

Management Topics

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

November 2023



The Okinawa Electric Power Company, Inc.

Financial Results for FY2023 2Q (Year-on-Year Comparison)

(Unit: million yen, X)

	Consolidated (A)			Non-consolidated (B)			(A) / (B)	
	FY2022 2Q YTD (Results)	FY2023 2Q YTD (Results)	Rate of Change	FY2022 2Q YTD (Results)	FY2023 2Q YTD (Results)	Rate of Change	FY2022 2Q YTD (Results)	FY2023 2Q YTD (Results)
Sales	118,738	130,501	+9.9%	114,888	125,604	+9.3%	1.03	1.04
Operating income	-22,518	4,704	—	-22,905	4,026	—	—	1.17
Ordinary income	-22,473	4,216	—	-22,709	3,814	—	—	1.11
Net income	-16,819 [*]	3,238 [*]	—	-16,871	3,106	—	—	1.04

* Net income attributable to owners of parent.

【Revenue】

- Increase in income from the price revision in Electric business.

【Expenditure】

- Decrease in Fuel costs and purchased power costs due to fuel price fall in Electric business.
- Increase in Non-current assets retirement costs, due to impact of the damage to the coal unloader at the Gushikawa Thermal Power Plant in Electric business.

Annual Outlook Summary FY2023

(Unit: million yen, X)

	Consolidated(A)				Non-consolidated(B)				(A) / (B)	
	FY2022 (Results)	FY2023 (Forecasts)		Change (II) - (I)	FY2022 (Results)	FY2023 (Forecasts)		Change (II) - (I)	FY2022 (Results)	FY2023 (Forecasts)
		Announced in Aug. 2023 (I)	Announced in Oct. 2023 (II)			Announced in Aug. 2023 (I)	Announced in Oct. 2023 (II)			
Sales	223,517	234,400	240,300	+5,900	213,383	222,600	228,800	+6,200	1.05	1.05
Operating income	-48,406	5,100	4,100	- 1,000	-50,582	4,000	3,000	-1,000	-	1.37
Ordinary income	-48,799	4,100	3,100	-1,000	-50,245	3,000	2,000	-1,000	-	1.55
Net income	-45,457 [*]	2,900 [*]	2,200 [*]	-700	-45,934	2,400	1,700	-700	-	1.29

* Net income attributable to owners of parent.

We have revised our forecast for FY2023, which we announced on August 18, 2023. The main contents reviewed is the response to the damage to the coal unloader at the Gushikawa Thermal Power Plant that occurred on July 27, 2023. The previous forecast was based on the assumption that the operation of the Gushikawa Thermal Power Plant would return to normal operation in December by resuming coal unloading with the one coal unloader unit that has not been damaged. In the current forecast, we have assumed that the undamaged coal unloader will not be used until the cause of the accident is revealed. The current forecast are based on the assumption that operations at the Gushikawa Thermal Power Plant will return to normal operations in January because coal unloading from the sea will be resumed by vessels equipped with unloading functions. Although costs are expected to increase due to the replacement of the reduced operation of Coal-fired power plants with LNG-fired power plants and other factors, we plan to reduce costs by revising power generation plans and other measures.

[Comparison with previous forecasts (Aug.2023)]

【Revenue】

- Increase in Sales due to increase in Electricity sales , despite decrease in Sold power to other suppliers in Electric business.

【Expenditure】

- Increase in fuel costs due to rise in fuel prices and the impact of the damage to the coal unloader at the Gushikawa Thermal Power Plant in Electric business.
- Increase in Purchased power costs due to rise in coal prices and other factors in Electric business.

Q1. Topics of Okinawa's Economy

1 Current Status and Future Forecast of Okinawa's Economy

■ The current state

The economy in the prefecture is on an expansionary trend due to a stronger recovery in personal consumption as a result of increased demand associated with the recovery of human flow, as well as strong tourism-related activity.

Trends in Main Economic Indicators of Okinawa Prefecture

(Unit: %, X)

Indicators	FY2022													FY2023						
	Apr.	May	Jun	Jul	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	FY	Apr.	May	Jun	Jul	Aug.	Sep.	1st half
Sales by large-scale retailers	4.8	2.1	10.2	9.1	12.9	6.0	5.8	6.5	8.7	11.4	9.5	11.0	8.2	11.0	11.5	6.7	10.4	11.4	11.3	10.4
No. of new car sold	9.9	-30.8	4.7	7.6	-7.0	31.9	21.7	11.4	26.0	32.8	45.9	18.6	13.8	23.7	69.8	36.3	1.9	3.2	19.5	21.7
No. of incoming tourists	55.8	103.3	175.3	142.7	122.3	141.4	110.9	67.1	49.9	137.0	233.6	84.3	106.9	63.8	62.6	47.9	28.1	13.7	43.5	40.0
Value of public works contracts	-41.5	-51.1	132.5	-40.6	12.0	-45.5	11.1	-22.1	-37.6	-58.6	141.8	54.9	1.3	6.4	2.8	-55.0	68.0	-32.3	150.2	13.0
New residential Construction starts	7.3	12.2	-2.0	-18.9	25.4	-2.1	-27.8	-11.9	10.3	41.4	21.2	-10.9	1.7	-25.2	-8.0	62.6	26.4	4.6	21.1	11.0
Total unemployment rate	2.8	2.8	2.8	3.9	3.4	3.1	2.5	3.1	3.5	2.8	3.6	4.1	3.2	3.8	3.5	3.1	2.8	4.2	3.4	3.5
Job Opening Ratio	0.92	0.94	0.98	0.99	1.02	1.04	1.07	1.10	1.10	1.13	1.12	1.14	1.04	1.18	1.20	1.20	1.20	1.19	1.20	1.14

Note 1: The figures for 'Sales by large-scale retailers' are calculated on an all-store base. The values in September 2023 are preliminary figures.

Note 2: The figures for 'Total unemployment rates' are raw data, whereas The figures for 'Job Opening Ratio' are a seasonally adjusted value for the current month.

(The values for the fiscal year are both raw data which use the number of job openings by prefecture received nationwide.)

Source: Okinawa General Bureau, Okinawa Prefecture, Ryugin Research Institute, and others.

■ Prospect

As for the outlook of the economy in the prefecture, the expansion is expected to continue due to a recovery in personal consumption and continued high travel demand.

