

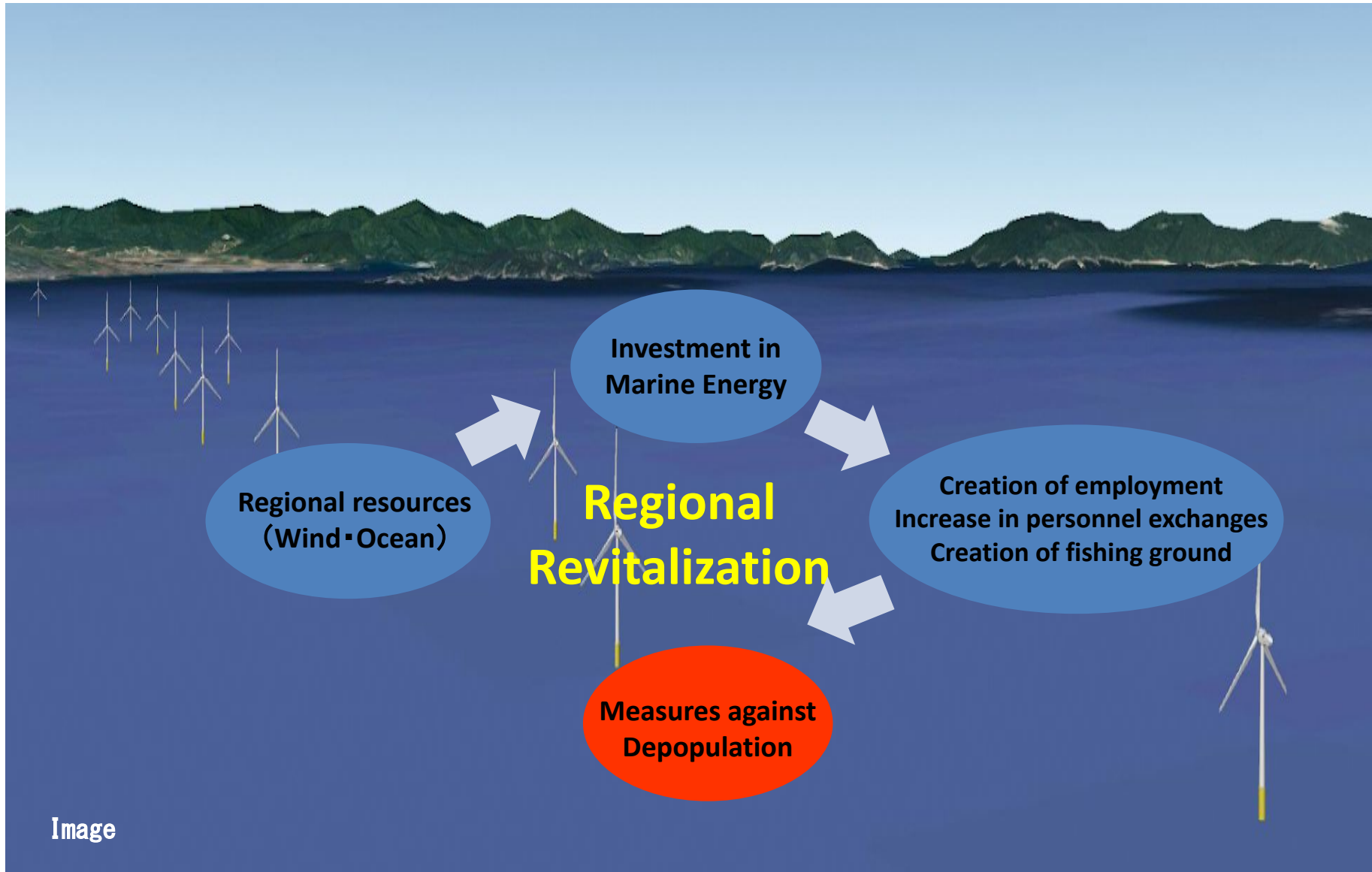
Online Training to learn the frontrunner SDGs and Zero Carbon Cities in Kyushu

Making the Entire Island Carbon Neutral

Goto City of Nagasaki Prefecture

Japan's First Grid-Connected
2MW Floating Offshore Wind Turbine
in Sakiyama Sea





Image

Introduction of Renewable Energy

FY2020



○Floating Offshore Wind power
2,000kW (1 turbine)

○Large On-shore Wind power
25,200kW (11 turbines)



○Small On-shore wind power
352kW (18 turbines)

⇒**25,287Mwh/year**



Solar power generation
(including household)
▪ **52,512kW (1,562 panels)**
⇒**66,892Mwh/year**



Hydro power
▪ **320kW (1 plant)**
⇒**1,218Mwh/year**

Quick charging
station
8 stations (7 areas)



EV cars
▪ **155 cars**



Mini -mobility
▪ **3 cars**



EV moped bikes
▪ **4 bikes**

FY2020 Self-sufficiency ratio of renewable energy in Goto City (estimation)
Production of renewable energy / Electricity Consumption

in the Goto City ≒ **56.3%**

Creating a Renewable Energy Island

Challenges ahead in the (practical) development of a floating offshore wind farm in Goto City

Goto City's Strengths

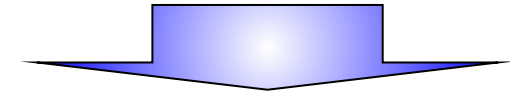
Good wind conditions and water depth makes Goto a suitable location for installing a wind farm.

