Management Topics

* Excerpt from "Management Overview" and "Management Reference Materials".

November 2022

The Okinawa Electric Power Company, Inc.

Financial Results for FY2022 2Q YTD (Year-on-Year Comparison)

(Unit: million yen, X)

	Consolidated (A)			Non-consolidated (B)			(A) / (B)	
	FY2021 2Q YTD (Results)	FY2022 2Q YTD (Results)	Rate of Change	FY2021 2Q YTD (Results)	FY2022 2Q YTD (Results)	Rate of Change	FY2021 2Q YTD (Results)	FY2022 2Q YTD (Results)
Sales	87,782	118,738	+35.3%	84,258	114,888	+36.4%	1.04	1.03
Operating income	5,155	-22,518	–	4,545	-22,905	–	1.13	–
Ordinary income	5,074	-22,473	–	4,672	-22,709	–	1.09	–
Net income	3,847*	-16,819*	–	3,761	-16,871	–	1.02	–

* Net income attributable to owners of parent.

【Revenue】

- Increase in Sold power to other suppliers and income from the Fuel cost adjustment system in Electric business.

【Expenditure】

- Increase in Fuel costs and Purchased power costs due to soaring fuel prices in Electric business.

【Profit】

- Profit deteriorated significantly in Electric business because some of the increased costs associated with soaring fuel prices have not been reflected in Electricity sales.

Annual Outlook Summary FY2022

(Unit: million yen, X)

	Consolidated(A)				Non-consolidated(B)				(A) / (B)	
	FY2021 (Results)	FY2022 (Forecasts) Announced in Jul. 2022 (I)	FY2022 (Forecasts) Announced in Nov. 2022 (II)	Change (II) - (I)	FY2021 (Results)	FY2022 (Forecasts) Announced in Jul. 2022 (I)	FY2022 (Forecasts) Announced in Nov. 2022 (II)	Change (II) - (I)	FY2021 (Results)	FY2022 (Forecasts)
Sales	176,232	219,000	223,000	+4,000	168,078	208,600	212,600	+4,000	1.05	1.05
Operating income	2,810	-39,800	-46,500	-6,700	465	-41,300	-48,000	-6,700	6.04	–
Ordinary income	2,717	-40,000	-47,000	-7,000	500	-41,500	-48,500	-7,000	5.43	–
Net income	1,959	-30,800	-41,600	-10,800	694	-31,700	-42,500	-10,800	2.82	–

* Net income attributable to owners of parent.

［ Comparison with previous forecasts (Jul.2022) ］

【Revenue】

- Increase in Electricity sales due to increase in Electricity sales volume.
- Increase in Sold power to other suppliers in Electric business.

【Expenditure】

- Increase in Fuel costs and Purchased power costs in Electric business.

