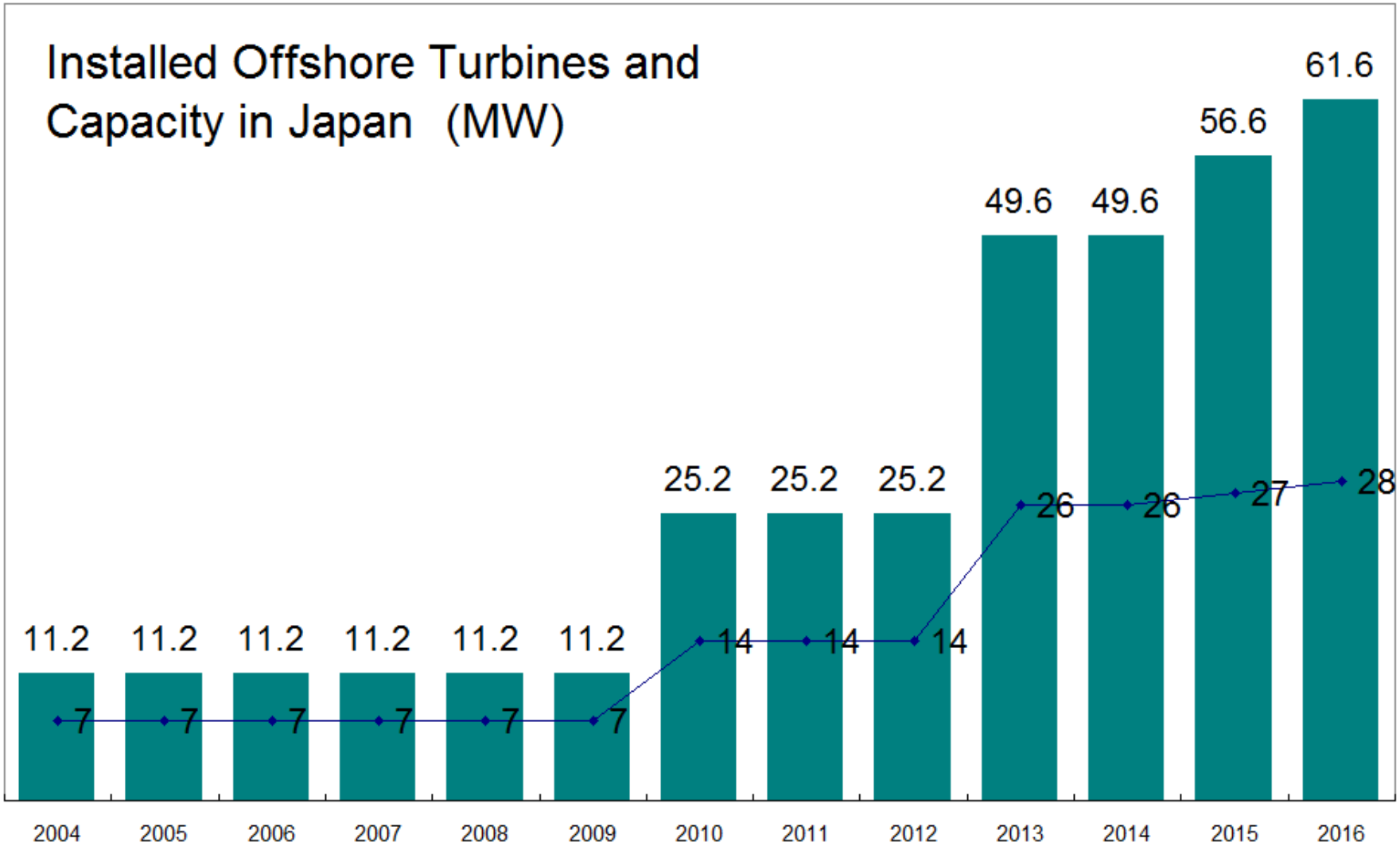
# Offshore Wind Energy Developments in Japan