Ways to build consensus is being planned with fishers and other stakeholders.

◆ Effects of practical application
Regeneration, revitalization, and job creation in the Goto area, attraction and relocation of companies, other

Goto City's Weaknesses

Core power grid, including undersea cables, is too weak to transmit electricity.

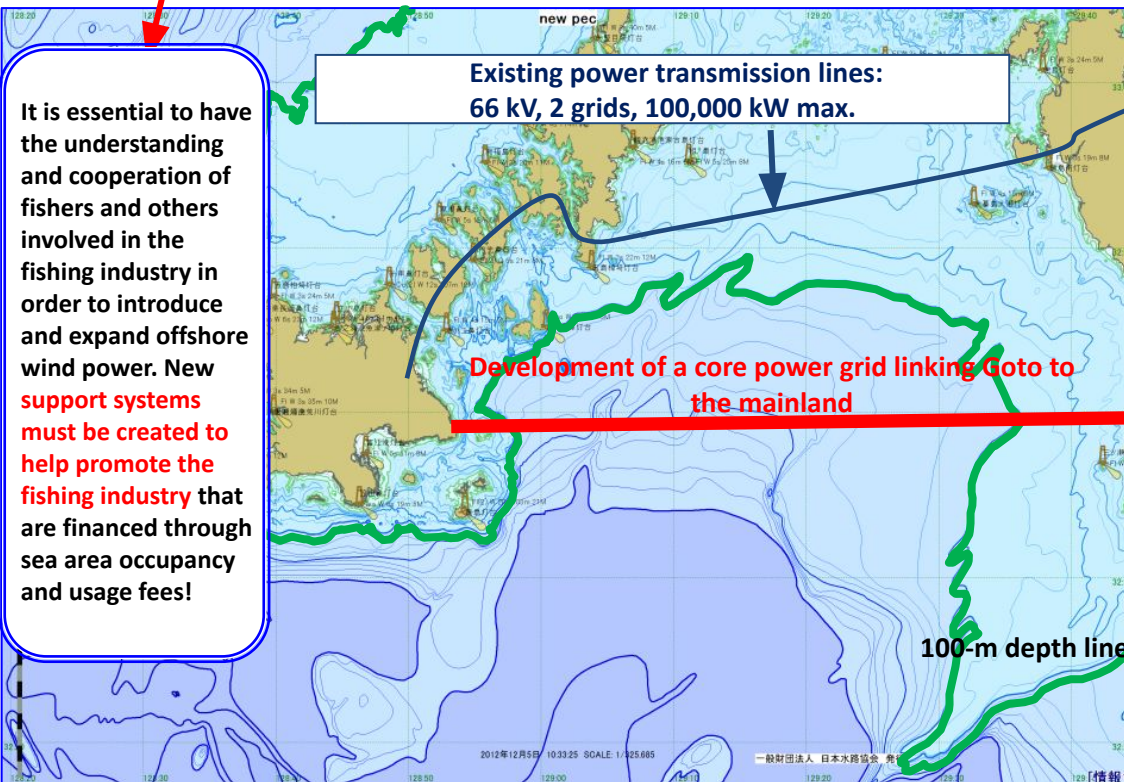


The development of a power grid is essential for the creation of a zero-carbon city!

- ① Expand the operations of existing power grids
⇒ Revise Electricity Business Act
- ② Develop new core power grid
⇒ Maintain as a public utility

(Reference)

Wind farm
100 5-MW wind turbines = 500,000 kW
(FY 2012 Feasibility study on practical applications)

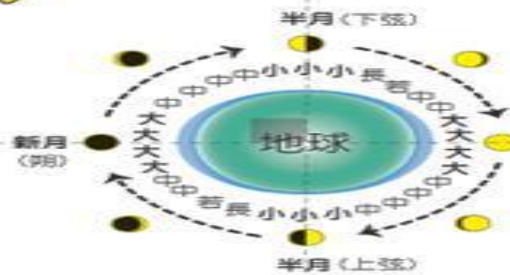


Ministry of the Environment Pilot Project for Promoting Practical Application of Tidal Power Generation System