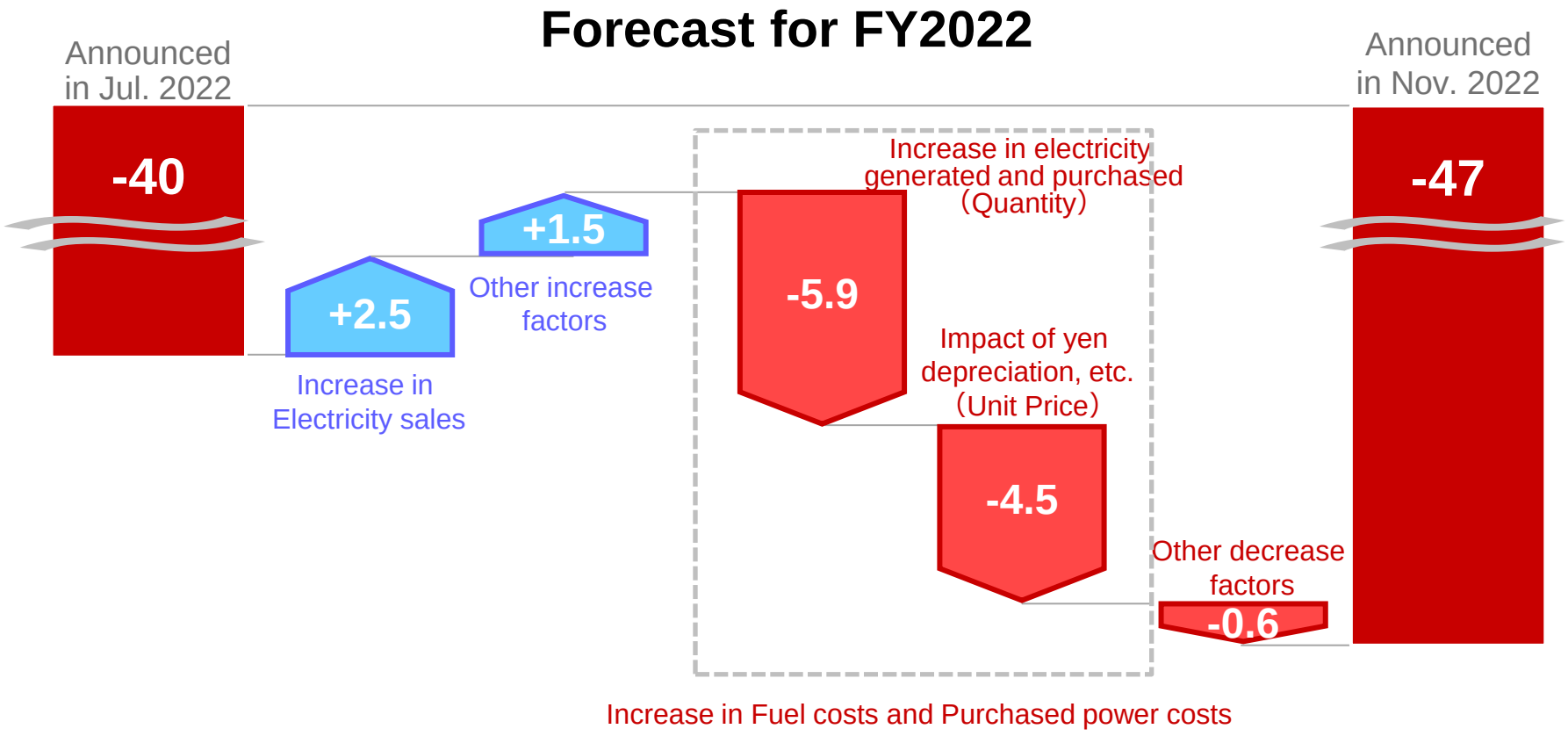
【Profit】

- Profit is expected to deteriorate in Electric business because the increase in costs associated with depreciation of the yen has not been fully reflected in Electricity sales.

Factors behind the Increase or Decrease in the Forecast of Financial Results (Consolidated)

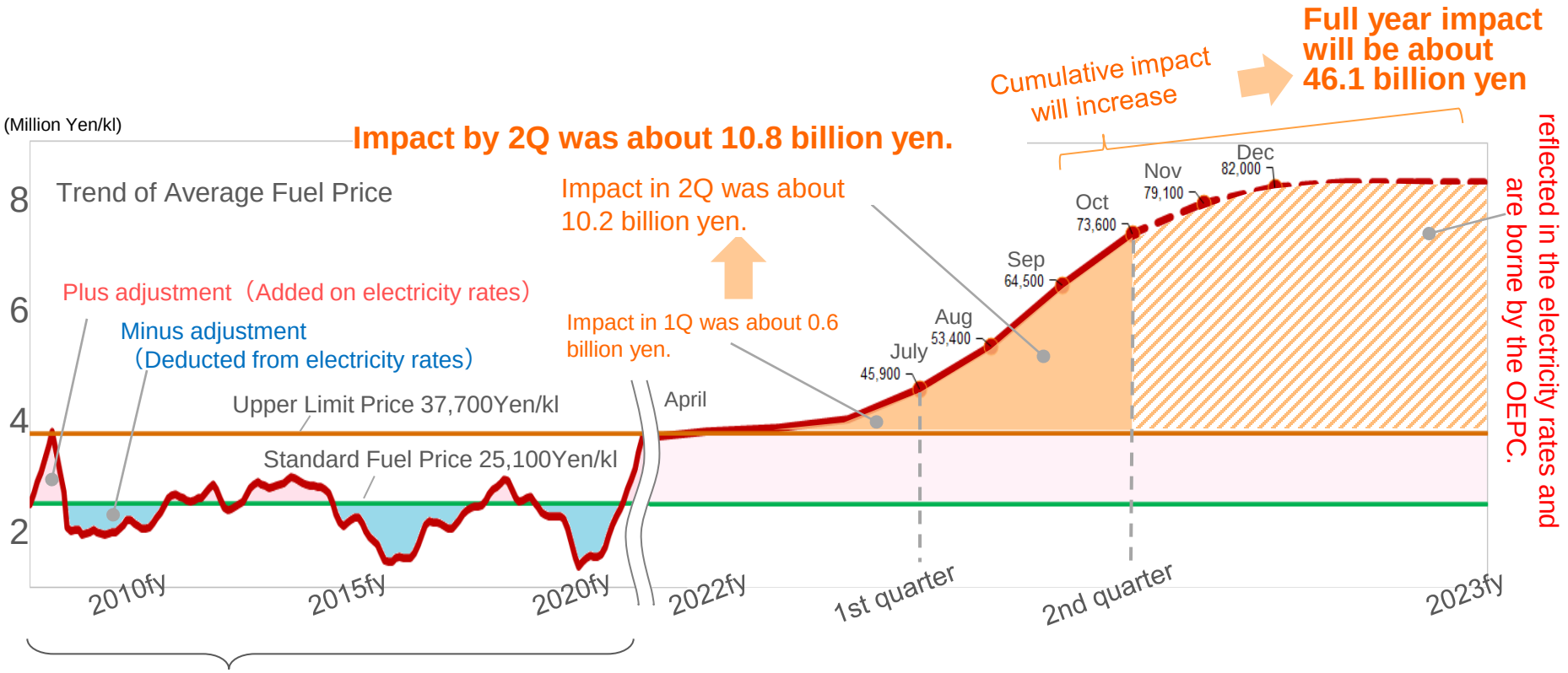
- Forecast for FY2022 is an ordinary loss of -47.0 billion yen.
- Compared to the forecast announced in July, the loss is expected to be approximately 7 billion yen larger.

