

SDGs Future City Kitakyushu City



The 3rd Kitakyushu SDGs Training

Renewable Energy in Kitakyushu City ~ Hibikinada area ~



Kitakyushu Ecotown Network





Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Data LDEO-Columbia, NSF, NOAA

Google Earth

Hibikinada Reclaimed Ground

- Low carbon
- Windmills
- Solar power

Comprehensive Environmental Industrial complex

Hibikinada biotope



Harmonious Coexistence with Nature

Kitakyushu eco town center

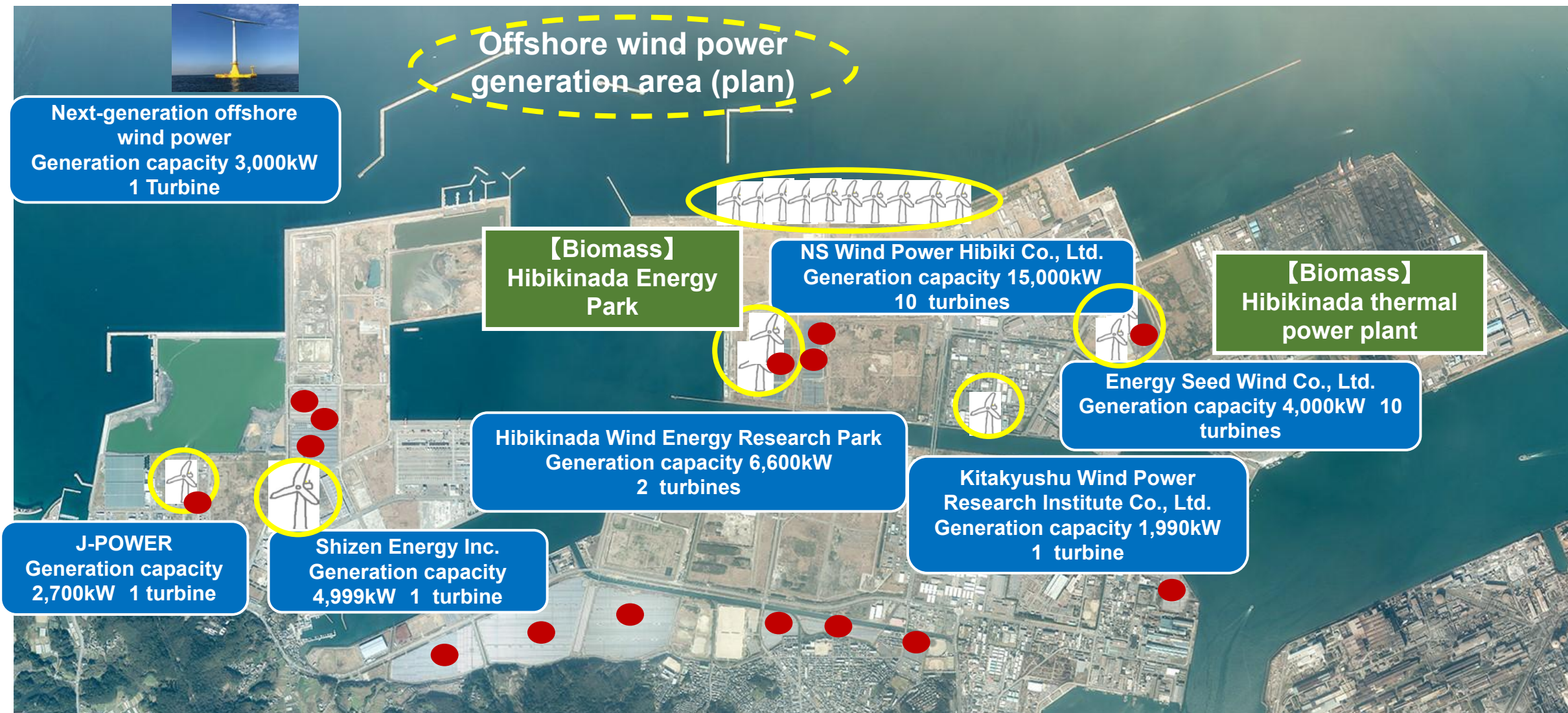


Landfill with an area of about 2,000 hectares. Utilizing the vast industrial land, "Eco Town", the recycling industry hub among others was established.