Number of incoming tourists (1/2)

- In FY2022, the number of Incoming tourists was 6.77 million, higher than the previous year.
- [Incoming tourists]
 - FY2022 : 6,770 thousand people (Growth rate of +106.9% year-on-year)
 - FY2023 : 【First half results】4,200 thousand people (Growth rate of +40.0% year-on-year)
- Domestic tourists have recovered to almost pre-COVID levels partly thanks to nationwide travel support by the State and the number of accommodation rooms is also on the rise. The number of foreign tourists is also projected to increase due to the resumption of the operations of overseas flights and cruise ships, and a further recovery in travel demand is hoped for. (FY2019 first half comparison: Domestic tourists 98.3%、 Foreign tourists 32.8%)

(10 thousand people) **Trends of the Numbers of Incoming Tourists and Guest Rooms at Accommodation Facilities** (rooms)



Note: The breakdown and total values do not match sometimes due to rounding decimals.
 Source: "Tourism Guidebook", "Summary Statistics on Incoming Tourists to Okinawa", "2022 Accommodations Fact-finding Survey Result", published by Okinawa Prefectural Government

Number of incoming tourists (2/2)

- In the first half of FY2023, Hotel occupancy rate and the number of incoming tourists to the region exceeded that of the previous year due in many parts to the reclassification of COVID-19 as a Class 5 infectious disease and demand boosted by nationwide travel support as well as the resumption of the operations of flight routes and of international cruise ship port calls.

[Incoming tourists] FY2023 Apr-Sep : 4,200 thousand people (Growth rate of +40.0% year-on-year)

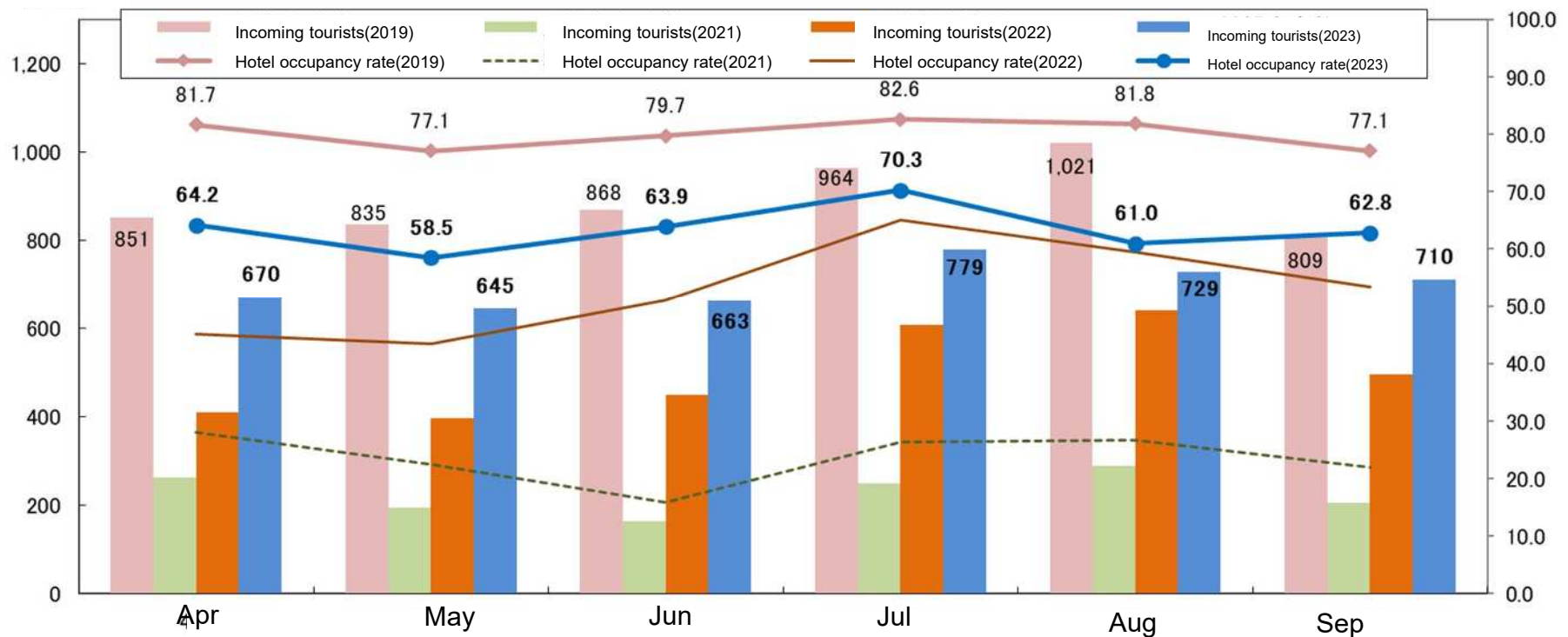
※ FY2019 first half comparison 78.4%

(Domestic tourists 98.3%、 Foreign tourists 32.8%)

[Hotel occupancy rate] FY2023 Apr-Sep : 63.5%(Compared to year-on-year +10.5%)

Trend of the number of incoming tourist and Hotel occupancy rate

(Thousand people)



Source: "Summary Statistics on Incoming Tourists to Okinawa" published by Okinawa Prefectural Government,
 "Overview of economic and financial developments in Okinawa" published by Bank of Japan

Electric Energy Demand (Results)

Electricity Sales Volume

(Unit: million kWh, %)

	FY2022 2Q YTD (Results)	FY2023 2Q YTD (Results)	Change	Rate of Change
Lighting	1,580	1,468	-112	-7.1
Power	2,297	2,275	-22	-1.0
Total	3,877	3,743	-134	-3.5

<Lighting>

The demand for Lighting decreased compared with Year-on-Year due to the impact of power saving and customer switching to other suppliers.

<Power >

The demand for Power decreased compared with Year-on-Year due to the impact of the power saving and decreased demand in steel industry, despite increase by customer switching to our company from other suppliers and the recovery from the impact of novel coronavirus.

■ Power Generated and Received

(Unit: million kWh)

		FY2022 2Q YTD		FY2023 2Q YTD		Change	Rate of change
		Electricity generated	Com- position ratio	Electricity generated	Com- position ratio		
OEPC	Coal	1,830	44.0%	1,460	36.1%	-370	-20.2%
	Oil	548	13.2%	636	15.7%	+88	+16.1%
	LNG	954	23.0%	1,073	26.5%	+119	+12.5%
	Total	3,332	80.2%	3,169	78.3%	-163	-4.9%
Other		824	19.8%	878	21.7%	+54	+6.6%
Total		4,156	100.0%	4,047	100.0%	-109	-2.6%

<Power Generated and Received>

- Power generated and received was 4,047 million kWh, down 2.6%. *
- Electricity generated of OEPC's Coal-fired thermal power was down 20.2%. *
- Electricity generated of OEPC's Oil-fired thermal power was up 16.1%. *
- Electricity generated of OEPC's LNG-fired thermal power was up 12.5%. *

*Comparison with the same period of the previous year.

Electric Energy Demand (FY2023 and Long-term Outlook)

Electricity sales volume (FY2023 Outlook)

(Unit: million kWh, %)

	FY2022 Results	FY2023 Forecasts	YoY Rate of Change
Lighting	2,842	2,703	-4.9
Power	4,231	4,258	0.6
Total	7,073	6,961	-1.6

Electricity sales volume (Long-term Outlook)

(Unit: million kWh, %)

	FY2011 Results	FY2021 Results	FY2032 Forecasts	2011-2021 Annual average growth rate	2021-2032 Annual average growth rate
Lighting	2,938	2,895	2,676	-0.1 (-0.2)	-0.7 (-0.6)
Power	4,502	4,138	4,008	-0.8 (-0.8)	-0.3 (-0.2)
Total	7,440	7,033	6,684	-0.6 (-0.6)	-0.5 (-0.4)

* Adjusted for the influence of temperature and leap year.