(Unit: billion yen)



Maximum amount of fuel cost adjustment

- Essentially, fluctuations in fuel prices and exchange rates are automatically adjusted monthly under the "fuel cost adjustment system" and promptly reflected in electricity rates.
- In Okinawa, the maximum price was reached in April of this year, and the amount exceeding the ceiling is not reflected in electricity rates, but is borne by the OEPC, and the impact up to the second quarter has been about 10.8 billion yen.



From the FY2008 Revision to FY2021 the cumulative amount of the fuel cost adjustments is Minus 45.5 billion yen (minus adjustments).

Abolition of the Upper limit on fuel cost adjustment and Increase in Electricity Rates

- We have announced that by July, we will abolish the upper limit on free rates for high-voltage and Extra-high voltage.
- In order to continue the stable supply of electricity, which is our primary mission, we have decided to begin specific studies for the implementation of a price increase for all electricity rates, including regulated rates.

■ Abolition of the Upper Limit on the free rate menu

Items	Contents
Extra-high voltage High voltage （New Customer）	【Announced in April (to be implemented from June 2022)】 • Abolished the Upper Limit for new customers contracting at free rates for Extra-high voltage and high-voltage.
Extra-high voltage High voltage （Existing Customer）	【Announced in July (to be implemented from April 2023)】 • For customers who have been contracted at free rates for Extra-high voltage and high-voltage since before June 2022, we have been requesting the abolish of the Upper Limit since November 2022, and will remove for all eligible customers from April 2023 onward.
Low voltage	【Announced in November】 • Consideration of abolition of the Upper limit at free rates menu for Low voltage.

■ Commencement of Consideration of Raising Electricity Rates【Announced in November（to be implemented from April 2023）】

• In order to maintain a stable supply of electricity, which is our primary mission, we have decided to begin specific consideration of raising all electricity rates, including regulated rates, in April* 2023.

* The actual implementation of the revisions to the regulated rates may be delayed, as they are subject to examination by the government.

Q7. Status of Transitional Measures for Retail Charges

- With the elimination of regional monopolies due to the complete liberalization of entry into the electricity retail sector, rate regulations will become unnecessary in principle.
- On the other hand, it has been decided with the liberalization that rate regulations will be abolished after a transitional period so as not to interfere with the stable supply of electricity or cause confusion among consumers.
- Currently, only the Okinawa area still has transitional treatment fees in the high-voltage area, whose treatment is under consideration by the central government.

	OEPC			< Reference > Nine electric power companies in the mainland		
	Retail department		Transmission and distribution department	Retail company		Transmission and distribution company
Extra-high voltage ⇒Large factories, large shopping centers, etc.	Free rate 【20%】（18%） Upper limit on fuel cost adjustment exists ⇒ Moving to no upper limit in the future		Last resort supply rate	Free rate		Last resort supply rate
High voltage ⇒Supermarkets, office buildings, etc.	Transitional treatment fee *Regulated rate 【13%】（16%） Upper limit on fuel cost adjustment exists (Upper limit on fuel cost adjustment is set by a national scheme)	Free rate 【21%】（19%） Upper limit on fuel cost adjustment exists ⇒ Moving to no upper limit in the future	–	Free rate		Last resort supply rate
Low voltage ⇒For household use, small stores, etc.	Transitional treatment fee *Regulated rate 【32%】（34%） Upper limit on fuel cost adjustment exists (Upper limit on fuel cost adjustment is set by a national scheme)	Free rate 【14%】（13%） Upper limit on fuel cost adjustment exists (Some menus have no upper limit)	–	Transitional treatment fee (Regulated rate)	Free rate	–

- The percentage of retail electricity sales to total electricity sales in FY2021 is shown in【 】, and the percentage when remote islands are included is shown in ( ).
- Areas for which transitional measures have been lifted may receive last resort supply from the general electricity transmission and distribution utility.

Initiatives to Achieve Carbon Neutrality: Roadmap

2050 おきでん ZERO CHALLENGE

2030 (Ambitious goals CO2 ▲30% (Compared to FY2005)) 2040 2050

Make Renewable Energy as Main Power Source

●Expansion of Renewable Energy

Revision

Introduction of Renewable Energy +100MW
- PV-TPO business※1 +50MW
- Large Wind Power※1 +50MW

(3.4 times by current installation)

Maximum introduction of Renewable Energy
- Expansion of the PV-TPO business
- Expanding the introduction of large-scale Renewable Energy using Storage Batteries

●Grid Stabilization Technologies for Renewable Energy expansion

・Utilization and Advancement of Grid Stabilization Technologies using “Storage Batteries" and “Control Technologies”

●Development of the infrastructure to support the mainstreaming of Renewable Energy