Masahiro (Masa) Matsuura [松浦正浩], Ph.D.
Meiji University
Graduate School of Governance Studies [公共政策大学院]

明治大学
MEIJI UNIVERSITY

# Offshore Wind in Japan

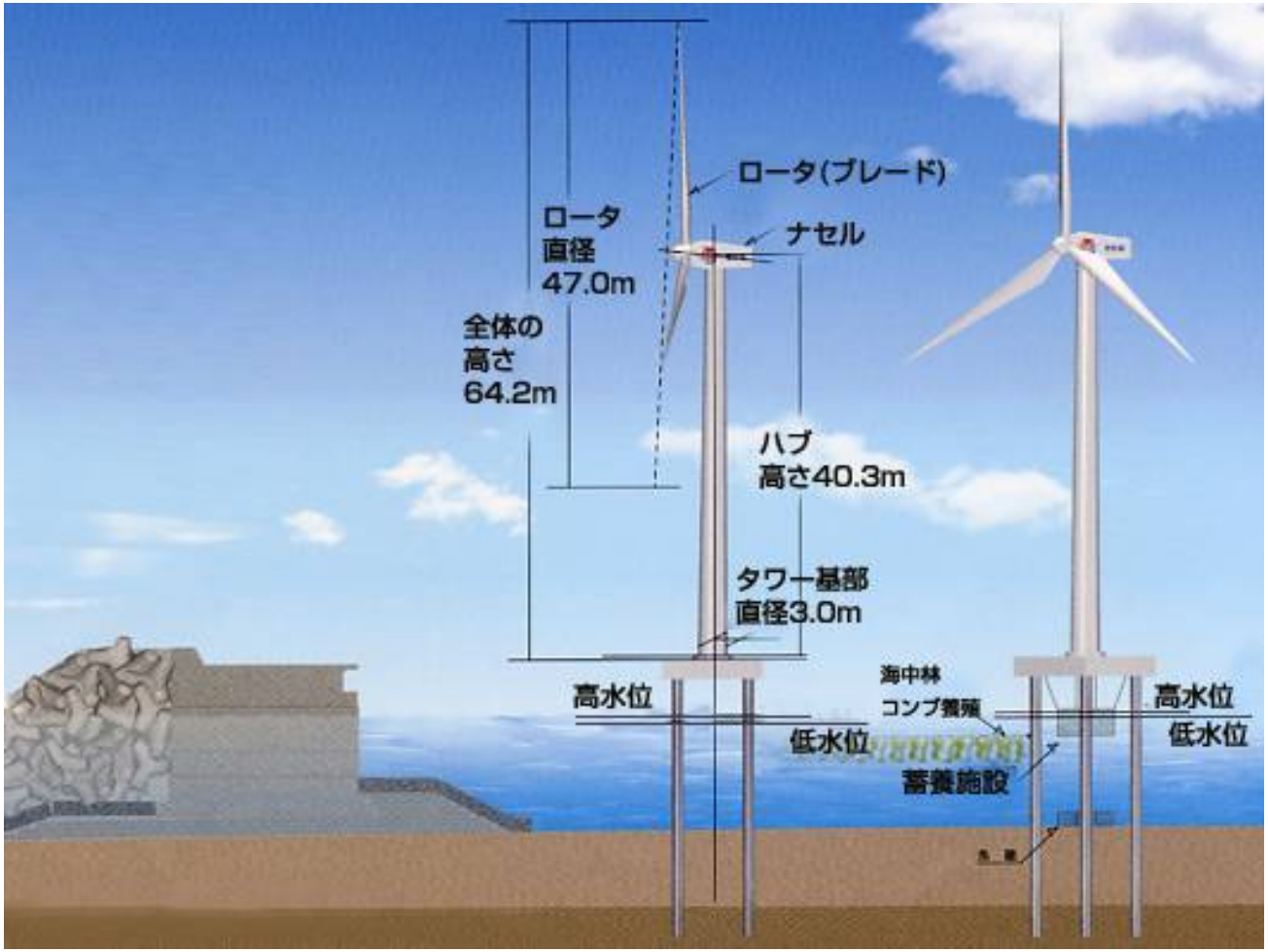


# Existing offshore turbines in Japan

# Setana “Kazamidori”
# 瀬棚　風海鳥

(Source: Setana Town Web Site)