The demand for Electric Power in Okinawa area

(Unit: million kWh, %)

	Results		Forecasts	Average rate of Increase or decrease
	2011	2021		2021-2032
Okinawa	7,400	7,684	8,231	+0.6
Japan	868,932	836,935	815,547	-0.2

(Lighting)

The demand for Lighting is expected to be lower than the previous fiscal year owing to reactionary decrease from increased demand due to higher than normal temperature in the previous fiscal year, the impact of power saving and customer switching to other suppliers, and other factors (Year-on-year change: -4.9%)

(Power)

The demand for Power is expected to be higher than the previous fiscal year due to increased demand resulting from customer switching to our company from other suppliers and the recovery from the impact of COVID-19, despite reactionary decrease from increased demand owing to higher than normal temperature in the previous year (Year-on-year change: 0.6%)

(Total)

As explained above, the total electricity sales volume is expected to be 6,961 million kWh, lower than the previous year (Year-on-year change: -1.6%)

(Lighting)

The demand for Lighting is expected to increase due to growth in the number of population and households, however is expected to be affected by customer switching to other suppliers

(Annual average growth adjusted for temperature: -0.6%)

(Power)

On the assumption that COVID-19 infection converges, while the number of commercial and accommodation facilities is expected to increase due to growth in the number of population and tourists, the demand for Power is expected to be affected by customer switching to other suppliers

(Annual average growth adjusted for temperature: -0.2%)

(Total)

As explained above, the total electricity sales volume is expected to be 6,684 million kWh

(Annual average growth adjusted for temperature: -0.4%)

Basic policy on shareholder return *

- For the distribution of profits, our company will maintain a “consolidated dividend on equity ratio (DOE) of at least 2.0%” based on a “stable and continuous dividend” policy.

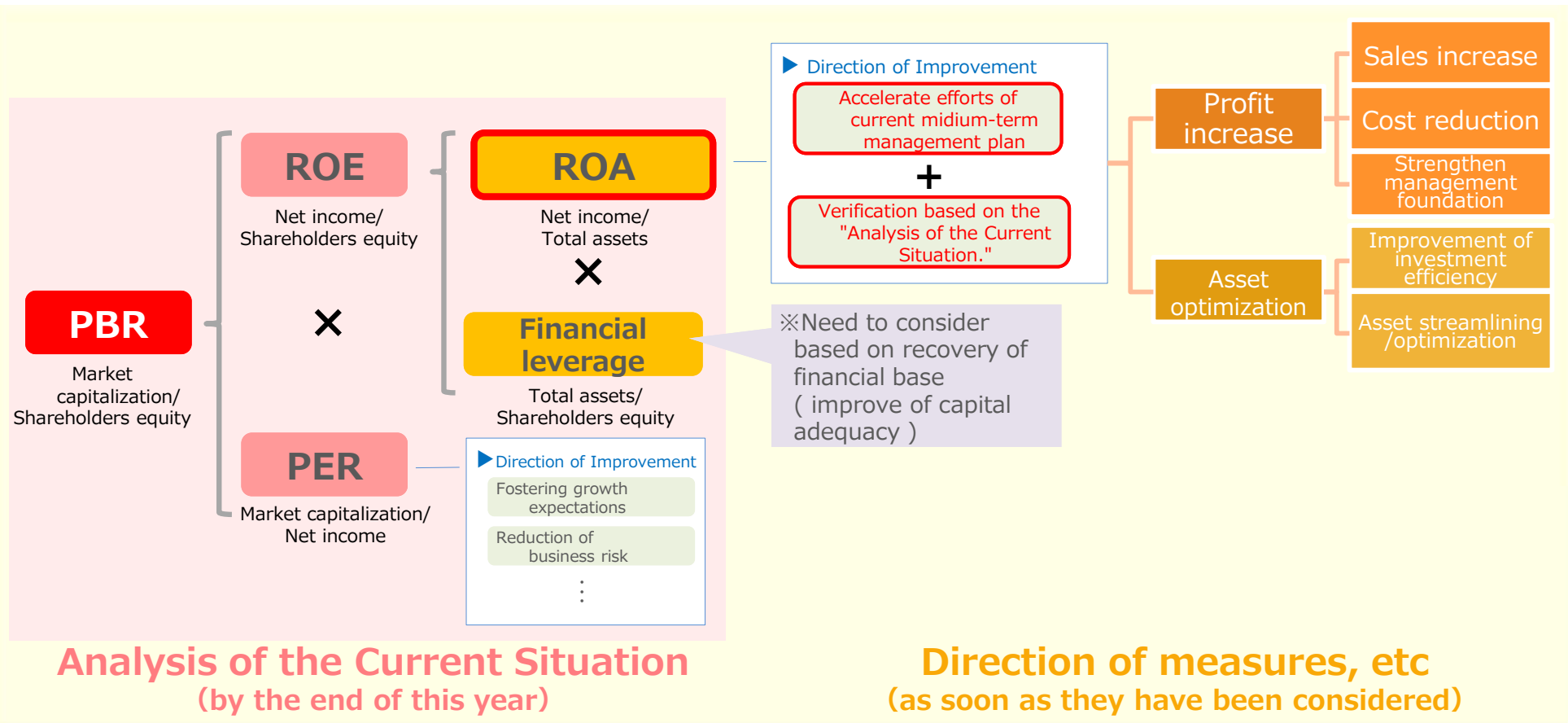
* The basic policy on shareholder returns is as mentioned above. However, since the financial base has seriously deteriorated in the wake of the large deficit for FY2022, the Company has set up a recovery period (up to FY2025), when a focus is placed on its recovery, and the Company will pay dividends based on the following thinking.

- ✓ The Company aims at paying dividends continuously, raising the dividend level in phases, and returning dividends to the previous level after the recovery period ends.
- ✓ The Company will determine the dividend amount for each fiscal year by considering the balance between the recovery of the deteriorated financial base and shareholder returns.

- For the fiscal year ending March 2024, the Company plans to pay an interim dividend of 5 yen per share and a term-end dividend of 5 yen per share (an annual 10 yen per share).