・Raising demand for Electrification for Effective Use of Renewable Energy
・Building and Utilizing VPP※2 and DR※3 with DX (Digital Transformation)
・Building a disaster-resistant "Renewable Energy Micro-Grid" for local production and consumption

Reducing CO_2 Emissions from Thermal Power Plants

● Expanding the use of clean fuels

・Reducing CO_2 with increased consumption of LNG
・Leveraging the mobility of LNG power sources to smooth fluctuations in renewable energy output
・Consideration of introducing CO_2-free fuels (hydrogen, ammonia, etc.) and offset technologies

・Conversion to CO_2-free fuels
・Introduction of CO_2 offset technologies

● Fade-out of the inefficient thermal power plants

・Conversion of Oil to LNG. Lower carbon emission through the use of Local Biomass in Coal-fired Power Plants
・Consideration of introducing cutting-edge technologies such as next-generation thermal power

Introduction of next-generation power sources using CO_2-free fuel conversion and CO_2 offset technology in conjunction with the shutdown of existing machines

Achieve Carbon Neutrality※4

Promoting Electrification

In addition to achieving a net zero structure on the power supply side, it is essential to promote electrification on the demand side(transportation, industry, business, household), implement necessary policies, and gain financial support.

※1 Service in which PV and storage batteries are installed free of charge and the electricity generated is sold to customers. Both PV-TPO and large wind power are scheduled to be built and managed by our affiliated companies.
※2 Virtual Power Plant (VPP) refers to the collective control and management of a number of small-scale renewable energy power plants, etc., to make them function as a single power plant.
※3 Demand Response (DR), according to the Ministry of Economy, Trade and Industry (METI), is defined as "an act of changing the consumption pattern of electricity for consumers to curb their use of electricity in response to the setting of electricity prices or the payment of incentives when wholesale market prices rise or when grid reliability declines.“
※4 We aim to Net-Zero CO_2 Emissions by combining renewable energy power sources with thermal power sources that incorporate CO_2-free fuels and CO_2 offset technologies.
※This requires the establishment of necessary technologies along with economic feasibility. We will earnestly work to achieve these conditions. Further, policy and financial support are necessary for the development and introduction of advanced technologies.

Initiatives to Achieve Carbon Neutrality

Okinawa Electric Power Company (OEPC) aims to achieve net zero CO_2 emissions by 2050

- In December 2020, the Group has set up “Zero Emission Initiatives of OEPC” as a long-term policy in response to the growing social demand for measures to combat global warming. We will work towards achieving net zero CO_2 emissions by 2050, by showing measures as a road map, based on two directions, “make renewable energy as the main power source” and “reduce CO_2 emissions from thermal power sources,” and will promote the initiatives by the Group as a whole.

- JUST TRANSITION IN THE OKINAWA AREA

In its “Green Growth Strategy Through Achieving Carbon Neutrality in 2050,” the government called on the electric power industry to play a major role in decarbonization, and set an ambitious goal of "Reducing greenhouse gas emissions by 46%, striving further by 50%" in FY2030.

The government's goal of reducing greenhouse gas emissions by 46% corresponds to a reduction of 28% in the Okinawa area, where zero-emission power sources are limited. The 28% reduction is still a tough goal for the Okinawa area.

The 28% reduction is an estimate of the reduction rate in the Okinawa area, where zero-emission power sources are limited, as shown in the Sixth Basic Energy Plan. This is because it is difficult to develop nuclear power generation and large hydroelectric power due to geographical and topographical constraints as well as the size of the system, and because large wind turbines cannot be installed from the viewpoint of extreme wind speeds. Calculations are made by replacing all the power sources of hydropower, wind power, geothermal power, and nuclear power that are difficult to install with existing thermal power plants.

For this reason, in FY2030, it is necessary to move toward carbon neutrality through a unique path that does not have a significant impact on the local economy based on regional characteristics, i.e., a "JUST TRANSITION IN THE OKINAWA AREA," rather than through a uniform national target.

Taking into account the special characteristics of the Okinawa area, our company will continue to further accelerate its efforts toward carbon neutrality, which is premised on the stable supply of electricity, in line with the government's goals.

* As for wind power generation facilities with a capacity of 500 kW or more, there is no wind turbine that can withstand extreme wind speeds of approximately 90 m/s or more, and large wind power facilities have not been introduced for no less than five years since the change of review on the construction plan notification.