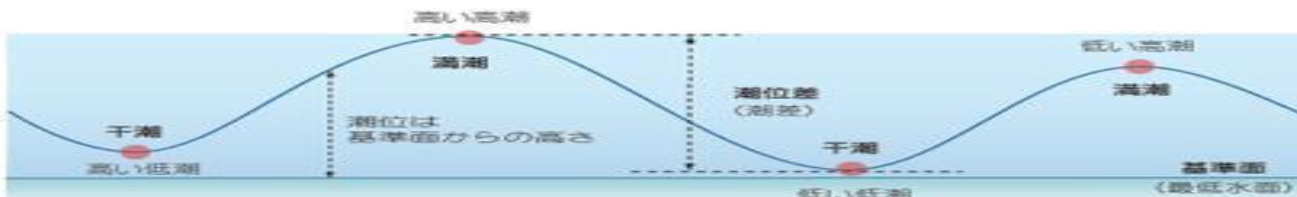
潮汐流を引き起こす力と 約一カ月の潮汐サイクル

太陽と月と地球が一直線に並び、
引力の影響が強くなって潮位差が大きくなる
→大潮（回り）は月2回訪れる

太陽と月と地球の位置が直角になると
引力が打ち消し合って潮位差は小さくなる
→小潮（回り）は月2回訪れる

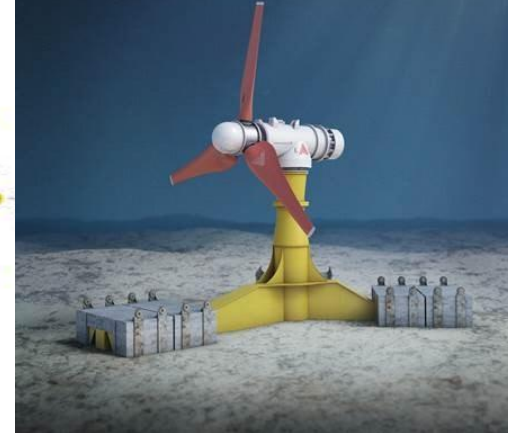


干満の動きと主な呼称



- 2016 Joint pilot project of MOEJ and METI started
- 2021 500kW machine installed
- 2022 MW-class generator installed by MOEJ pilot project (650 million yen)

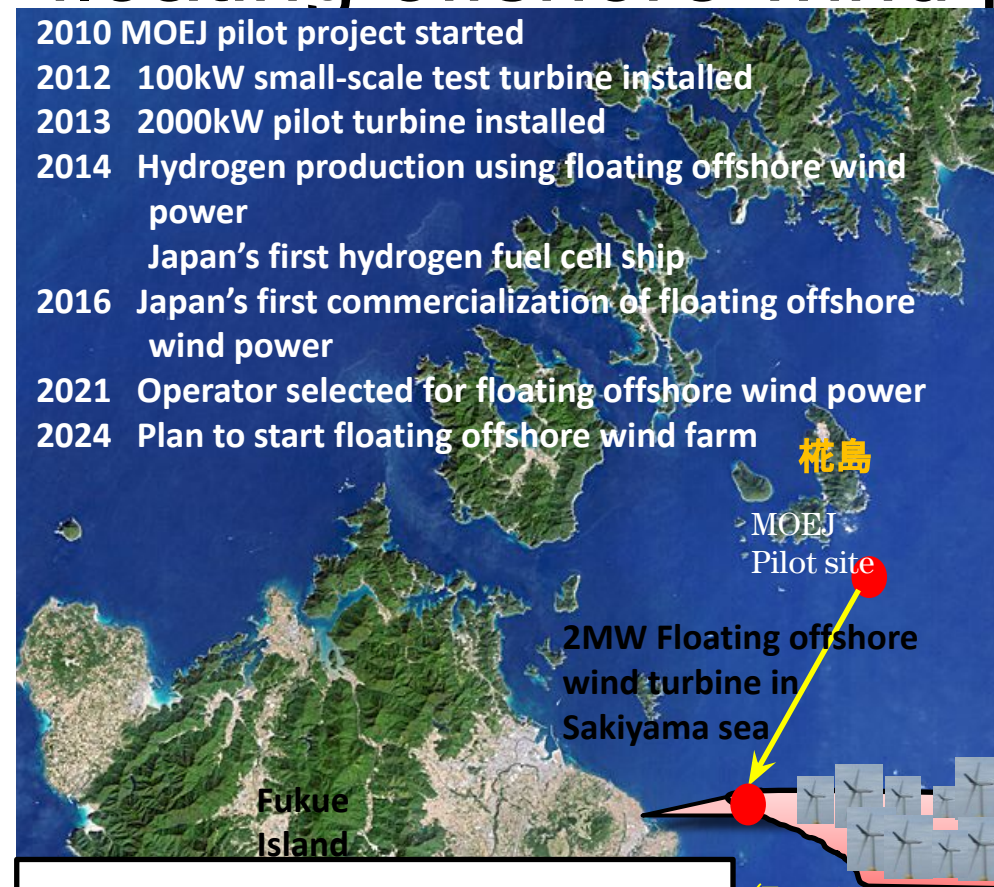
Device by SAE company



Device	AR500 (Pilot project)
Output	500kW
Blade diameter	About 17m
Height	20~23.7m
Weight	About 1550t
Rotation	7~15rpm

Commercial and practical use of floating offshore wind power generation

- 2010 MOEJ pilot project started
- 2012 100kW small-scale test turbine installed
- 2013 2000kW pilot turbine installed
- 2014 Hydrogen production using floating offshore wind power
- Japan's first hydrogen fuel cell ship
- 2016 Japan's first commercialization of floating offshore wind power
- 2021 Operator selected for floating offshore wind power
- 2024 Plan to start floating offshore wind farm