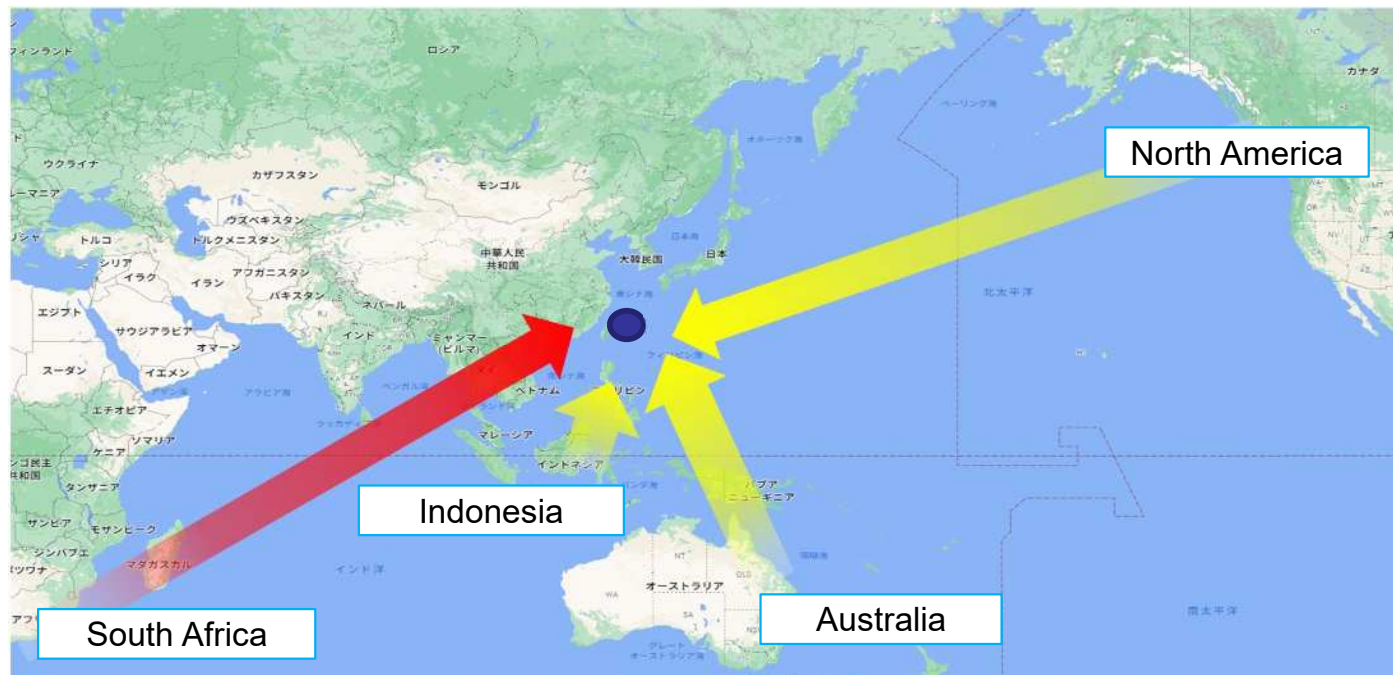
Action to Implement Management that is Conscious of Cost of Capital and Stock Price

- Tokyo Stock Exchange, Inc. (TSE) issued a request for "Action to Implement Management that is Conscious of Cost of Capital and Stock Price"
- In order to improve PBR, we will analyze the current situation and take measures to improve capital profitability, while maintaining a balance with the recovery of our financial base.
- TSE has requested a series of measures, including "Analysis of the Current Situation," "Planning & Disclosure," and "Implementation of Initiatives." We will disclose the "Analysis of the Current Situation" by the end of this year and the "Direction of measures, etc." as soon as they have been considered.



Electric Power Business (Examples of Initiatives: The efforts to fuel cost reduction)

- As efforts to reduce fuel costs, the Company is engaged in stable supply through long-term contracts for coal and the diversification of procurement sources; the continued use of sub-bituminous coal, which is low-priced including transportation costs; and the reduction of fuel costs through buying coal in the spot market.
- As efforts to disperse and diversify procurement sources, the Company has started procuring coal from South Africa in addition to Australia, Indonesia and North America, which are the Company's traditional sources.
- Such efforts will make possible highly expeditious and flexible procurement by utilizing stock yards in countries closer to Japan.



Electric Power Business (Examples of Initiatives: Development of the “KarE-roof”)

Example:

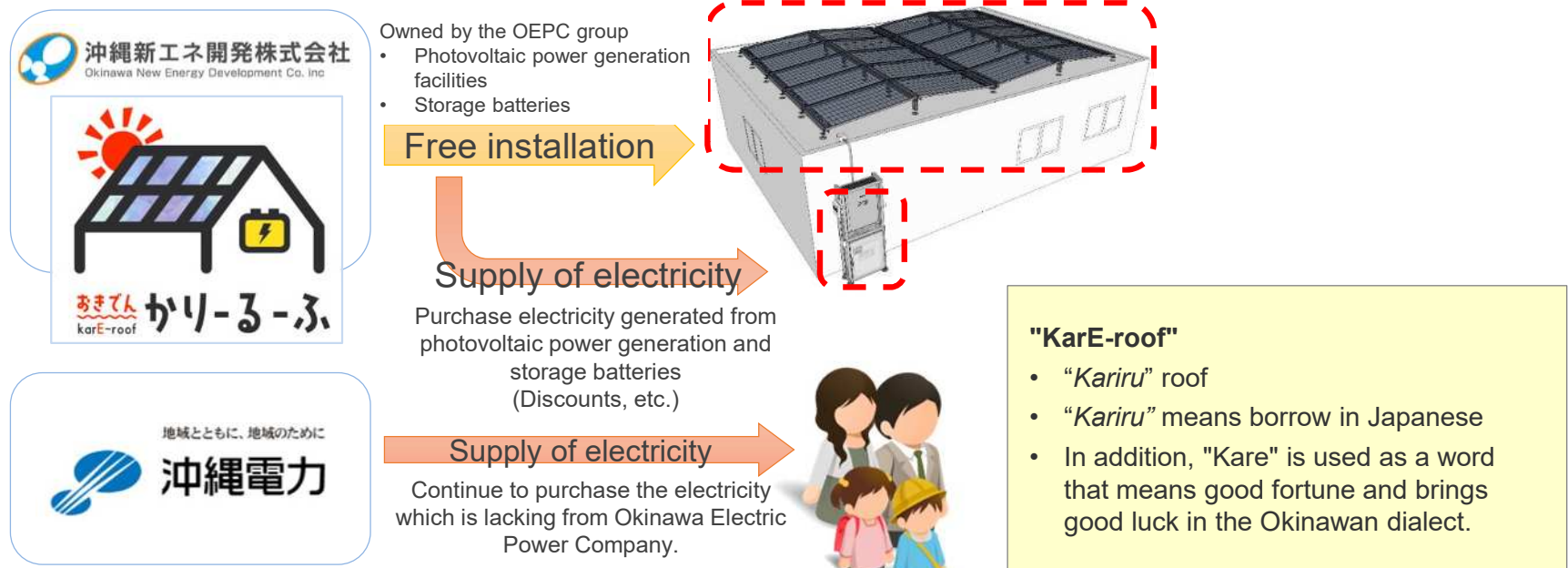
Development of the “KarE-roof (for general residences)”

Free installation service of photovoltaic generation and storage batterie (PV-TPO Business)



- Approximately 400 contracts (approximately 2,210 kW) have been concluded with general residences, of which about 360 contracts have started receiving the service (approximately 1,960 kW).
- The Company engages in offering a new type of electrification, combining “KarE-roof” and “All electrification.” All-electrification residences account for about 70% of all contracts.