Table 1 Zero Emission Power Sources That Can Be Introduced in the Okinawa Area

Power Source Configuration under the Sixth Basic Energy Plan			Applicable zero emission power sources	
			Nationwide	Okinawa area
Renewable energy		Approx. 36-38%		
	Hydropower	Approx. 11%	○	×
	Wind	Approx. 5%	○	×
	Photovoltaic	Approx. 14-16%	○	○
	Geothermal	Approx. 1%	○	×
	Biomass	Approx. 5%	○	○
Nuclear		Approx. 20-22%	○	×
Hydrogen		Approx. 1%	○	○
Ammonia			○	○
Thermal		Approx. 41%		
	LNG	Approx. 20%		
	Coal	Approx. 19%		
	Heavy oil	Approx. 2%		
Total		100%	Approx. 57-61%	Approx. 20-22%

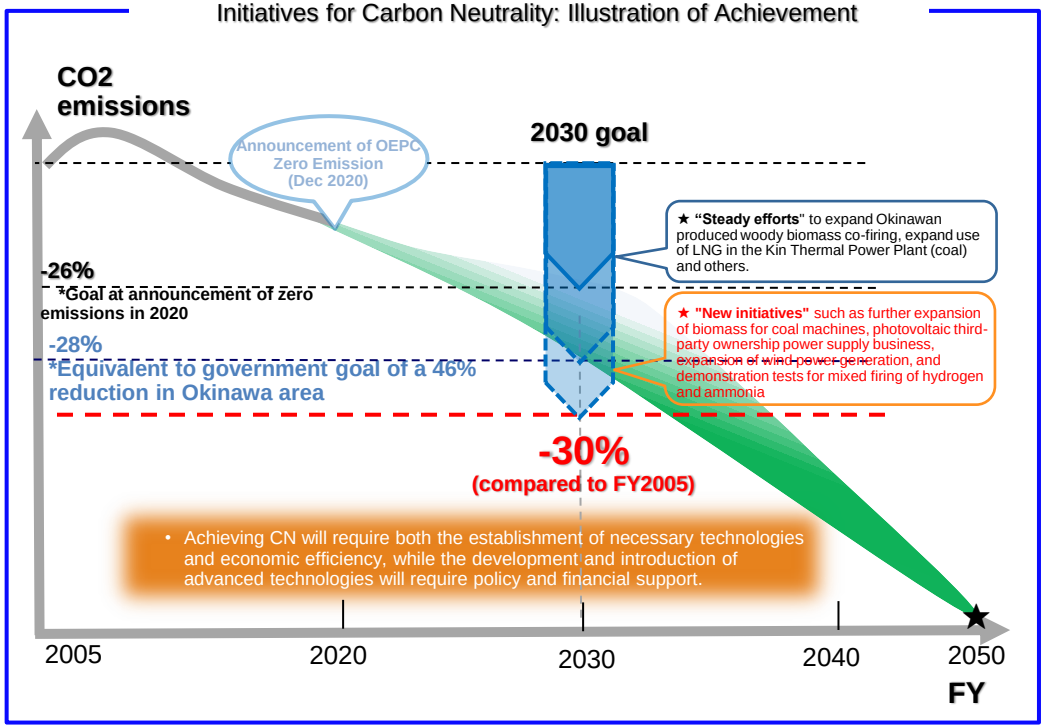
* Because of the small prefectural land area, there is a limit on the development of photovoltaic power.

More ambitious goal for FY2030

- Going beyond the government goal of a reduction rate of 28%, OEPC aims for **a reduction of 30% in FY2030 (compared to FY2005*)** as an ambitious target in the "Just Transition in the Okinawa Area," and will accelerate the various carbon-neutral measures outlined in our Roadmap with maximum effort.

In order to achieve a balance between an inclusive decarbonized society and an economic society in the Okinawa area, it is essential that the following business environment be developed,
at a minimum, with sufficient policy and financial support from the government.

- Technology is developed to meet the installation standards for large-scale wind power generation based on extreme wind speeds in the Okinawa area, and the business environment is developed to enable commercial installation.
- The business environment for a fair transition to low-carbon and decarbonized thermal power generation is established by providing sufficient support for efforts to reduce and decarbonize at existing thermal power plants by co-firing CO_2-free fuels, in order to ensure both the capacity of thermal power plants necessary for a stable supply in the Okinawa area and the reduction of CO_2 emissions.
- In order to maximize the use of renewable energy, the burden on the people is controlled and a good relationship is established with local communities by streamlining environmental regulations and securing suitable land in harmony with local communities.
- To ensure the stable supply of necessary resources and fuels, supply costs for decarbonized fuels and technologies are sufficiently reduced through the integrated promotion of the establishment of hydrogen and ammonia fuel supply chains in cooperation with relevant countries and the securing of suitable lands for CCS, among others.



* Since the previous goal set by the government compared to FY2013 was a 26% reduction (a 25.4% reduction from FY2005), with a goal compared to FY2005 also shown, we have set our goal to be a 26% reduction from FY2005, which is higher than the government's. As a measure against global warming, our company started co-firing biomass in the Gushikawa Thermal Power Plant in FY2010, and introduced the Yoshinoura Thermal Power Plant (LNG) in FY2012, which is the main pillar of the measures. Since believe that our efforts will be properly evaluated, we continue to use FY2005 as the base year.

Example: Development of PV-TPO Business

- In May 2022, we launched our first commercial service at Urasoe Municipal Minatogawa Junior High School.
- We have also entered into contracts with 16 customers and are preparing to begin operations.

