Management Reference Materials

May 2021

The Okinawa Electric Power Company, Inc.

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Characteristics of the Business Bases

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Competition	◆ OEPC is outside the framework of wide-area power interchange because it has an isolated system. ◆ OEPC has voluntarily released power of 10,000kW supplied by J-Power. ◆ Competition is advancing due to the entry of energy suppliers. ◆ Power producer and supplier is currently implementing plans to construct power plants.	8
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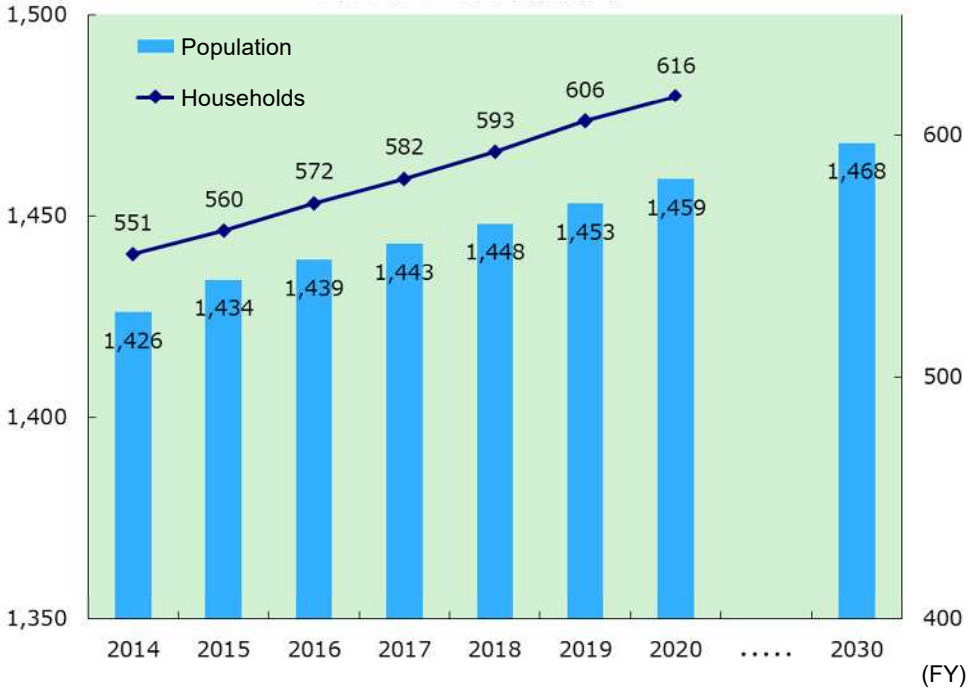
Remote Islands	◆ OEPC supplies power to 11 isolated systems including those in the main island. ◆ The region has a high cost structure because it has small islands and also because the scale of the economy is small. This leads to constant loss recording.	14
Global Warming Countermeasures	◆ Currently, possible measures are limited due to reasons including the region's geographic characteristics and constraints on the scale of demand. ◆ The introduction of renewable energies contributes to reducing fuel consumption and cost on remote islands, where fuel unit price is high. ◆ Since the systems of Okinawa area are small and independent, the limit of connection volume is likely to occur when using renewable energies.	15～22

Okinawa Prefecture Demographics (1/2)

- While the national population has started decreasing , the population in Okinawa is expected to increase until around 2030. *
- Demand for lighting is expected to increase as the population and number of households increases in the future.