Service overview diagram



Key Benefits to Customers

**Zero yen
Free initial installation cost**

Photovoltaic generation and storage batteries can be used with zero initial installation cost.

**Use of electricity in the event of
disasters and other emergencies**

Electricity can be used from photovoltaic power and storage batteries in the event of disasters and other emergencies.

Reasonable rate plan

Electricity generated by photovoltaic power can be purchased with a reasonable plan. A combo of an EcoCute and an IH cooking heater makes the all-electrification menu a good deal!

Initiatives by Business : Group Businesses

What the OEPC Group Aims To Be

With our comprehensive energy business as the core, we aim to create new value through services to support both corporate and individual customers and as a business group with a sense of solidarity, growing and developing hand-in-hand with the community, will contribute to the realization of a sustainable society.

Basic Management Stance

(1) Strive to provide a stable supply of energy

(2) Aggressively take on carbon neutrality

(3) Meet the diverse needs of our customers and do our utmost to enhance customer satisfaction

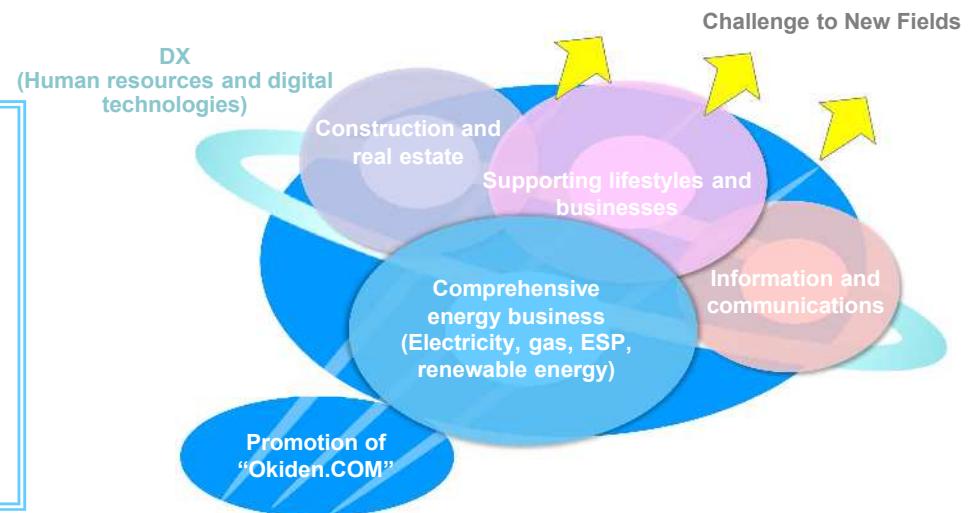
(4) Fulfill social responsibility as a good corporate citizen of local communities

(5) Nurture and value people

(6) Achieve sustainable growth through proactive business development and continually enhancing management efficiency

Business Fields

- With comprehensive energy business at its core, the OEPC Group will expand its business fields by further developing businesses in construction and real estate, information and communications, and support for lifestyles and businesses.
- We will also leverage the strengths of the OEPC Group to develop new businesses.



Group Businesses (Examples of Initiatives: Development of Energy Services)

- Through Reliance Energy Okinawa, Inc., the Company runs the energy service business of owning energy facilities and processing and supplying energy. Currently, 11 customers are using the services.
- Additionally, the Company built an energy center inside the OEPC head office and has started supplying energy to its main building, off-premises commercial complex buildings, etc. Going forward, the Company will also roll out a broad-area energy service with that center as a model.

Increase in new energy demand

- Large-scale development of urban areas (e.g. former U.S. military bases)
- Construction of hotels in response to an increase in the number of tourists
- Construction of large-scale retail stores

Advancement and diversification of energy needs

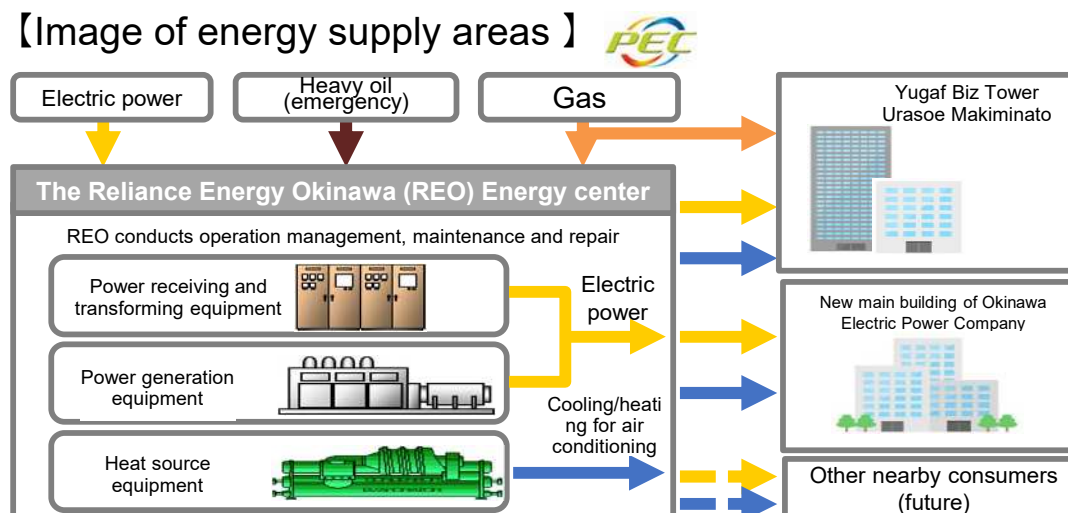
- Reduce initial investment in energy use (e.g. electricity and gas)
- Reduce burdens involved in facility operation/maintenance and emergency response



- It owns energy facilities on behalf of customers.
- It provides electricity and gas in the forms of, for example, air-conditioning water (cold / hot), hot-water supply and steam.

