out the fundamental solution/technique for bird-strike problem and noise problem, Verification project is under consideration
 - To find effective way of EIA for replacement of wind-power plants.

- ❑ Examination of the bird strike preventive measures
 - reviewing plans to prevent sea eagles from colliding with wind turbines for three years from 2013 to 2015 and collecting further data contributing to improving the guidelines to formulate measures to prevent sea-eagle collision with wind turbines.



Thank you for your attention!!