Outlook of Kyuden Mirai Energy

April 1, 2024

Kyuden Mirai Energy

Brighten our future though renewables

Kushima Wind Power Plant
(Kushima City, Miyazaki Prf., 64,800 kW, COD: October 2020)

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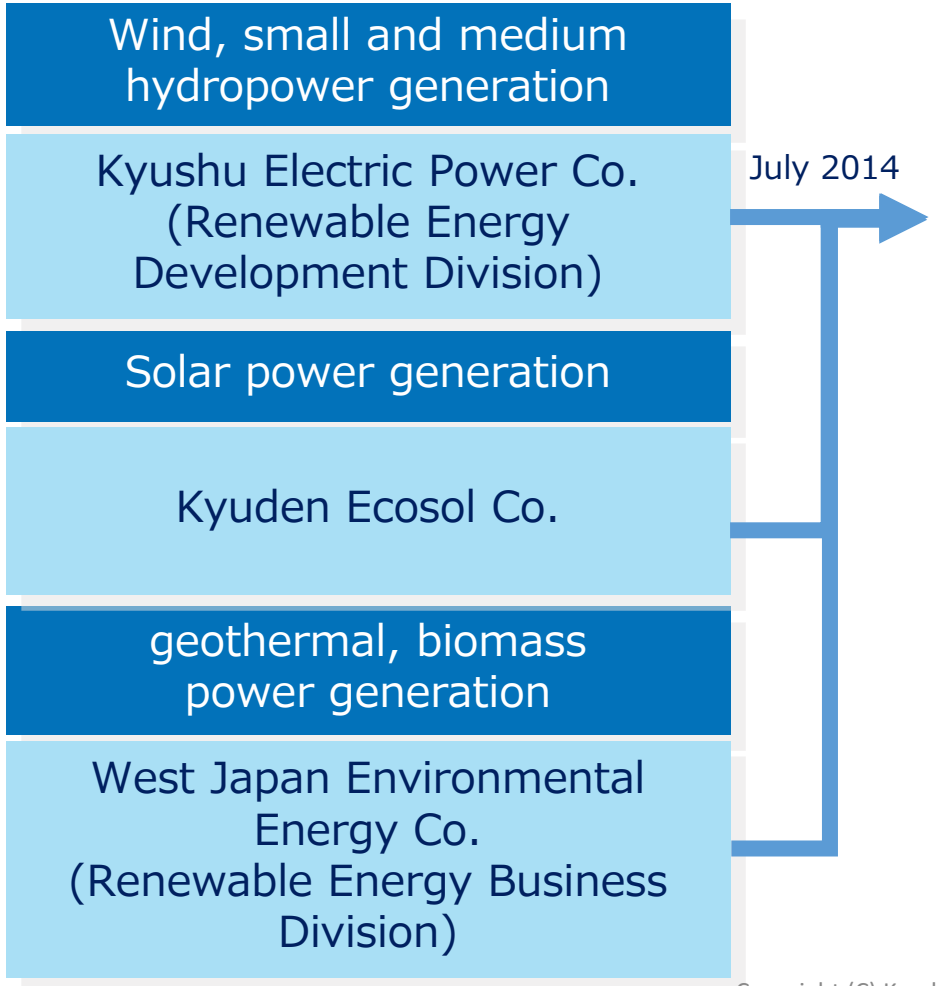
Background of the establishment of Kyuden Mirai Energy

- Established in July 2014 by **consolidating the renewable energy divisions of the Kyushu Electric Power Group** to provide a one-stop, speedy approach to renewable energy development.
- Started **retail electricity business in the Kanto and Kansai areas** in April 2016, in line with the total deregulation of electricity retailing.



Kyuden Mirai Energy

Capital stock	11,570.15 million yen
Shareholders	100% Kyushu Electric Power Co.
Number of employees	310

(April 1, 2024)