Urasoe Municipal Minatogawa Junior High School
- Photovoltaic power generation facilities: 65kW
- Storage battery: 13.5kWh
- Electricity supply by photovoltaic: 17% of annual electricity consumption
- CO2 emissions: 73 tons/year (equivalent to 8,332 cedar trees)

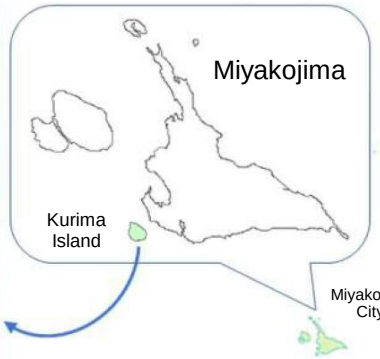
OKINAWA TOURIST SERVICE INC.
- Photovoltaic power generation facilities: 65kW
- Storage battery: 13.5kWh
- CO2 emissions: 100 tons/year

Ryukai Logistics CO.LTD.
- Photovoltaic power generation facilities: 220kW
- CO2 emissions: 356 tons/year

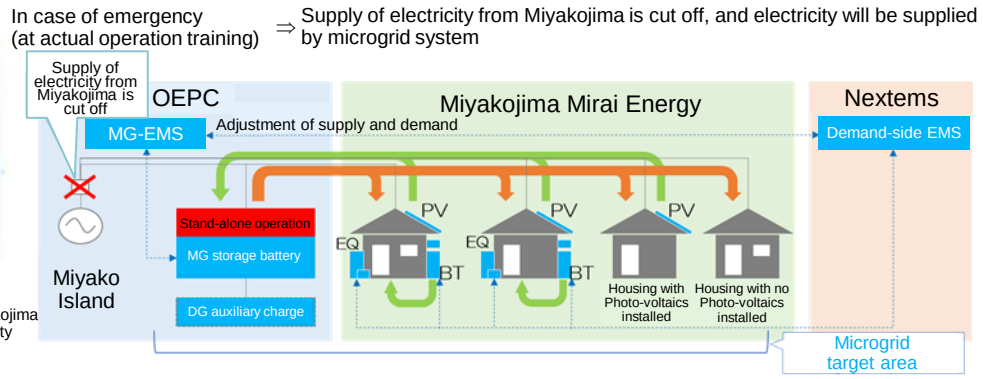
Example: Microgrid Demonstration Project in the Kurima Island Region

- In response to a decision by the Ministry of Economy, Trade and Industry to grant a subsidized project “Regional Microgrid Construction Project,” construction work on a demonstration facility for the Kurima microgrid, which was being carried out in collaboration with Nextems Co., Ltd. and Miyakojima Mirai Energy Co., Ltd., was completed and operation was started in January 2022.
- In May 2022, for the first time in Japan, we separated the microgrid target area from the original power transmission and distribution network, and succeeded in supplying electricity using existing power distribution lines using only a combination of photovoltaic power generation installed on the customer side and our company's MG storage batteries.
- By establishing regional microgrids, we will contribute to the realization of decarbonization, strengthening of electric power resilience, and sustainable society, which is increasingly in demand from the society.

*1 A regional microgrid is a system that uses regional renewable energy in an area of a certain size.
*2 Nextems Co., Ltd. (Urasoe City): In December 2019, the company received the Minister of Economy, Trade and Industry Award, the highest award in the New Energy Foundation’s FY2019 New Energy Grand Prize in the Advanced Business Model Category.