# Setana “Kazamidori”




(Source: Setana Town Web Site)

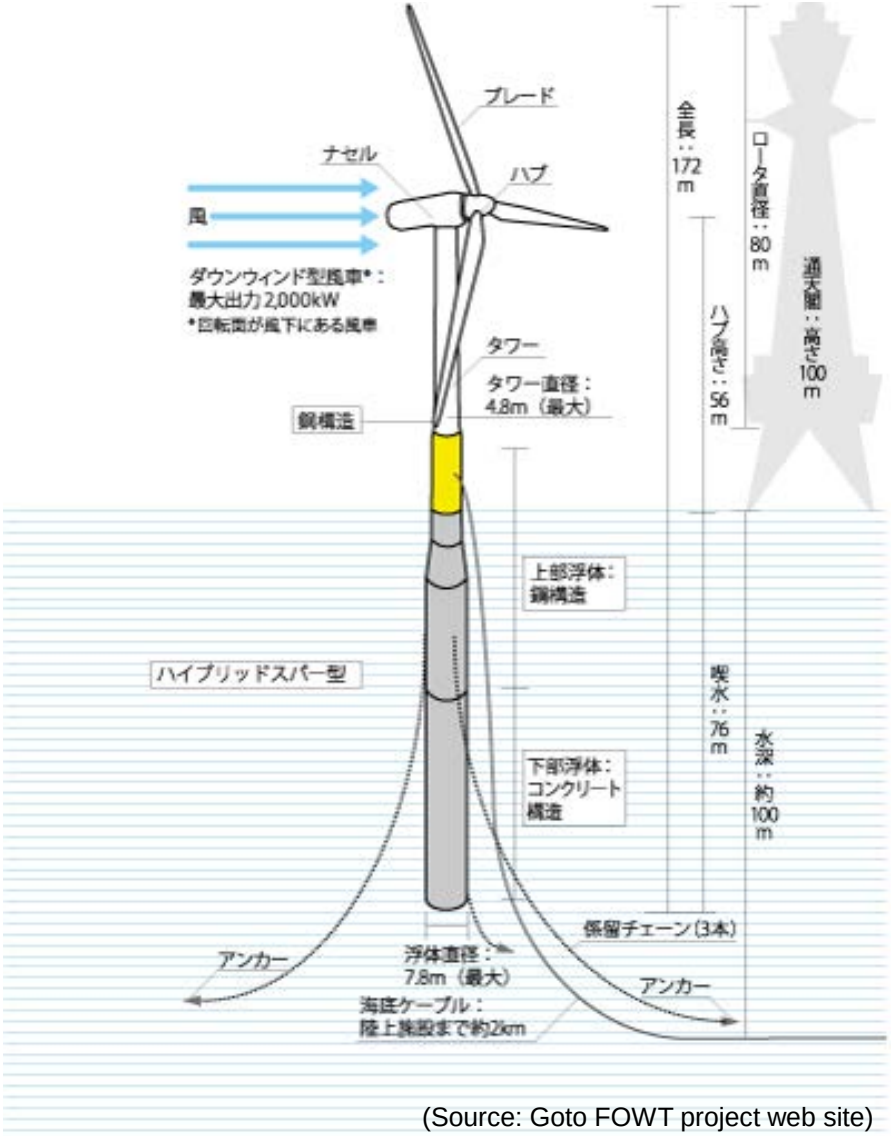
# Windpower Kamisu 神栖風力

# Choshi Offshore Turbine 銚子洋上風力

## (NEDO Pilot Project) 新能源産業技術綜合開發機構実証実験

# Kita-Kyushu Offshore Turbine (NEDO Pilot Project) 北九州

# Goto Floating Turbine 五島浮体式風車




(Source: Goto FOWT project web site)