We have 3 Factors for Sustainable Society (Low Carbon·Resources Recycling· Harmonious Coexistence with Nature)



Renewable Energy in Hibikinada Area



Wind 38,289kW **Solar** 119,227kW **Biomass (mix burning)** 224,000kW

Power Scale of Kitakyushu City

As of end Jan. 2022
Data from the Environment
Bureau, Kitakyushu City

Energy of Kitakyushu City accounts for about 1% of Japan,
and about **10%** of Kyushu region

Generation Sources	Generation capacity	Ratio
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Thermal power	2,900,000kW	83%
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Biomass power (Including mixed fuel firing of coal)	270,000kW
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Solar power	300,000kW
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Wind power (1 st place in government-designated city)	38,000kW
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Hydropower	1,000kW
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**Renewable
Energy
17%**

Total	3,509,000kW
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About 60% (380,000 kW) of the renewable energy produced in Kitakyushu City is
from the Hibikinada area.

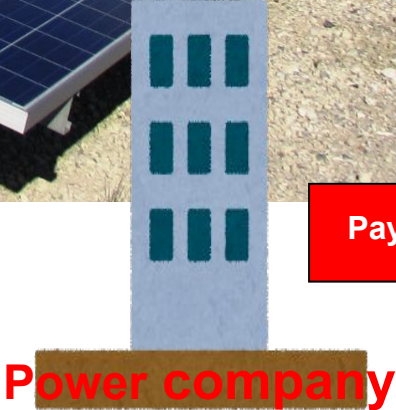
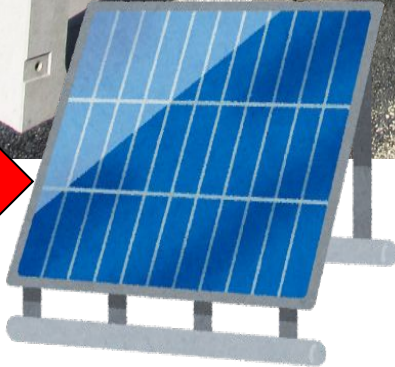
Kitakyushu Citizens' Solar Power Plant