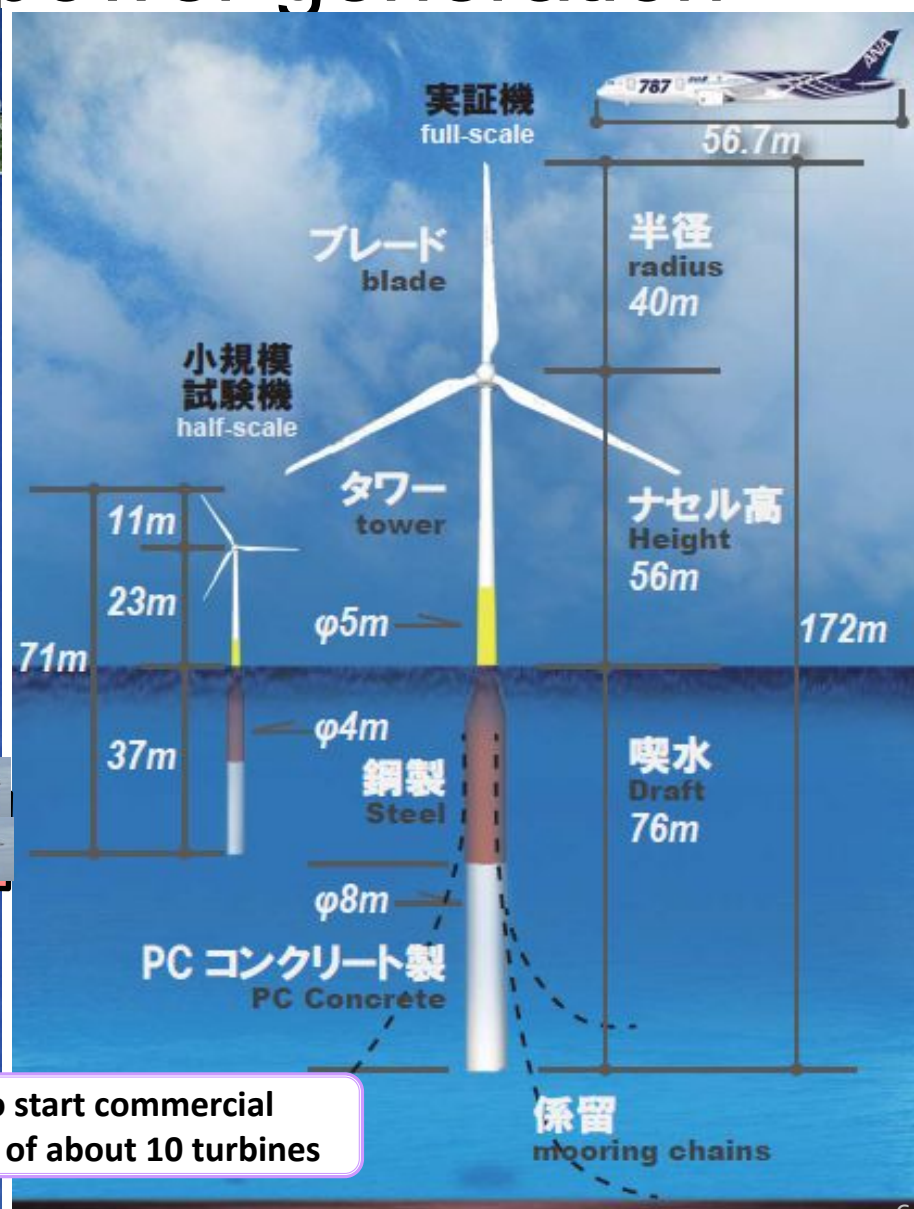


Started commercial operation as Japan's first offshore wind power plant to which offshore wind FIT is applied (Mar. 2016~)

- Selling to Kyushu Electric Power
- Power generation capacity is 2 MW (Equivalent to 1800 households)

(Tentative)
Goto City
Offshore Wind
Power Generation
Project

Aim to start commercial operations of about 10 turbines



Promoting the Development of a Marine Renewable Energy Island!

Promoting the installation of floating offshore wind power!!

Winds and tides are also valuable assets. The advantages gained from these assets will be returned back to local residents, leading to the sustainable development of Goto.

1. Creates jobs

Maintenance, manufacturing and other related industries and jobs can be created, leading to long-term employment (as power generation projects generally last for 20 years).

○Employment

- No. of related businesses
FY 2019: 89 people, 9 companies
FY 2020: 94 people, 9 companies

○Economic ripple effect (projected)

Financial: Approx. JPY 4.1 billion
No. of people employed: 360

2. Secures independent financing

Tax revenue from depreciable property and corporation taxes can be secured for the long term and used to improve the quality of life and livelihoods of residents.

○Tax revenue

- 20 years of tax revenue projected to be generated from property tax (depreciable property tax (fixed assets))

○Improved lifestyles

- Expanded social security systems, including health and welfare
- Expanded support for maternity and childcare
- Development and maintenance of

3. Protects the environment

Goto's beautiful and abundant waters can be protected and further enriched together with the fishing industry and passed down to the next generation.