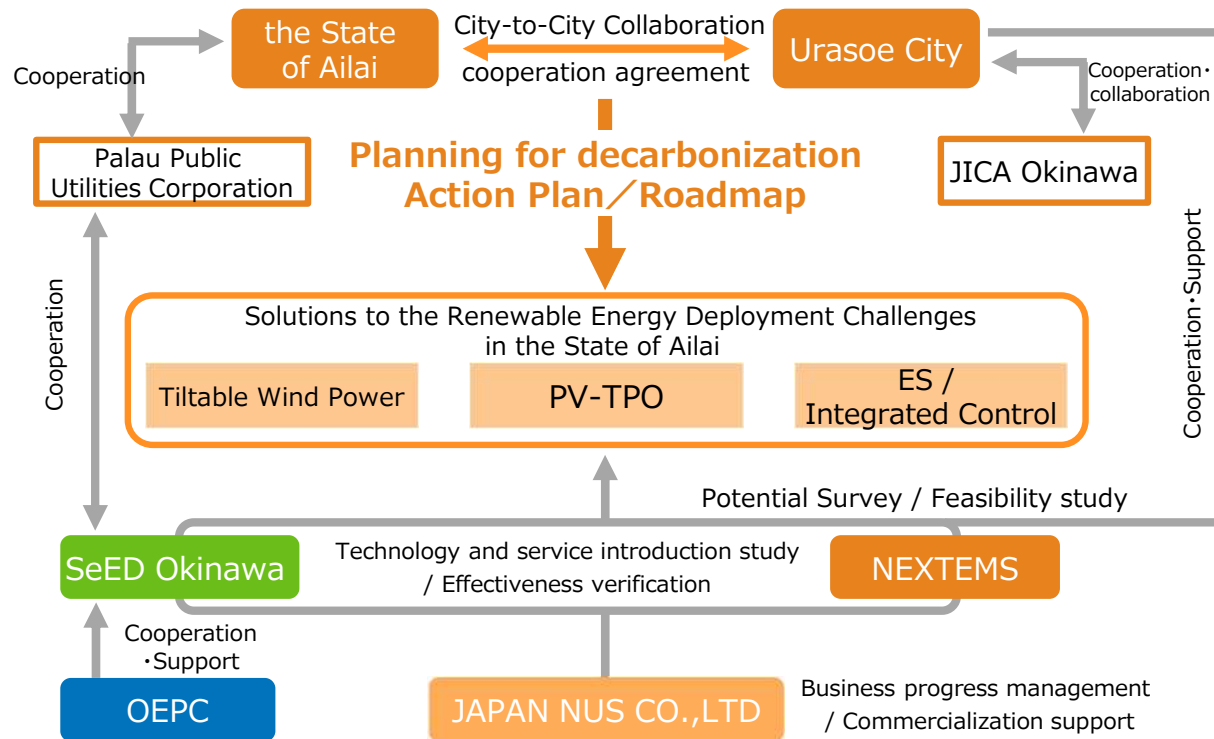
Reliance Energy Okinawa Inc. achieved energy savings of 40% and CO2 savings of 43%, compared to ordinary commercial facilities, in its ESP business at large-scale commercial facilities in the prefecture, and won the Grand Prize for Energy Conservation by the Minister for Economy, Trade and Industry, for the first time in the prefecture.

【Image of energy supply areas】



Example: Efforts to promote renewable energy overseas (Republic of Palau)

- SeED Okinawa is studying the possibility of introducing C2P2(Clean City Partnership Program) initiatives and JCM(Joint Crediting Mechanism)-based CO₂-saving facilities to accelerate decarbonization in the Republic of Palau, utilizing the Ministry of the Environment's City-to-City Partnership Program starting in FY2022.
- At the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC), to be held in Dubai, United Arab Emirates from November 30, Republic of Palau's initiatives will be presented at the Japan Pavilion, where information on Japan's outstanding technologies and initiatives will be disseminated internationally.



(Outline of the Republic of Palau)

Area : 488 km²
 Population : Approx. 18,000
 GDP : US\$218 million (2022)
 Major Industry : Tourism



Human Resources Strategy

- In November 2023, the Company formulated a new human resources strategy in November 2023. Its aim is to establish an environment that enables employees to demonstrate their skills to the maximum for realizing “the maximization of employee and organizational strength,” which will create new value. By leveraging the new value as the source, the Company will achieve all management goals.
- In the human resources strategy, the Company aims at maximizing employee and organizational strengths, centering on three directions (the environment, individual and organization). In "Creating an environment," the Company will build a mechanism that allows employees and organizations to maximize their performance. In “Creating individuals,” the Company will build a mechanism that motivates employees to grow further and induces “Behavioral transformation” thereby speeding up the “creation” of value. In "Creating an organization," the Company will build a mechanism that enables “Co-creation” of value in order to maximize “Individuals” abilities.
- By linking these three directions organically, the Company will pursue human-capital corporate management.

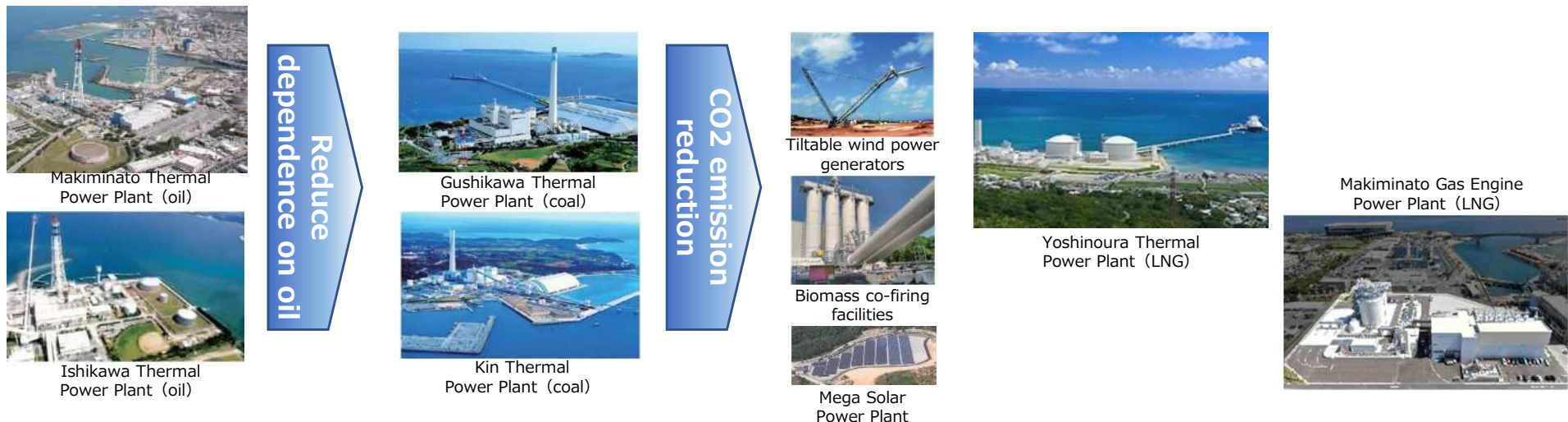


Okinawa Electric Power Company (OEPC) aims to achieve net zero CO₂ emissions by 2050

- 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 CO₂ emissions by 2050, by showing measures as a road map, based on two directions, “make renewable energy as the main power source” and “reduce CO₂ emissions from thermal power sources,” and will promote the initiatives by the Group as a whole.