# Fukushima Offshore Turbines


(Source: Fukushima Offshore project web site)

# Resource availability 導入可能量試算

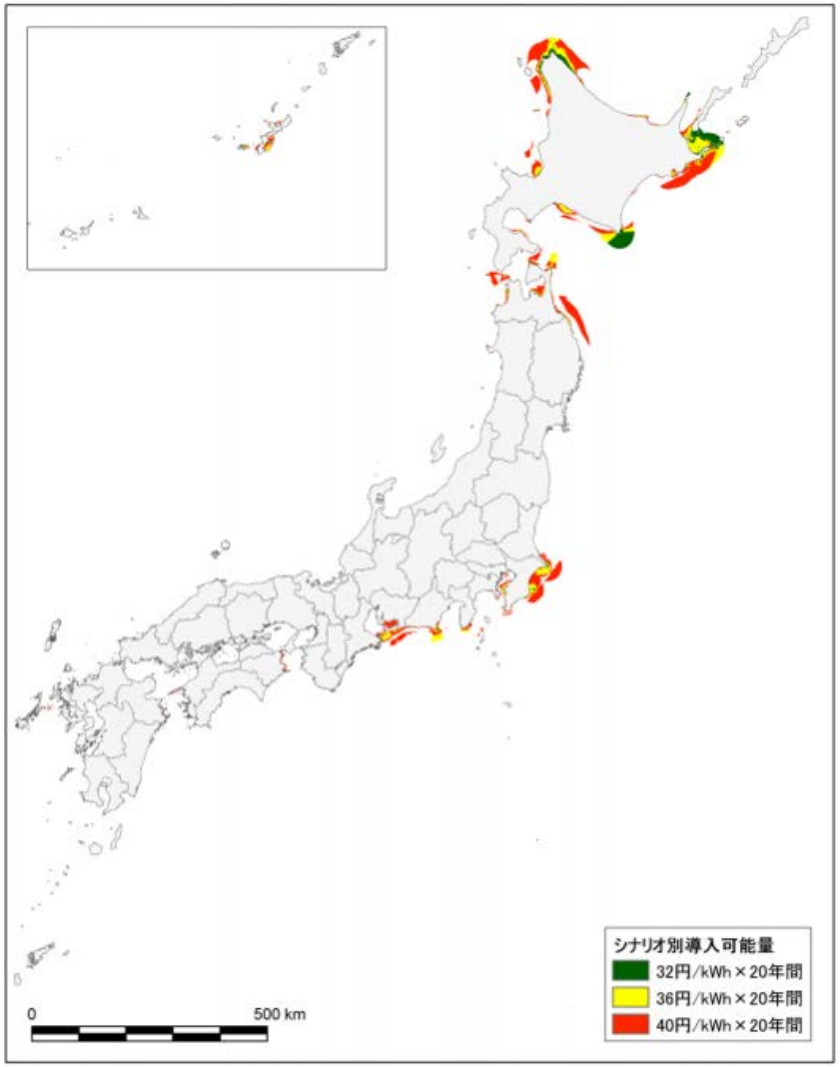



図 3.1-32　洋上風力のシナリオ別導入可能量の分布図

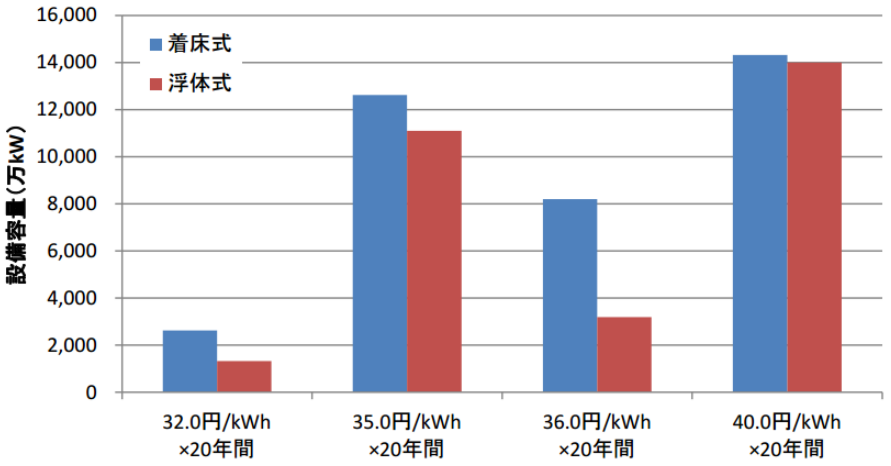