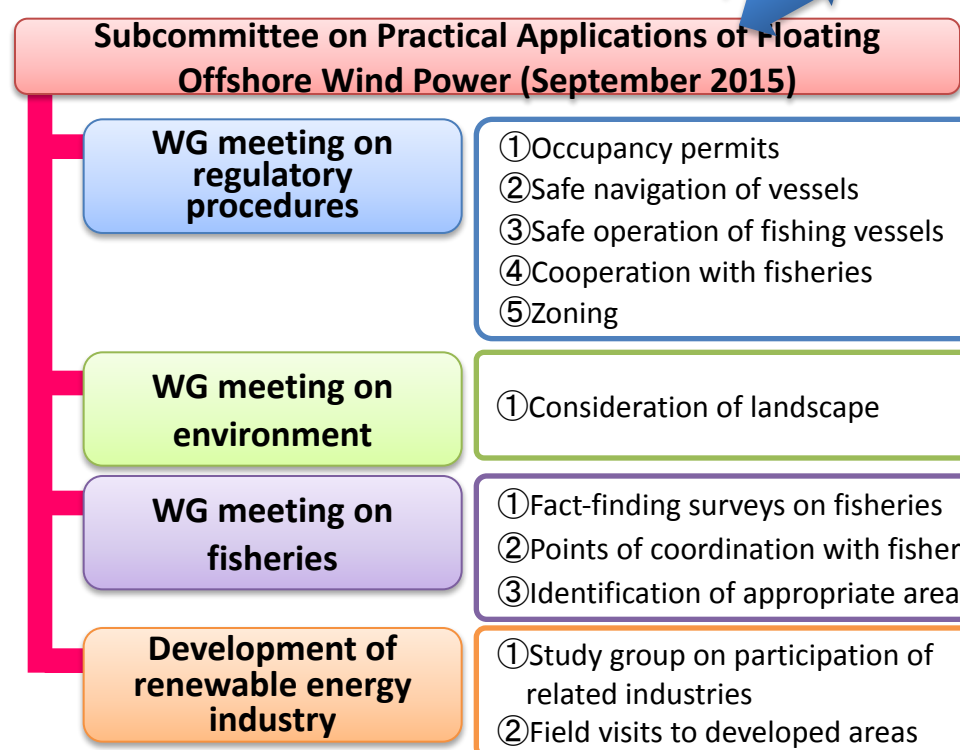
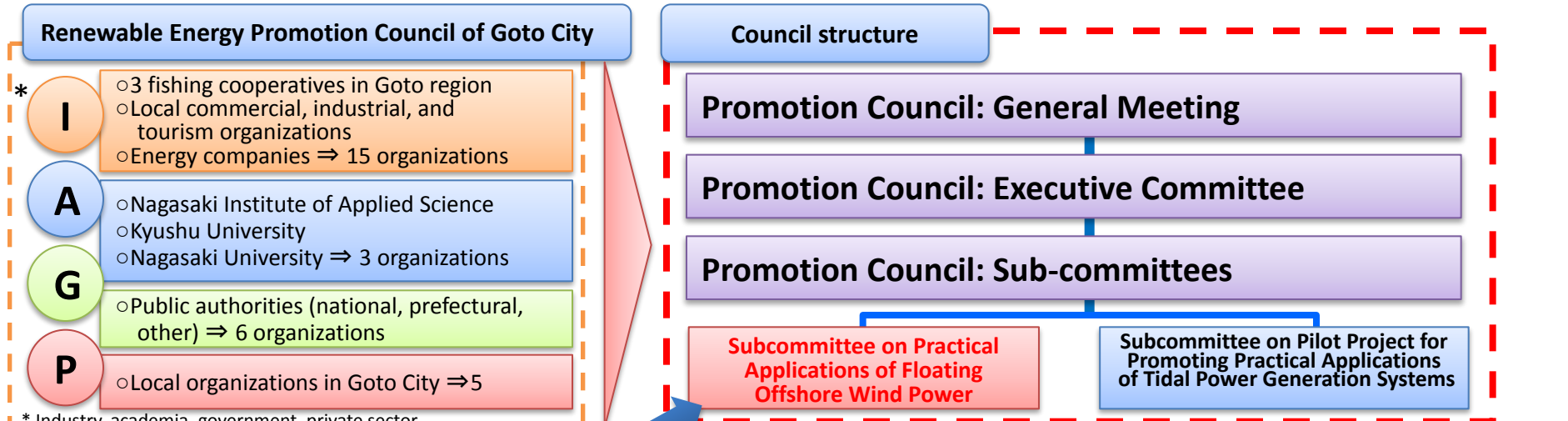
○Co-existence with fisheries

- Creation of new fisheries through the effects of catching fish
- Restoration of seaweed beds and coral reefs

○Environment

- Local production for local consumption
- Climate change measures

Project Implementation Structure (Renewable Energy Promotion Council of Goto City) Est. January 2014



Promoting Committee for Renewable Energy Industries in Goto City

Committee established in June 19, 2015 comprising 19 local businesses from within Goto City that aims to encourage the participation of local stakeholders in the renewable energy industry.