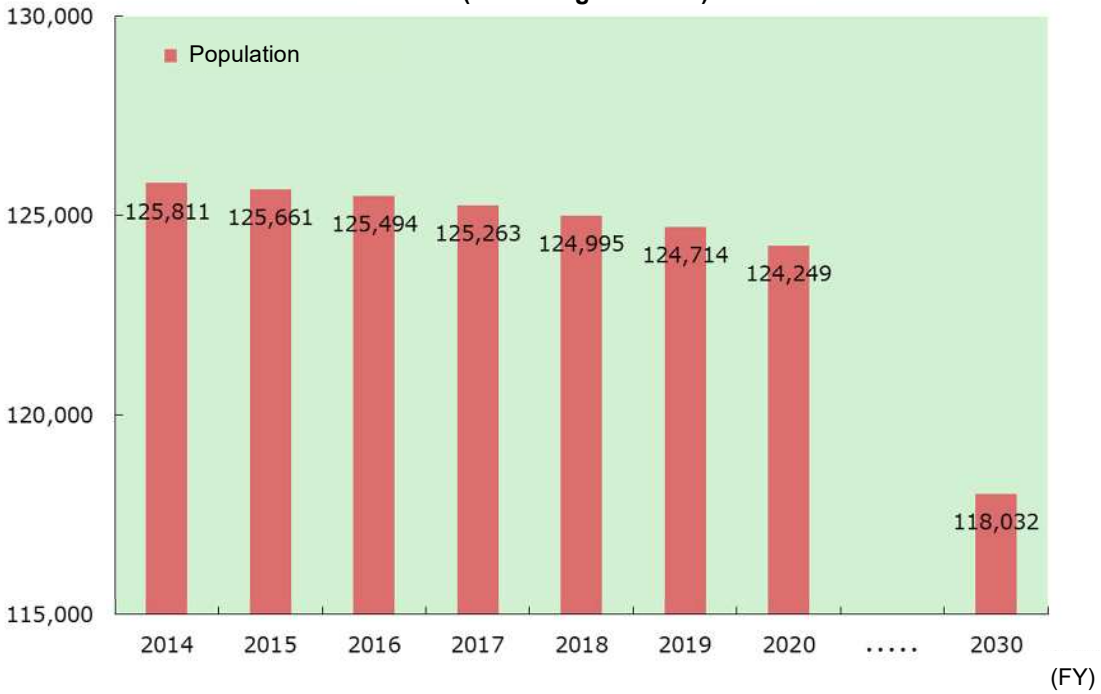
* According to the National Institute of Population and Social Security Research, "Regional Population Projections for Japan: 2015–2045 (2018)

Trend of Population and Households in Okinawa



Source:
Population: The actual figures are based on the data provided by the Ministry of Internal Affairs and Communications (MIC), and the Okinawa Prefecture Government.
. The figures for FY2030 are based on estimated data provided by the Organization for Cross-regional Coordination of Transmission Operators, JAPAN (OCCTO).
No. of households: The figures are based on the data provided by the Okinawa Prefecture Government.

Trend of Population (Excluding Okinawa)



Source: The actual figures are based on the data provided by MIC.
The figures for FY2030 are based on estimated data provided by OCCTO.

Okinawa Prefecture Demographics (2/2)

- The total fertility rate of Okinawa Prefecture in FY2019 was 1.82, the highest among all prefectures in Japan (nationwide:1.36)
- While the number of the national population in FY2020 decreased by -3.7 persons per 1,000 people, that of Okinawa increased by 3.2 people.

Okinawa Prefecture Demographics

(People)

		2016	2017	2018	2019	2020
The total fertility rate (Per Thousand people)	Nationwide	1.44	1.43	1.42	1.36	—
	Okinawa	1.95	1.94	1.89	1.82	—
	Ranking	(1)	(1)	(1)	(1)	—
The Increase of population (Per Thousand people)	Nationwide	-1.3	-1.8	-2.1	-2.2	-3.7
	Okinawa	4.0	2.6	3.1	3.9	3.2
	Ranking	(2)	(3)	(2)	(2)	—
The Natural Increase of population (Per Thousand people)	Nationwide	-2.3	-3.0	-3.4	-3.8	-4.0
	Okinawa	3.8	2.9	2.6	2.0	1.8
	Ranking	(1)	(1)	(1)	(1)	—
The Social Increase of population (Per Thousand people)	Nationwide	1.1	1.2	1.3	1.7	0.3
	Okinawa	0.2	-0.3	0.5	1.9	1.4
	Ranking	(11)	(17)	(11)	(8)	—

Source: ”Vital Statistics” by Ministry of Health, Labour and Welfare
”Population Estimates” by Statistics Bureau, Ministry of Internal Affairs and Communications
”Population Estimates” by Okinawa Prefectural Government
Figures for FY2020 are our own calculations based on published figures.