Microgrid overview

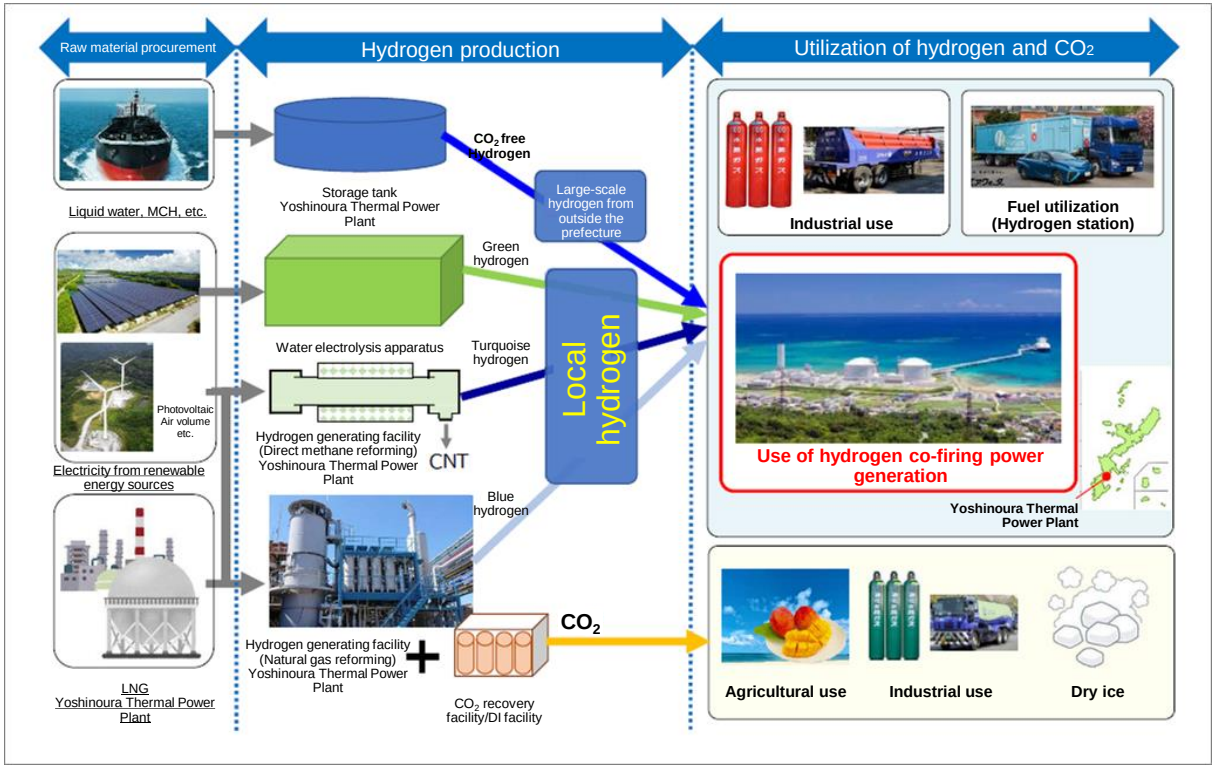


Example: Investigation for building a hydrogen-based society

- We applied for “Development of Technologies for Realizing a Hydrogen Society/ Development of Technology for Utilizing Regional Hydrogen/Investigation of Potential for Hydrogen Production and Utilization” publicly solicited by NEDO*, which selected our “Investigation on the development of a total system for the utilization of regional hydrogen centered on the Yoshinoura Multi Gas Turbine Power Plant in the Okinawa area.”
- In addition to technical investigation on raw material procurement, and receiving and co-firing facilities for hydrogen co-firing at the Yoshinoura Multi Gas Turbine, we will conduct research on the local production of hydrogen and industrial development using by-produced CO_2, etc.

*New Energy and Industrial Technology Development Organization

Outline of the investigation



Specific details of the investigation

(1) Hydrogen co-firing in gas turbine power generation facilities

(2) Local production of hydrogen using LNG reforming and local renewable energy

(3) Industrial promotion using CO_2 and carbon nanotubes in hydrogen production

(4) Large-scale hydrogen import bases at power plants

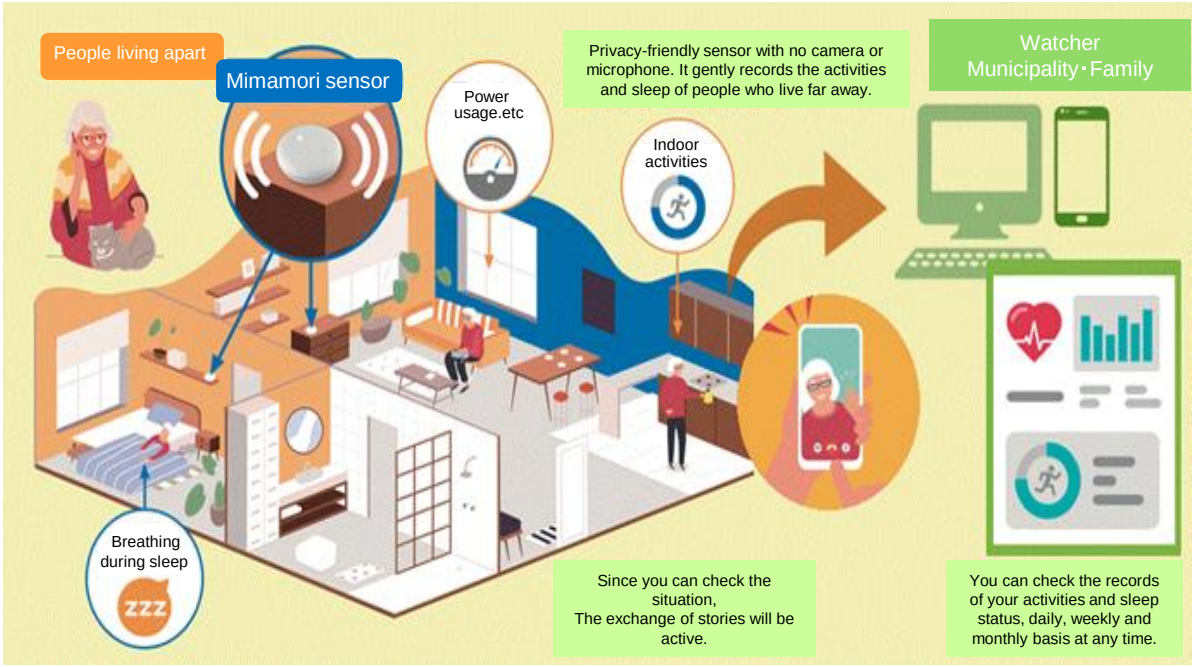
(5) Investigation of potential hydrogen utilization in the region

Development of Lifestyle and Business Support Businesses

■ We will develop our lifestyle support business, which utilizes cutting-edge technologies to realize a safe and secure society.