Okinawa Electric Power's Power Supply Development to Date

- We have been developing power sources in response to social conditions and social demands.
 - In response to the oil crisis of the 1970s, we developed coal-fired power plants in Gushikawa and Kin in 1994 and 2002, respectively, on the main island of Okinawa to reduce our dependence on oil. In the remote islands, we have been demonstrating renewable energy sources such as wind and solar power.
 - We have positioned global warming countermeasures as an important management issue and has been promoting efforts to address this issue, expanding the introduction of renewable energy, biomass co-firing in coal-fired power plants, and introducing the Yoshinoura LNG-fired power plant in 2012. As a result, CO₂ emissions from energy use peaked out in 2008.
 - The Makiminato Gas Engine Power Plant, fueled by LNG, is under construction as a reserve source on the site of the decommissioned oil-fired Makiminato Thermal Power Units No. 5-8, scheduled to start operation in March 2024.



Until the 1980s
Oil-dependent
power supply configuration

Diversification of power sources
in the wake of the oil crisis

the 1990s
Introduce of
coal-fired power

the 2000s

Development of initiatives to reduce CO₂ emissions
Expand the introduction of renewable energy
Biomass co-firing in a coal-fired power generator

Introduction of LNG-fired power generation

the 2010s

the 2020s
LNG Gas Engine

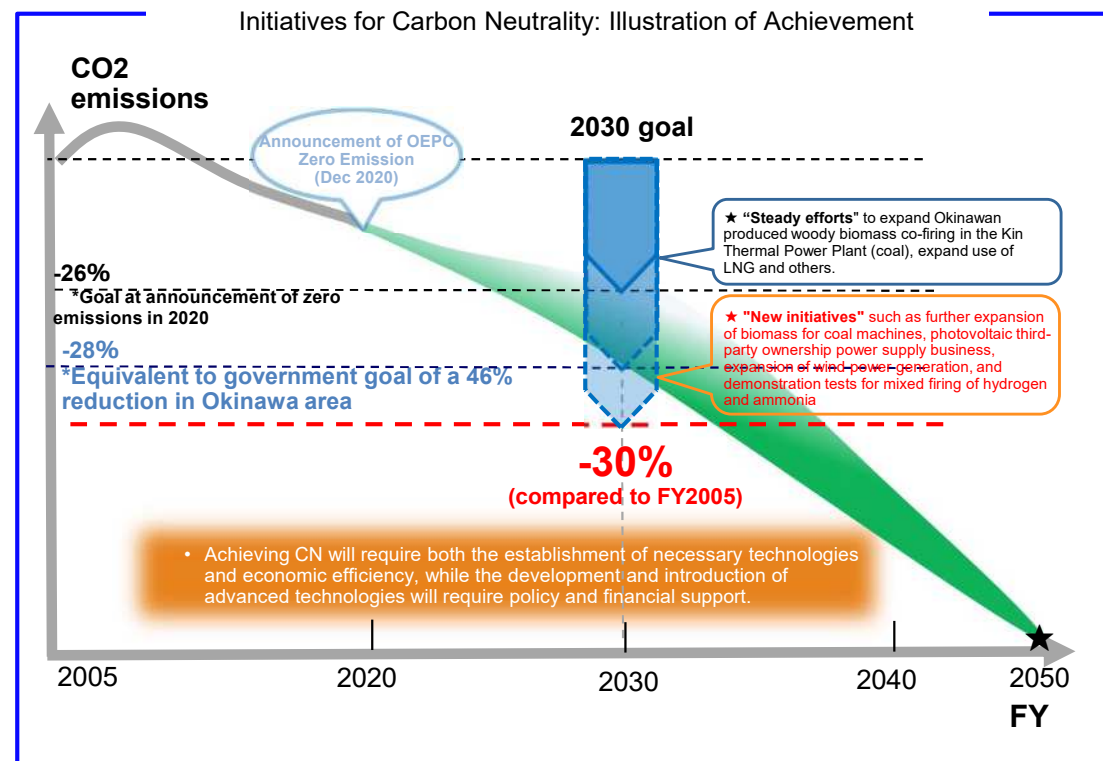
Initiatives to Achieve Carbon Neutrality



“ Just Transition in the Okinawa area ” FY2030 ambitious target

- Toward zero emissions in 2050, we published "Just Transition in the Okinawa Area" in the 2022 Integrated Report as a unique path that will not have a significant impact on the local economy, taking into account the regional characteristics of the Okinawa area.
- The power source composition of the FY2030 government target of -46% includes renewable energy power sources and nuclear power, which are difficult to develop in the Okinawa area. Existing thermal power sources that can ensure reserve and inertia power are also necessary for a stable supply of electricity.
- In the Okinawa area, where zero-emission power sources are limited, the government's target is equivalent to -28% if we assume S+3E and replace it with applicable power sources. From there, we have gone even further and set an ambitious target of -30%* for FY2030.

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%



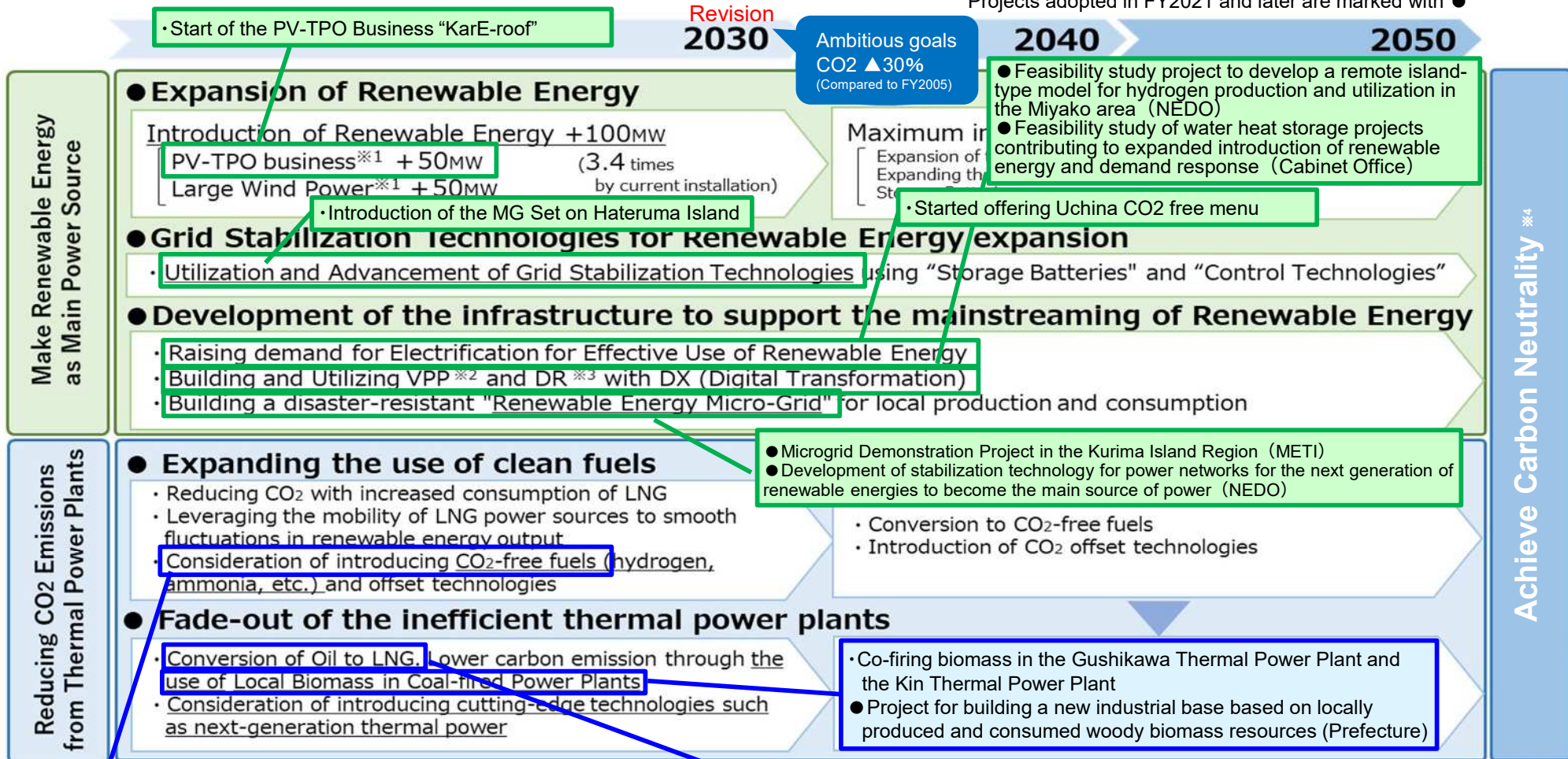
* Since the previous goal set by the government compared to FY2013 was a 26% reduction (a 25.4% reduction from FY2005), with a goal compared to FY2005 also shown, we have set our goal to be a 26% reduction from FY2005, which is higher than the government's. As a measure against global warming, our company started co-firing biomass in the Gushikawa Thermal Power Plant in 2010, and introduced the Yoshinoura Thermal Power Plant (LNG) in 2012, 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.