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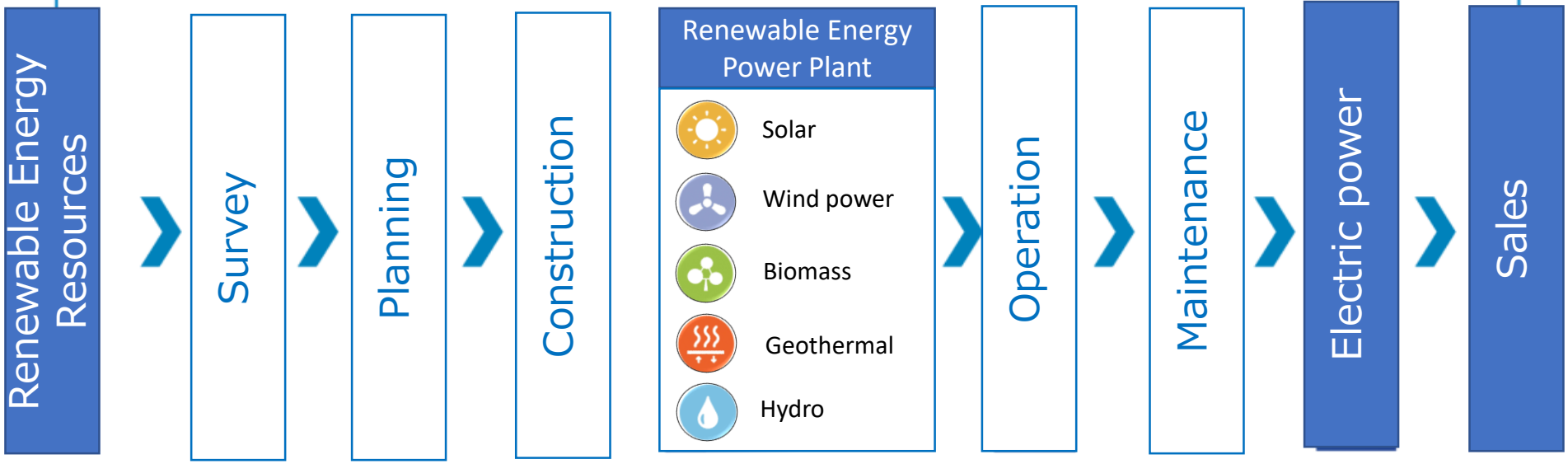
Features of Kyuden Mirai Energy

- Conducting business based on **in-house development and long-term ownership of** renewable energy generation facilities.
- Conducting **research, operation**, and **sales** of **five major renewable energy sources** (solar, wind, biomass, geothermal, and hydro).
- Achieving **high efficiency** and **high operation** with technical capabilities based on over 100 years of experience in power supply development and operation by Kyushu Electric Power Group.

One-stop implementation of processes from development to operation and sales



- We also sell **RE100 electricity** using **non-fossil certificates derived from our renewable energy sources.**

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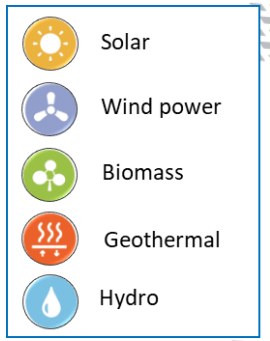
Renewable Energy Development Status

(In operation + Under Construction + Planned) End of FY2025

Renewable Energy Power Plants

In Operation
+ Under construction
+ Planned



Ishikari New Port Biomass Power Plant（Hokkaido）

Hirohata Biomass Power Plant（Hyogo）

Shimonoseki Biomass Power Plant（Yamaguchi）

Kitakyushu Hibikinada Offshore Wind Farm (Fukuoka)
<Under construction>

Karatsu・Chinzei Wind Farm（Saga）

Kanda Biomass Power Plant（Fukuoka）

Miya River Watarai Solar Park（Mie）

Oita Biomass Power Plant（Oita）

Nakagusuku Biomass Power Plant (Okinawa)

39 Plants

1,313,532 kw

*As of April 2024

*Development and operation of power plants in Japan and overseas, including in-house development, alliances with business partners, and subsidiaries

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Hibikinada Offshore Wind Farm

- Kitakyushu City launched the Green Energy Port Hibiki concept in 2010 to promote the accumulation of wind-related industries.
- The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) revised the Port and Harbor Law in 2016, and **Kitakyushu City became the first city in Japan to invite public participation in the long-term occupation of its sea area** (for 20 years) (the first project under the revised law).
- As a result of a public solicitation, **the consortium led by Kyuden Mirai was selected as the business operator,** and a basic agreement was signed with Kitakyushu City on January 10, 2018.

Development of offshore wind base port

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Hibikinada Offshore Wind Farm

Project Summary

- SPC: **Hibiki Wind Energy Corporation** [Investors: **Kyuden Mirai Energy**, J Power, Hokutaku, Saibu Gas, Kyudenko]
- Power generation: 220MW (9.6MW x 25 units)
- Project scale: approx. 175 billion yen (plans under scrutiny)
- Start of construction: March 2023, Planned installation: FY2025

Wind turbine model

- Japan's first large wind turbine with a single unit capacity of 9.6MW

Model	V174-9.6MW
Output	9.6MW
Blade layout	Upwind
Rotor diameter	174 m
Receiving air surface area	23,779 m2
Hub height	Approx. 110 m
The highest point	Approx. 200 m
Type certification	IEC-Class IB, T