✓ Development of Mimamori (caring family monitor) Service

- We established "Okiden C plus C Corporation" to commercialize Mimamori Service which would utilize cutting-edge technology (May 2021).
- It utilizes state-of-the-art IT technology that can analyze indoor Wi-Fi signals using AI without using a camera or microphone, to understand human movements and breathing during sleep.
- At present, 12 municipalities, including Naha City, are implementing the "Demonstration Project for Establishing a System for Monitoring the Elderly Utilizing IT." In order to build an optimal business, verification and examination are being conducted on the ideal way of monitoring (Self-help by family members, public assistance by local governments, and mutual assistance by local communities), system development, and construction arrangements.



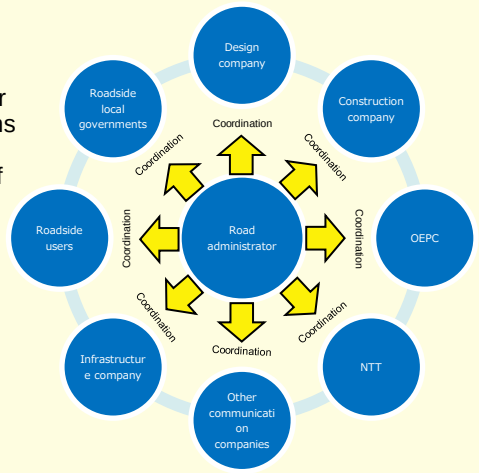
Covers 62% of single-person households aged 65 and over living in the prefecture in 12 municipalities.

Group Business (Examples of Initiatives: Acceptance of Comprehensive Orders for Construction of Common Cable Tunnels, etc.)

- The OEPC Group will act on behalf of the road administrator as a "consulting service" for consultations with related parties that are troublesome to coordinate.
- The OEPC Group proposes smooth development of common cable tunnels, by accepting comprehensive orders in combination with the design and construction work.

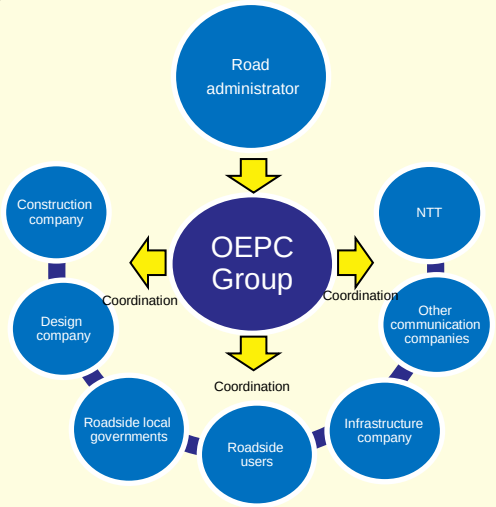
< < Conventional Method > >

- ✓ It takes time to make coordination, because the road administrator conducts all of the consultations with the related parties concerning the development of common cable tunnels.
- ✓ Since the design and construction are ordered individually, it takes a long period of time to complete the development due to many time lags and reworks.

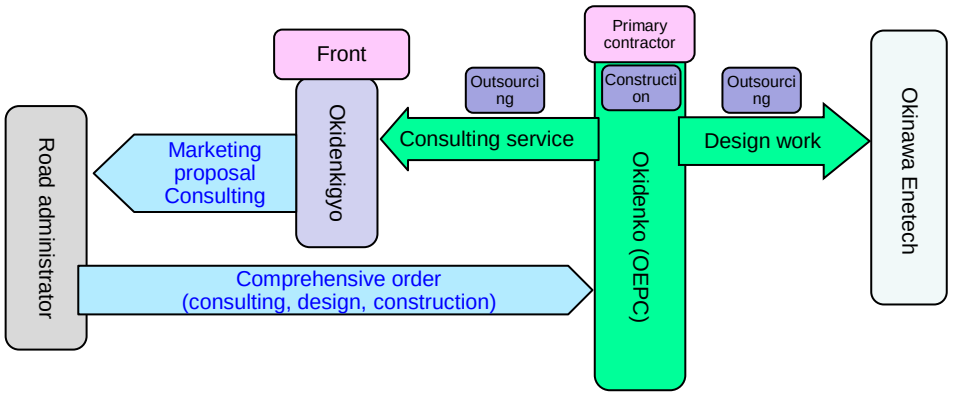


< < Proposed Method > >

- ✓ Coordination will proceed smoothly, as the OEPC Group conducts one-stop consultations as proxy with related parties on design and construction.
- ✓ There is no time lag in tendering procedures, etc., as design and construction are ordered comprehensively, while the construction period can be drastically shortened, as the business continuously progresses.



< Illustration of Profitability through Supply Chain >



< < Division of roles > >

Okidenko
- Outsourced management
- On-site construction

Okidenkigyo
- Contact
- Consultation

Okinawa Enetech
- Design work

OEPC
- Group planning & management

Each company in the OEPC Group plays a role in handling each work ordered, mainly by Okidenko, the primary contractor.