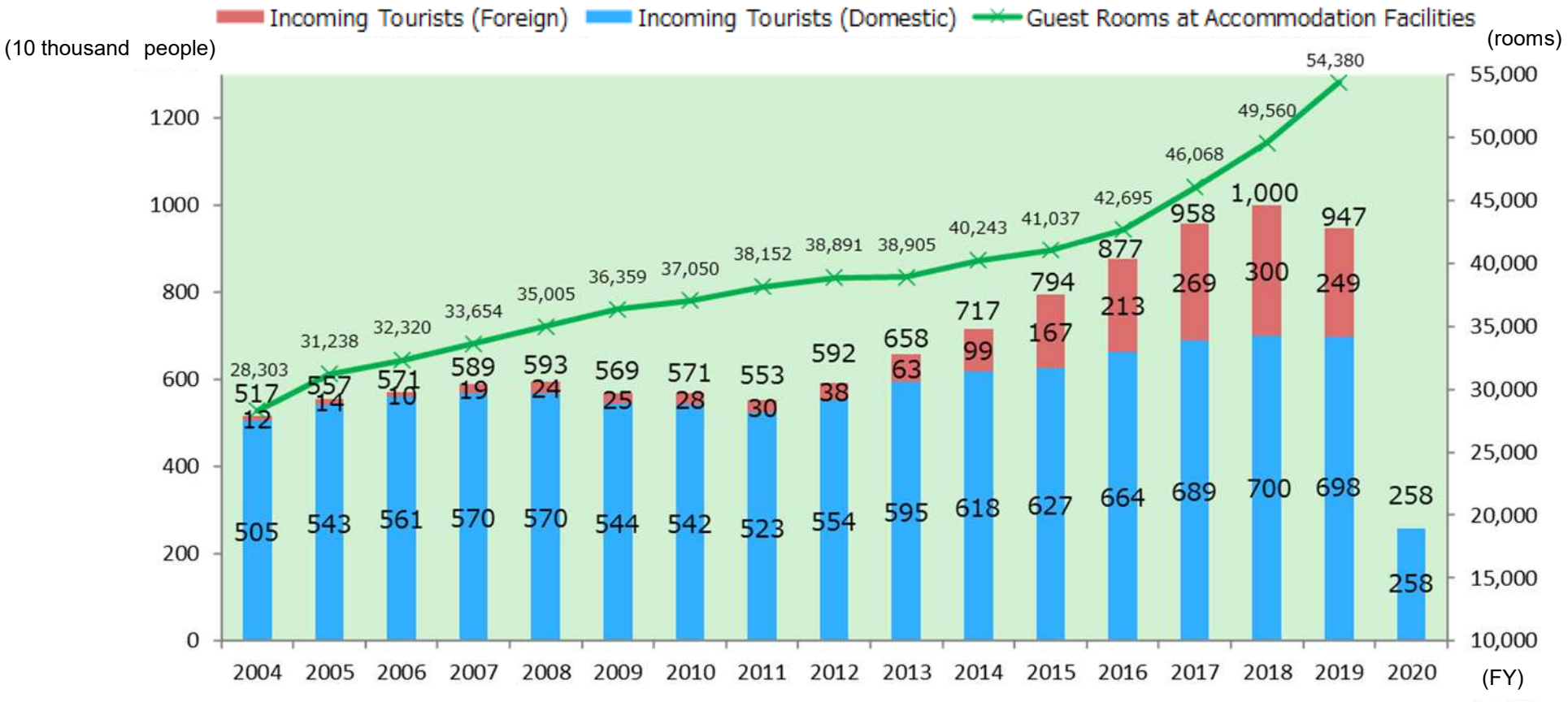
The figures in brackets in the chart show Okinawa Prefecture's national ranking

Number of incoming tourists（1/3）

■ In FY 2020, the number of incoming tourists was 2.58 million, it fell sharply from the previous year due to the spread of the novel coronavirus.