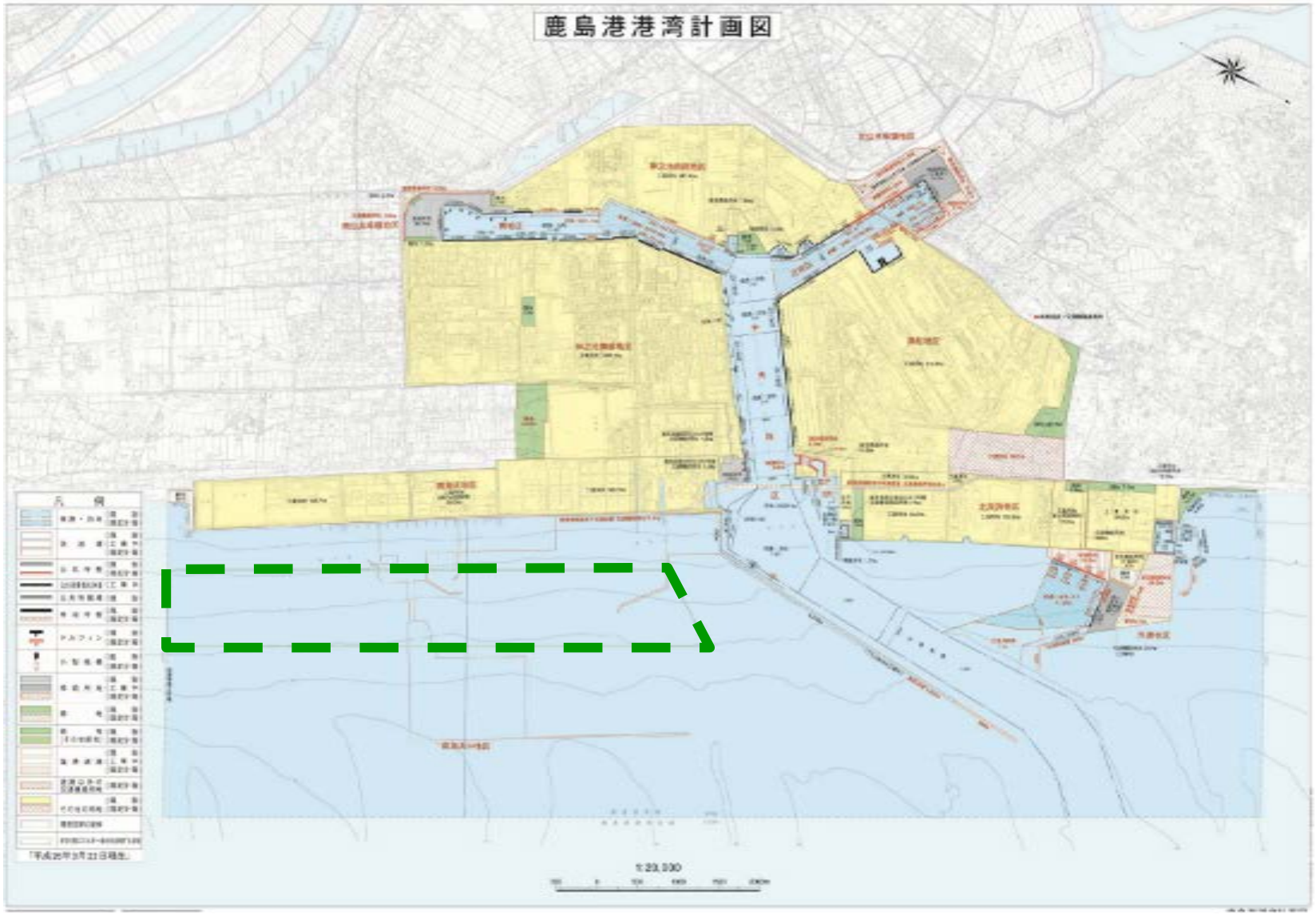

図 3.1-34　洋上風力のシナリオ別導入可能量の集計結果（設備容量　単位：万 kW）

(Source: Ministry of Environment “Report on Zoning Basic Information on Renewable Energy FY 2015”)