Start of electric power sales
on September 1, 2013



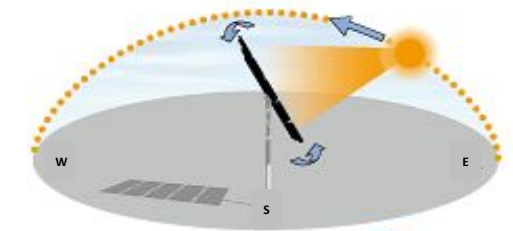
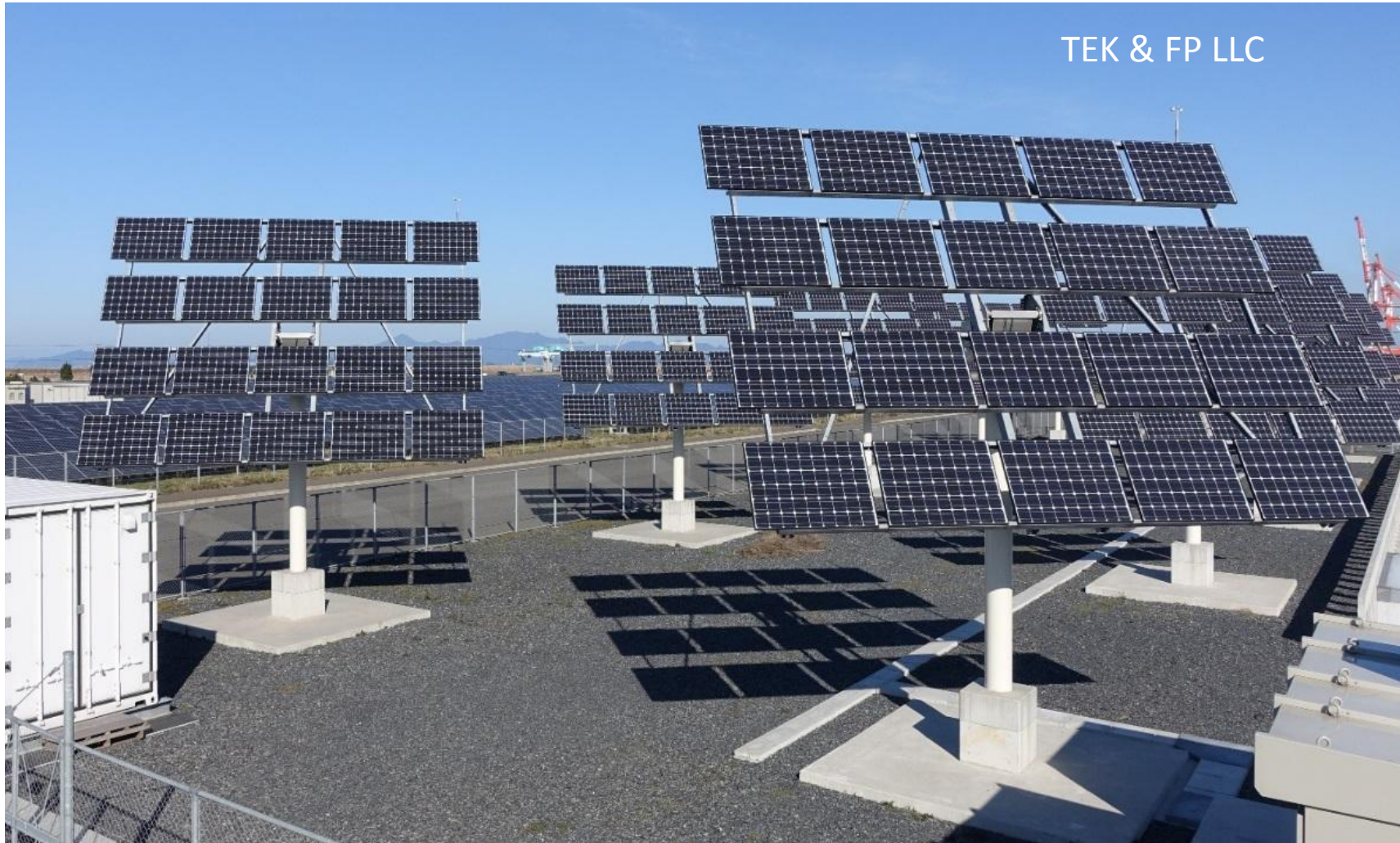
Generates 1.35 million kWh/year
Equivalent to power
for 400 general households

**Publicly-offered
bond**
Approx. JPY 500M
Donations
Approx. JPY 20M

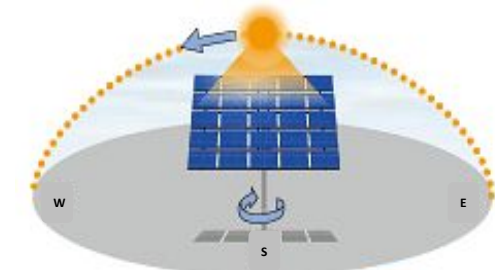


Profits are returned to the public to pay for greening and community activities.