[Incoming tourists]
FY2019 : 9,470 thousand people (Growth rate of -5.3% year-on-year)
FY2020 : 2,580 thousand people (Growth rate of -72.7% year-on-year)

Trends of the Numbers of Incoming Tourists and Guest Rooms at Accommodation Facilities



Note: The breakdown and total values do not match sometimes due to rounding decimals.

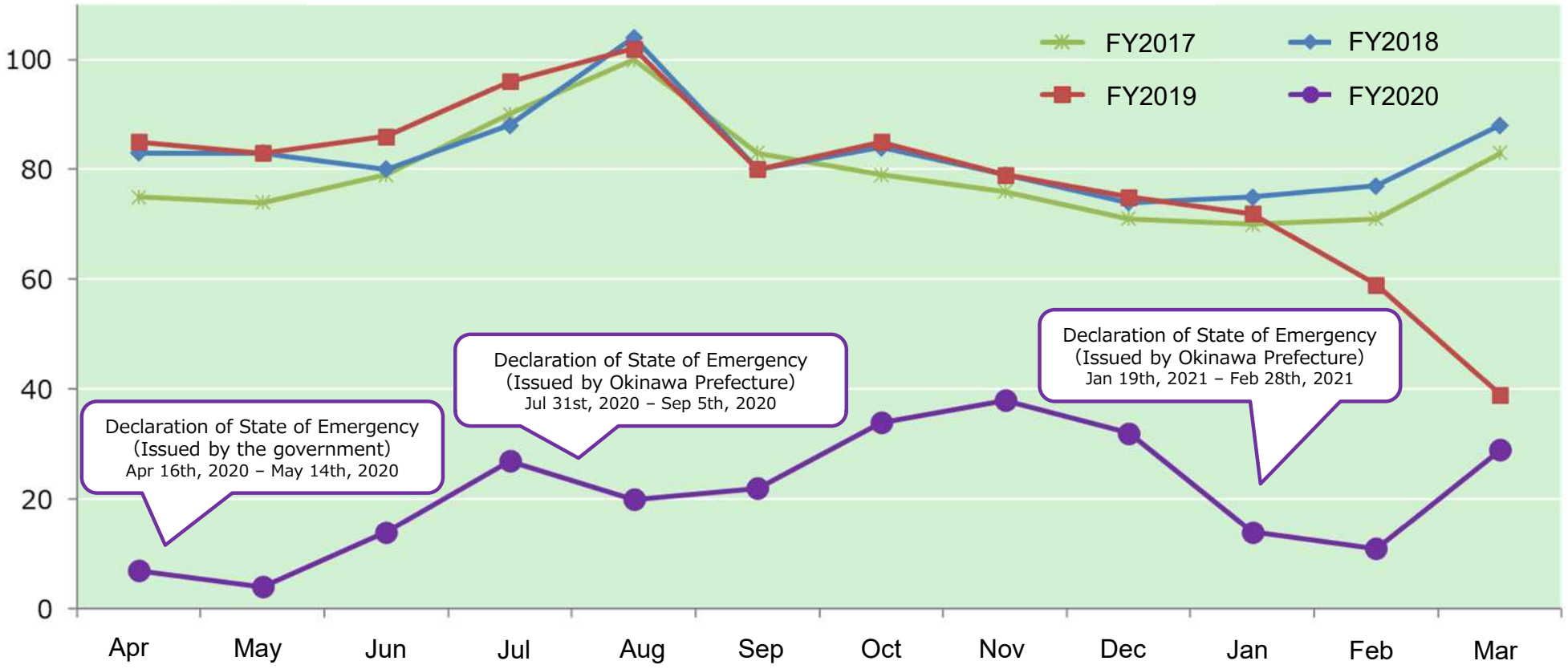
Source: “Tourism Guidebook”, “Summary Statistics on Incoming Tourists to Okinawa”, “2019 Accommodations Fact-finding Survey Result”, published by Okinawa Prefectural Government

Number of incoming tourists (2/3)

■ Due to the impact of the spread of the novel coronavirus, the situation has been severe since February 2020.