Image of wind turbine

*Photo courtesy of Vestas Wind Systems A/S

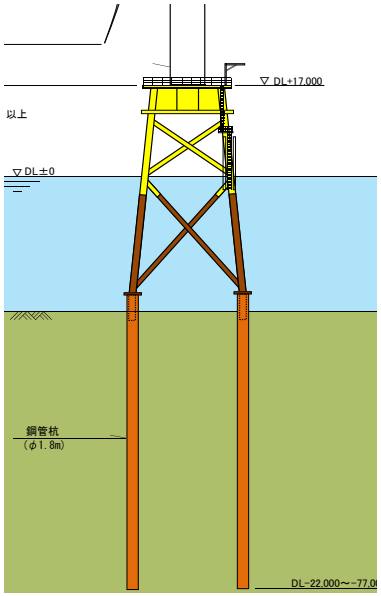

Image of a pile-type jacket foundation

Selection of wind turbine foundation type

- Pile-type jacket foundation, a technically safe and reliable foundation type, is adopted.
- This foundation type has been adopted in many port and marine structures in Japan and overseas.

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Kyushu Electric Group Carbon-Neutral Vision 2050

Low and decarbonized power supply (supply side)

Renewables and storage

Conversion to mains power

- Promotion of renewable energy development
- Integrated control technology for DER

Solar

Wind

Hydro

Geothermal

Storage of electricity

Nuclear power

Maximum utilization

- Improve facility utilization
- Consideration of Next generation light water reactor, SMR,HTGR, etc.
- Consideration of hydrogen production

Thermal power and new technologies, etc.

Virtually zero CO_2 emissions

- Increase efficiency
- Hydrogen and ammonia production, study of cofiring, Consideration of hydrogen production
- Study on the application of carbon recycling technology

CCUS※/ Carbon Recycling

CO_2

Biomass

※CO_2 capture, effective utilization, and storage

Electricity

Non-fossil electricity

Heat

Networks

Next-generation power transmission and distribution networks

- Wide-area operation of networks
- Advancement of supply and demand operation and grid stabilization technologies

Promotion of electrification (demand side)

Electrification of each sector

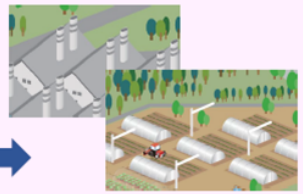
Maximum electrification

- Promotion of all-electric housing, Electrification of air conditioning, hot water supply, and kitchen in commercial facilities. (Home and business)
- Technical research on heat source conversion equipment, electrification for heat demand for wide range of temperatures (Industrial)
- Consideration of projects and services to promote EVs (Transportation)
- Feasibility study of hydrogen supply, etc.

Electricity

<Home and Business>

<Industry>



<Transportation>

Hydrogen

Supply

Local Energy

Co-creation of a zero-carbon society with local communities

- Contribution to the construction of a regional energy system
- Adding value to cities and communities

Our mission, our future

We challenge to achieve carbon neutrality earlier than 2050 and “carbon minus” beyond that.
We aim to create a sustainable society.

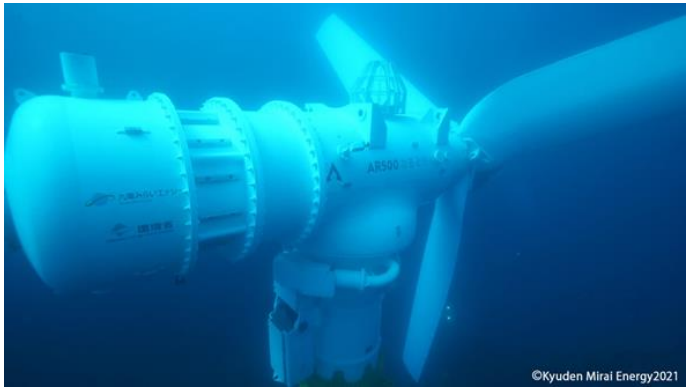
Higashi-Hiroshima Mega Solar Power Plant
(Hiroshima Prf., 1,000 kW)

Karatsu Chinzei Wind Farm
(Saga Prf., 27,200 kW)

Hatchobaru Geothermal Power Plant
(Kagoshima Prf., 110,000 kW)

Fukuoka Woody Biomass Power Plant
(Fukuoka Prf., 5,700 kW)

Kamoshishi Hydroelectric Power Plant
(Kumamoto Prf., 1,990 kW)



Tidal power generation demonstration project with Ministry of the Environment
(Nagasaki Prf., 500 kW)

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