- Manufacture and assembly of support components for floating wind turbines
- Participation in maintenance
- Development of ecotourism

Awareness-raising Activities and Observation Tours

Visitors by fiscal year | Average = 843 visitors (Visitors from outside the city = 732)

FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
40 groups	35 groups	84 groups	106 groups	55 groups	63 groups	96 groups	95 groups	21 groups (605 groups)
378 visitors	437 visitors	1,449 visitors	1,685 visitors	707 visitors	733 visitors	1,101 visitors	836 visitors	257 visitors
(Total visitors)	(815)	(2,264)	(3,949)	(4,656)	(5,389)	(6,490)	(7,326)	(7,583)
No. visitors from Goto City								
19	106	44	245	134	171	229	14	33 (Total 995)
No. visitors from outside Goto City								
359	331	1,405	1,440	573	562	872	822	224 (Total 6,588)

- Review in FY 2018 on developing a charge system for observation tours and centralizing points of contact for accepting observation tours.
- Establishment of Goto Marine Energy Tours (website for applying for observation tours)
- City Tourism Association serves as site administrator, coordinates itineraries with applicants and provides on-site guidance.

【Analysis】

The high number of visitors in FY 2014 and FY 2015 is due to the installation of a 2-MW demonstration turbine.

Education activity

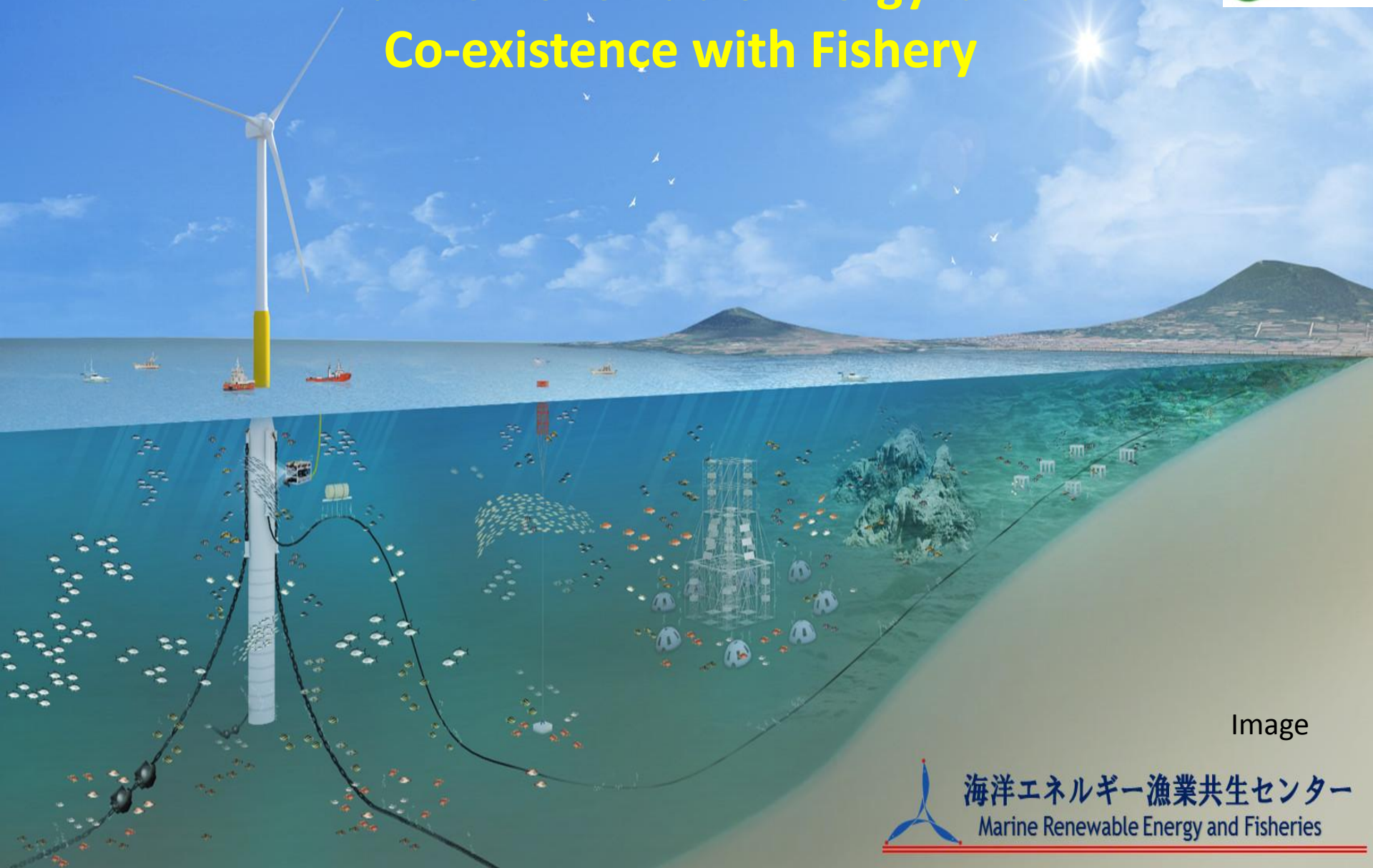


Co-existence with Fishery (Afforestation of Ocean)