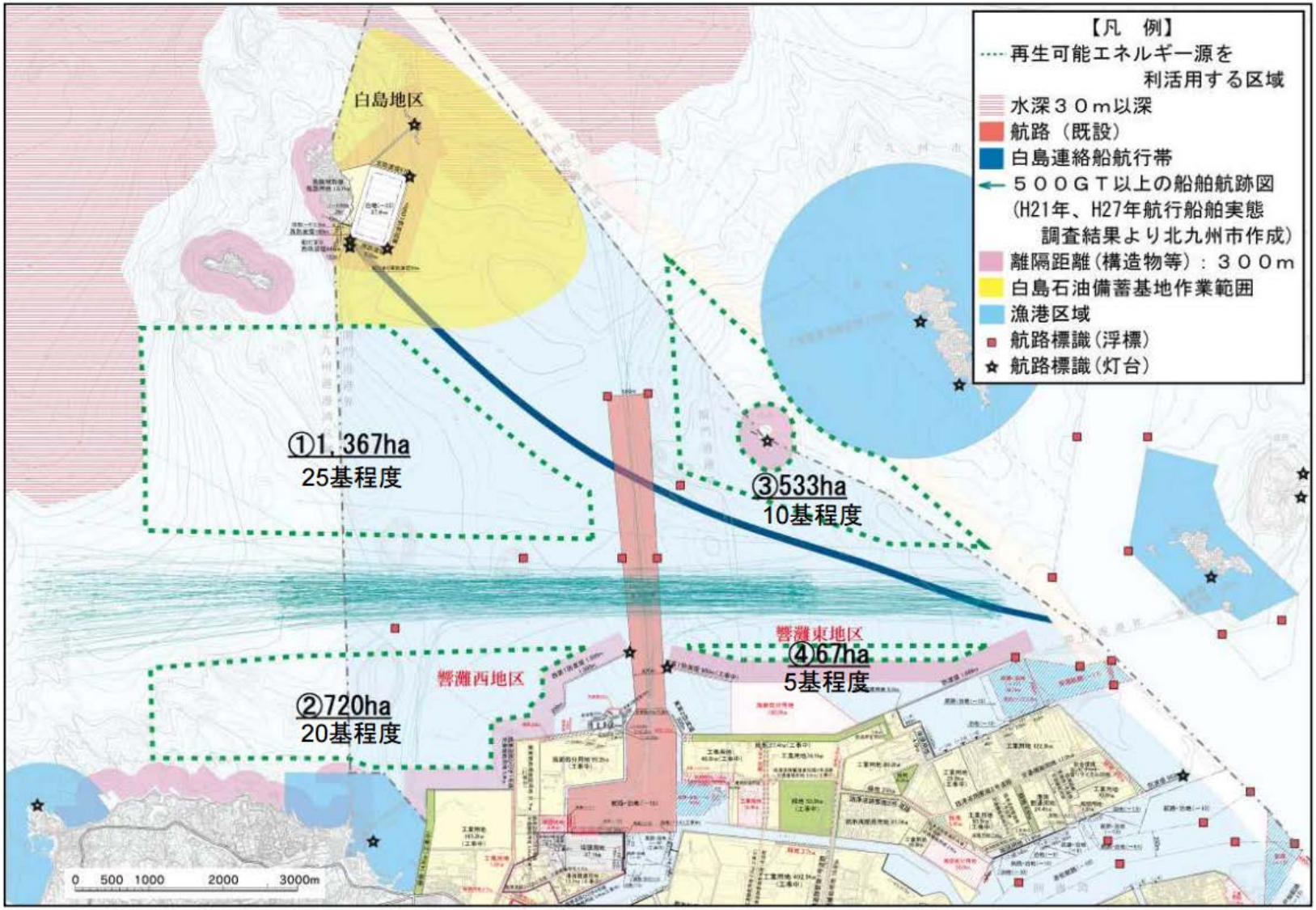
# Kamisu Kashima Port 鹿島港

(Source: Wind Power web site)

# Kamisu Kashima Port



# Kita-Kyushu Proposal




(Source: http://www.mlit.go.jp/common/001112677.pdf)

# Yasuoka controversy 安岡沖風力反対運動

(images from Protesters' organizations web page)

# Proposed projects 計画中事業

# Policy initiatives

- ORE promotion by Ocean Policy HQ （海洋政策本部）
  - Ocean Basic Law of 2007 （海洋基本法）
- FIT rate
  - JPY 36/kWh (in 2014) [=10 NTD]
  - Grid connection and implementation issues
- Direct investments （直接投資）
  - Ministry of Environment （環境省）
  - Ministry of Economy, Trade and Industry（経済産業省）-> NEDO
- Designated port areas （港湾区域活用）
  - Ministry of Land, Infrastructure, Transport and Tourism（国土交通省）
- EIA guidelines （環境影響評価指針）
- Japanese version of EMEC （実証実験区画）
  - Renewable energy experimental fields (7 areas)

# Fishing rights 漁業権

- Common usage fishing rights（共同漁業権）
  - Local fishermen cooperatives own the right/title in return for maintaining a sustainable marine environment.
  - Extends to a few kilometers off-shore.
- Fishermen cooperatives（漁業協同組合）
  - Established under Fishery Cooperative Union Law （水産業協同組合法）
  - Endowed with the right for “just compensation” for disturbances to their operation.
  - Possible compensation for disturbances outside these designated fishing rights areas (risk to developers).
- Many cooperatives have experience of being compensated for land reclamation and other industrial usage (e.g., nuclear power plants).