Initiatives to Achieve Carbon Neutrality: Roadmap

- In order to achieve zero emissions, we will work on the “Make Renewable Energy as Main Power Source,” “Reducing CO2 Emissions from Thermal Power Plants,” which are the two directions in the roadmap for the next 30 years, and “Promoting Electrification”.



*Projects adopted in FY2021 and later are marked with ●



- The development of hydrogen co-firing operation technology of electric power reserve source using actual commercial systems and the building of a hydrogen utilization model in the Okinawa area (NEDO)
- Hydrogen supply chain study in Okinawa (Cabinet Office)
- Project for the utilization of hydrogen toward the realization of a CN society on remote islands (Prefecture)
- Investigation Project for Local Production and Consumption of Clean Fuel Ammonia (Cabinet Office)

Initiatives to Achieve Carbon Neutrality: Examples of Initiatives



Example:

Development of the “KarE-roof (for businesses)”

Free installation service of photovoltaic generation and storage batterie (PV-TPO Business)

- We have entered into 25 commercial service contracts with total output of 1,960 kW.
- Of these, we have started operation for 16 contracts with output of 1,150 kW.

Okinawa tourist service inc.

OTS Toyosaki rental car station (Starts May 2023 : Tomigusuku city)

- Photovoltaic power generation facilities: 65kW
- Storage battery: 13.5kWh
- Electricity supply by photovoltaic: 50% of annual electricity consumption
- CO2 emissions: 84 tons/year (equivalent to 9,600 cedar trees)



Okinawa Hormel CO.LTD.

(Starts June 2023 : Nakagusuku village)

- Photovoltaic power generation facilities: 185kW
- Storage battery: 13.5kWh
- Electricity supply by photovoltaic: 9% of annual electricity consumption
- CO2 emissions: 254 tons/year (equivalent to 29,000 cedar trees)



Tomigusuku city town hall (Starts July 2023)

- Photovoltaic power generation facilities: 65kW
- Storage battery: 13.5kWh
- Electricity supply by photovoltaic: 15% of annual electricity consumption
- CO2 emissions: 91 tons/year (equivalent to 10,000 cedar trees)



Other examples

- Medical corporation Hakujukai (Starts May 2023)
- Okinawa IT Shinryo Park : building No.2, No.7 (Starts June 2023)
- Yaese town hall (Starts July 2023)
- Motobu academy, Motobu elementary school (Starts July 2023)
- Nakagusuku village town hall (Starts August 2023)

Initiatives to Achieve Carbon Neutrality: Examples of Initiatives

Example: Construction of Makiminato Gas Engine Power Plant (Natural gas)



- The purpose of this plant is to enhance the reliability of supply by stabilizing the system, such as through frequency control and supply-demand balance adjustment, as an electric power reserve source. (February 2021: Construction work started; March 2024: Scheduled to start operation)
- The fuel in use will be natural gas, whose CO₂ emissions per unit calorific value is about 30% lower than petroleum and which does not generate sulfur oxides (SO_x), either.
- In addition, by installing denitrification equipment, nitrogen oxide (NO_x) emissions will be reduced, and radiators will be employed to cool the power generation equipment. With such measures, the plant will be an environmentally friendly power generation facility.

[Overview of Power Plant]

Name	Makiminato Gas Engine Power Plant
Location	Urasoe City, Okinawa Prefecture (In the compound of the Okinawa Makiminato Thermal Power Plant)
Power generation capacity	45,000kW (7,500kW x 6 units)
Fuel for electricity generation	Natural gas
Fuel storage facility	2,000t (PC dike and outer tank integrated- type flat-bottom spherical-roofed cylindrical vertical storage tank)
Scheduled operation start	March 2024



↑ Entire view of Makiminato Gas Engine Power Plant

← Gas engine power facility

Initiatives to Achieve Carbon Neutrality: Examples of Initiatives



Example: Implementation of validation tests of hydrogen co-firing power generation

- The Company applied to NEDO's public invitation*1. "The development of hydrogen co-firing operation technology of electric power reserve source using actual commercial systems and the building of a hydrogen utilization model in the Okinawa area" have been adopted.
- In this project, as the next step of the NEDO research project*2, the Company will conduct hydrogen co-firing power generation tests at the Yoshinoura Multi Gas Turbine Power Plant with the aim of developing hydrogen co-firing power generation operation technology as an electric power reserve source and building a hydrogen supply utilization model that balances environmental and economic efficiency in island areas, etc. (Project implementation period: From FY2023 to FY2025)

*1. Public invitation by New Energy and Industrial Technology Development Organization (NEDO) of National Research and Development Agency "Development of Technologies for Realizing a Hydrogen Society/ Regional Hydrogen Utilization Technology Development/Regional Model Building Technology Development"

*2. Research projects implemented from FY2021 to FY2022, commissioned by NEDO "Investigation into the construction of a regional hydrogen utilization total system with the Yoshinoura Multi-Gas Turbine Power Plant in the Okinawa area as the core"