Fish clustering to a windmill like a giant tree over 70m

Marine Renewable Energy and Co-existence with Fishery



Image



海洋エネルギー漁業共生センター
Marine Renewable Energy and Fisheries



Building a sustainable socio-economy where profits circulate in the region



Vibrant community development and partnership from the perspective of SDGs Regional Power Producer and Supplier



Agreement on the Creation of a Sustainable Society through a New Regional Energy Model

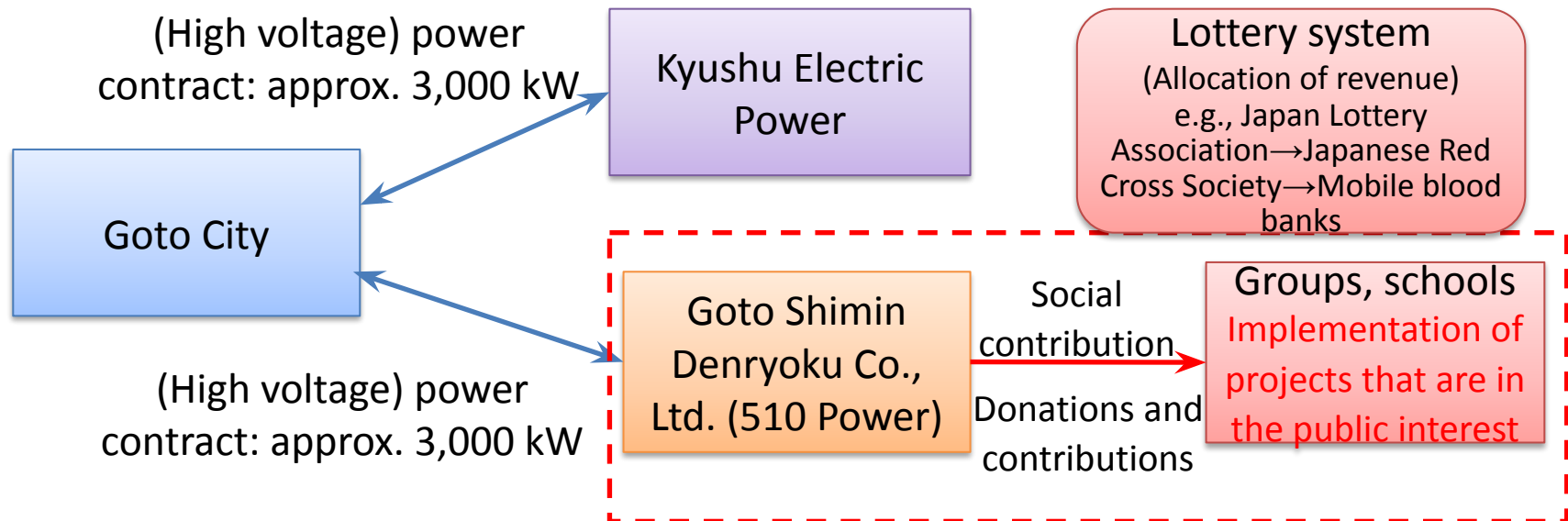
Background & Purpose

○Background and Progress

- The Renewable Energy Promotion Council of Goto City conducted studies and surveys on the establishment of a new regional power producer and supplier between FY 2016 and FY 2018 utilizing a project under the Ministry of Agriculture, Forestry and Fisheries to support plans for the local production of renewable energy for local consumption in rural villages.
- The Promoting Committee for Renewable Energy Industries in Goto City, comprising local commercial and industrial enterprises and organizations, became the founder of Goto Shimin Denryoku Co., Ltd. (510 Power) on May 28, 2018.
- On May 24, 2019, Goto City and 510 Power signed an agreement on the creation of a sustainable society through a new regional energy model.

○Objective

The project aims to encourage the realization of a zero-carbon city by supplying 100% renewable energy and CO₂-free electricity to city-related facilities, working together to create sustainable local communities by returning some of the profits back to local areas as a contribution to society.



Social Contribution Projects by Goto Shimin Denryoku (510 Power)



Project Name	Details
Thank You Gift PJ	Aims to expand production and conduct PR by utilizing specialty products from Goto City as thank you gifts for off-island customers with which it has electricity supply contracts
Camellia Regeneration PJ	Aims to regenerate camellia trees that are not well managed due to an aging population to increase farmers' incomes, and expand the production of camellia oil
Photovoltaic Roof Leasing PJ (third-party ownership model)	Aims to encourage the installation of PV panels in public and private facilities by third parties to reduce electricity costs and expand the use of renewable energy
Smart House Demonstration PJ (Expanded use of EVs)	Aims to expand the use of EVs and develop a disaster-resilient city by conducting a demonstration and studies on smart houses using electric vehicles as storage batteries in conjunction with the Photovoltaic Roof Leasing PJ
Eco-Bag Promotion PJ	Aims to plan and produce eco-bags for distribution as promotional materials at distributors to encourage the reduced use of plastic bags in preparation for the introduction of fees for plastic bags from 2020
Neighborhood Association Activity Support PJ	Aims to support neighborhood association activities with the installation of PV panels at community centers by third parties to reduce electricity costs, in conjunction with the Photovoltaic Roof Leasing PJ
School Educational Activity Support PJ	Aims to support environmental education, club activities, and volunteer activities at local elementary and junior high schools with the use of profits from electricity sales

GOTO RE100

What is RE100?