# Hiring fishermen for the project

# Working with the community

# Maybe even “better” for fishing?

（1）魚礁効果の調査

◆基礎周辺の潜水観察（H25夏）


イシダイ・イサキ幼魚の群れ


メジナ・イシダイなどの群れ


カンパチ


マダコ

ビデオ

東京電力

# Other claimed nuisances

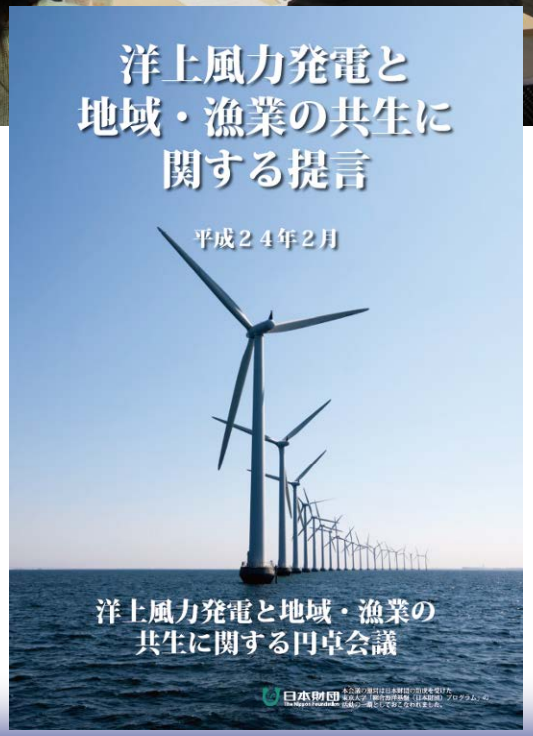
- Bird strike
- Low-frequency noise （低周波騒音）
- Visual impacts （景観影響）

- So far, not much dispute over offshore projects surfaced with these concerns
  - Yasuoka residents claim the risk of low-frequency noise.

# Offshore Wind Roundtable

## 洋上風力発電地域･漁業共生円卓会議

- Convened by the University of Tokyo/Masa matsuura
- **Explore possible mutual-gains (win/win) solutions for three key stakeholders: developer, local community, and fishermen cooperative.**
  - Eurus Energy Holdings
  - Kamisu City Hall
  - Kushikino City Fishermen Cooperative
- Four meetings held in 2011.
- Six recommendations for co-existence of three parties:
  - Environmental impacts
  - Joint venture with fishermen
  - Fishing-friendly design
  - Economic impacts
  - Utilizing for tourism
  - Distributed energy production



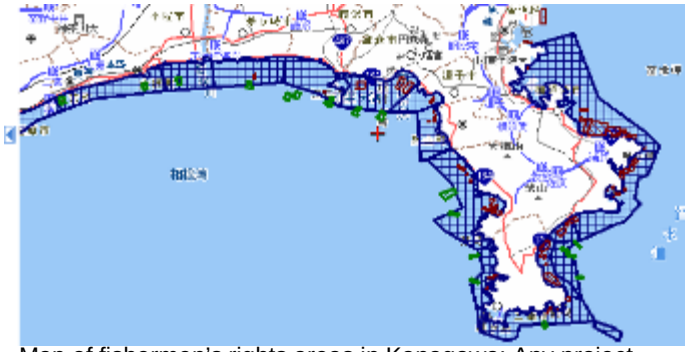
National Grants-in-Aid for Scientific Research
"Basic Research on Marine Spatial Planning and International Network Development" 2015.4-2018.3
海洋空間計画の策定と国際ネットワーク形成に関する基礎的研究

# Consensus Building for Offshore Windfarm Siting

## Background:

- Veto power of the local fishermen's cooperative
- Local oppositions to offshore windfarms in Japan

Fishermen and community members demonstrating against a 13-turbine proposal in Shimonoseki, Yamaguchi (http://www.asahi.com/articles/ASHB446TJHB4TZNB007.html)



Map of fishermen's rights areas in Kanagawa: Any project proposal in these shaded areas must obtain consent from local fishermen's cooperative

## Research question:

- What are the key processes for reaching an agreement with local stakeholders for offshore wind turbine siting?

## Method:

- Case studies on recent offshore developments in Japan
- Experimental offshore turbines in Goto (Nagasaki) and Choshi (Chiba) – both required intensive negotiation with local fishermen

Offshore turbine in Choshi and local fishing community of Togawa (Photo: Masa Matsuura)

# Outlook

- Use of “Port Areas”（港湾区域）
- Starting with small number of turbines
- Taking advantage of demonstration projects（実証実験）
- Working closely with local residents
- Government (national and local) agencies taking the lead in project （地方行政機關）