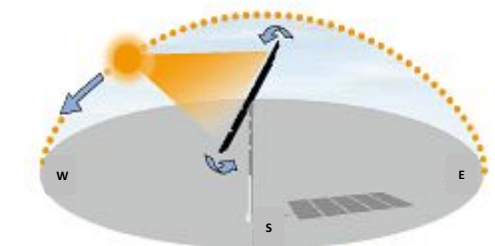
Tracking Photovoltaic System



Facing east, about 9:00 AM



Facing south, about 12:00 PM



Facing west, about 4:00 PM



- Solar panels automatically track the sun and change direction depending on the season and time of day
- Generates approximately 1.4 to 1.5 times more electricity than stationary types (according to a comparison by the Kitakyushu Eco-Town Network)

Biomass and Coal Mixed Firing Power Plant



Hibikinada Thermal Power Station
(Hibikinada Thermal Power Station co., Ltd.)
Generation capacity: 112,000kW



Hibiki Coal and Biomass Power Station
(Hibikinada Energy Park LLC.)
Generation capacity : 112,000kW

- Fuels are coal and woody biomass fuel (wooden pellets / wood chips)
- CO₂ reduction of up to 30% per year compared to coal-fired plants

Japan's very first large-scale offshore wind power generation project

Kitakyushu is a suitable site for offshore wind power

- Favorable wind conditions
- Well-developed port facilities
- Concentration of companies supporting the manufacturing industry
- Expansive industrial site located adjacent to the port



Kitakyushu Hibiki-nada Offshore Wind Farm

Construction will start in FY2022 and is slated for completion in FY2025

【Hibiki Wind Energy Co., Ltd.】

- Kyuden Mirai Energy Company, Incorporated
- Electric Power Development Co., Ltd.
- Hokutaku Co., LTD
- Saibu Gas Co. Ltd.
- KYUDENKO CORPORATION

【Overview】

generating capacity	9,500kW × 25units
Total height	About 200m
Rotor diameter	174m (blade length87m)
manufacturer	MHI Vestas Offshore Wind A/S

On a scale equivalent to the annual electricity consumption of **approximately 170,000 households**

Next-generation Offshore Wind Power Generation System "Hibiki"



Source: Website of the demonstration project of next-generation floating offshore wind turbine

Potential & Future of the Hibikinada Area

- **Renewable energy cluster**, energy hub in northern Kyushu
- The amount of renewable energy introduced in the Hibiki-nada area accounts for **more than 60%** of the city's renewable energy
- Japan's first **large-scale offshore wind power project (approx. 220,000 kW)**.
Construction slated for completion in FY 2025
- Designated by the Ministry of Land, Infrastructure, Transport and Tourism as the **only base port in western Japan** in September 2020
- Demonstration project for the **production of CO₂-free hydrogen** using renewable energy in the Hibikinada area (Planned until FY 2022)
- Kitakyushu aims to achieve the creation of **Japan's first 100% renewable energy Eco-Town**, using as many renewable energy sources in the Hibikinada area as possible.
- Kitakyushu aims to **use 100% renewable energy to power all public facilities in the city**
(by 2025).

The future of energy, aimed by Kitakyushu City in the Hibikinada area



Next-generation offshore
wind power generation



Wind power promotion area



Designated as the only
base port in western
Japan



Production and storage of
hydrogen

Supply of RE100
electricity



Ecotown

Recycling of PV-battery

Eco-town of 100%
Renewable electricity



Factory



Household

Kitakyushu Eco-Town Center



(Exterior view of main building)



(Exterior view of annex)



- Supports the Eco-Town Project, observation tours and visitors to Energy Park, and environmental learning
- **Main building:** Displays and showcases environmental and recycling technologies and products from companies and research institutes located in Eco-Town
- **Annex:** Displays and showcases technologies and products from local environmental companies, and **introduces the Next Generation Park**

Eco-Town Center



Wind power plant



Tracking-type solar power generation



Biomass thermal power plant



Thank you for your attention



**General Incorporated Association
Kitakyushu Ecotown Network**