Initiative aiming to use renewable energy to cover all electricity demand in business activities



1st GOTO RE100 Certification
Award Ceremony (September 27, 2021)

Fukue Chamber of Commerce and Industries

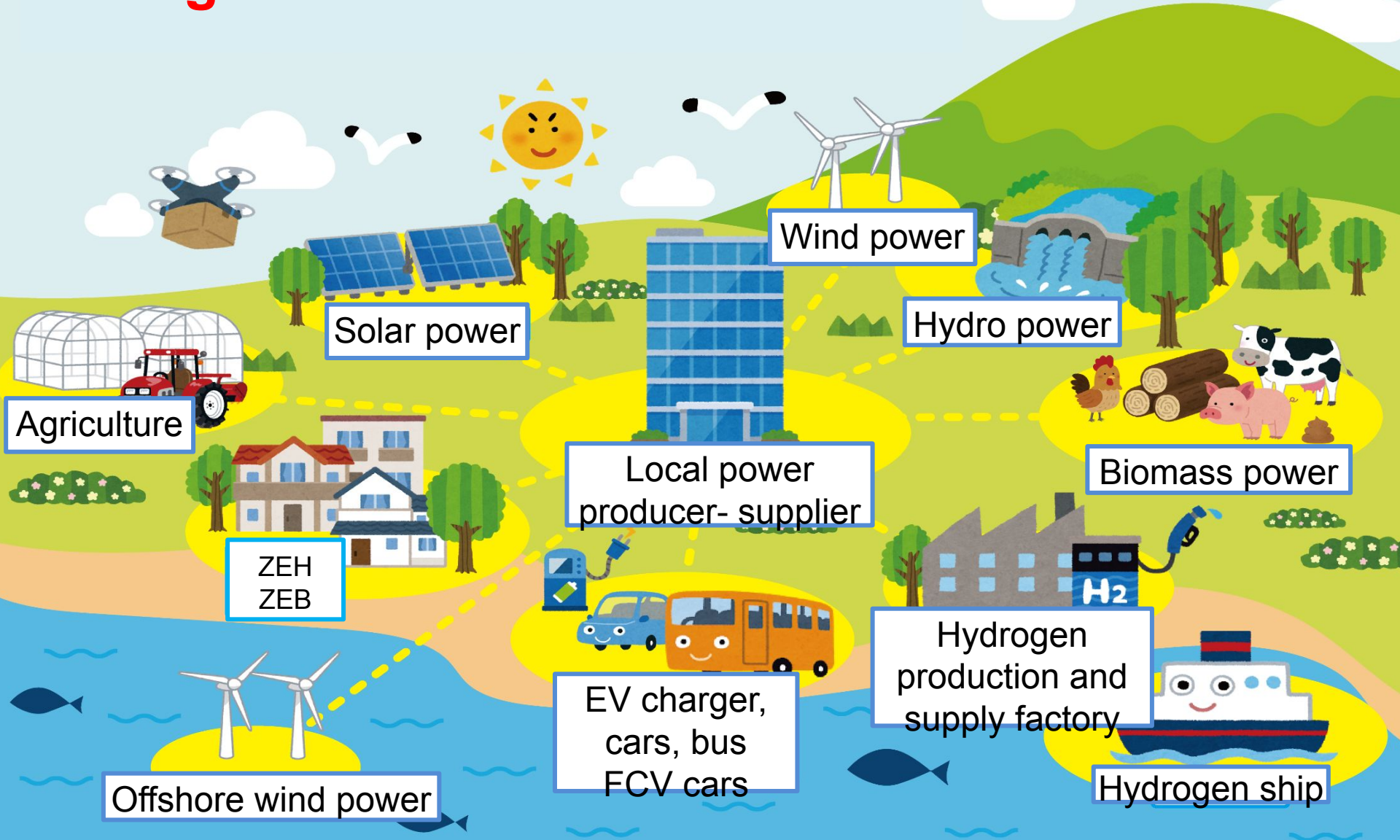
GOTO RE100 Certification Committee

Certifies businesses that have declared their intention to utilize 100% renewable energy produced in Goto and achieve carbon zero

Certification requirements

- Declaration of support for and implementation of the objective of decarbonizing electricity used by companies and organizations
- Deadline for achieving targets within five years after formulating plans
- Preparation of a long-term action plan that will serve as the basis for the declaration, and submission of a performance report to the committee each year.
- Designation of at least one business site using electricity produced in Goto to achieve 100% renewable energy and carbon zero.

Making the Entire Island Carbon Neutral





**May the children smile
50 or 100 years from now.**

Thank you for your a