(10 thousand people)

Monthly trend of the number of incoming tourist



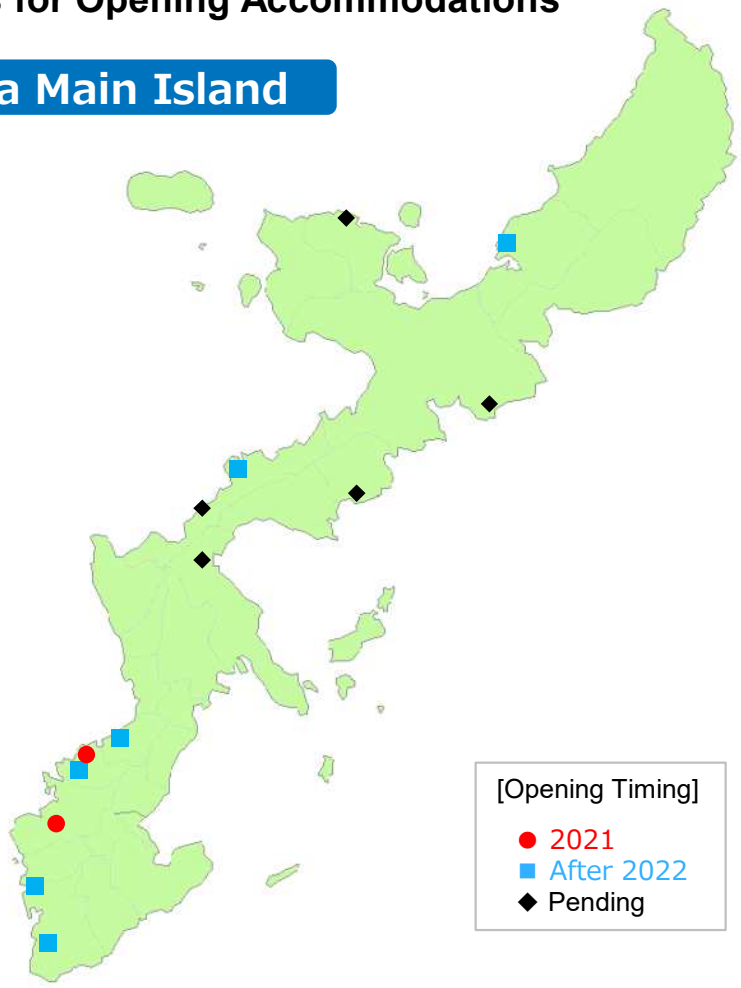
Source: “Tourism Guidebook” and “Summary Statistics on Incoming Tourists to Okinawa” published by Okinawa Prefectural Government

Number of incoming tourists (3/3)

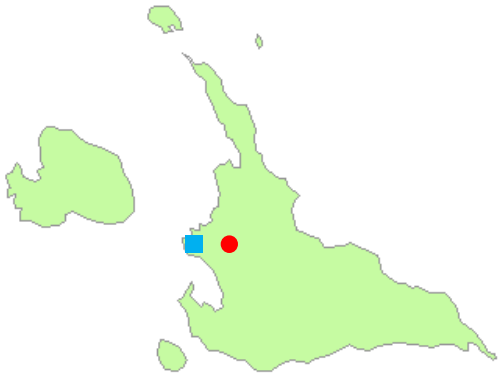
- Although the number of incoming tourists has been decreasing due to the novel coronavirus, the numbers of accommodation facilities and guest rooms have kept increasing in Okinawa Prefecture.
- Going forward, multiple accommodation facilities are planned to open.

Major Plans for Opening Accommodations

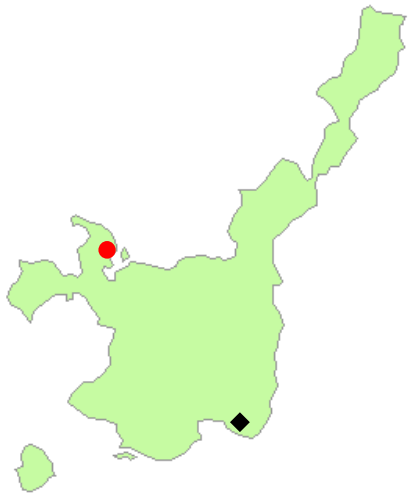
Okinawa Main Island



Miyako Island



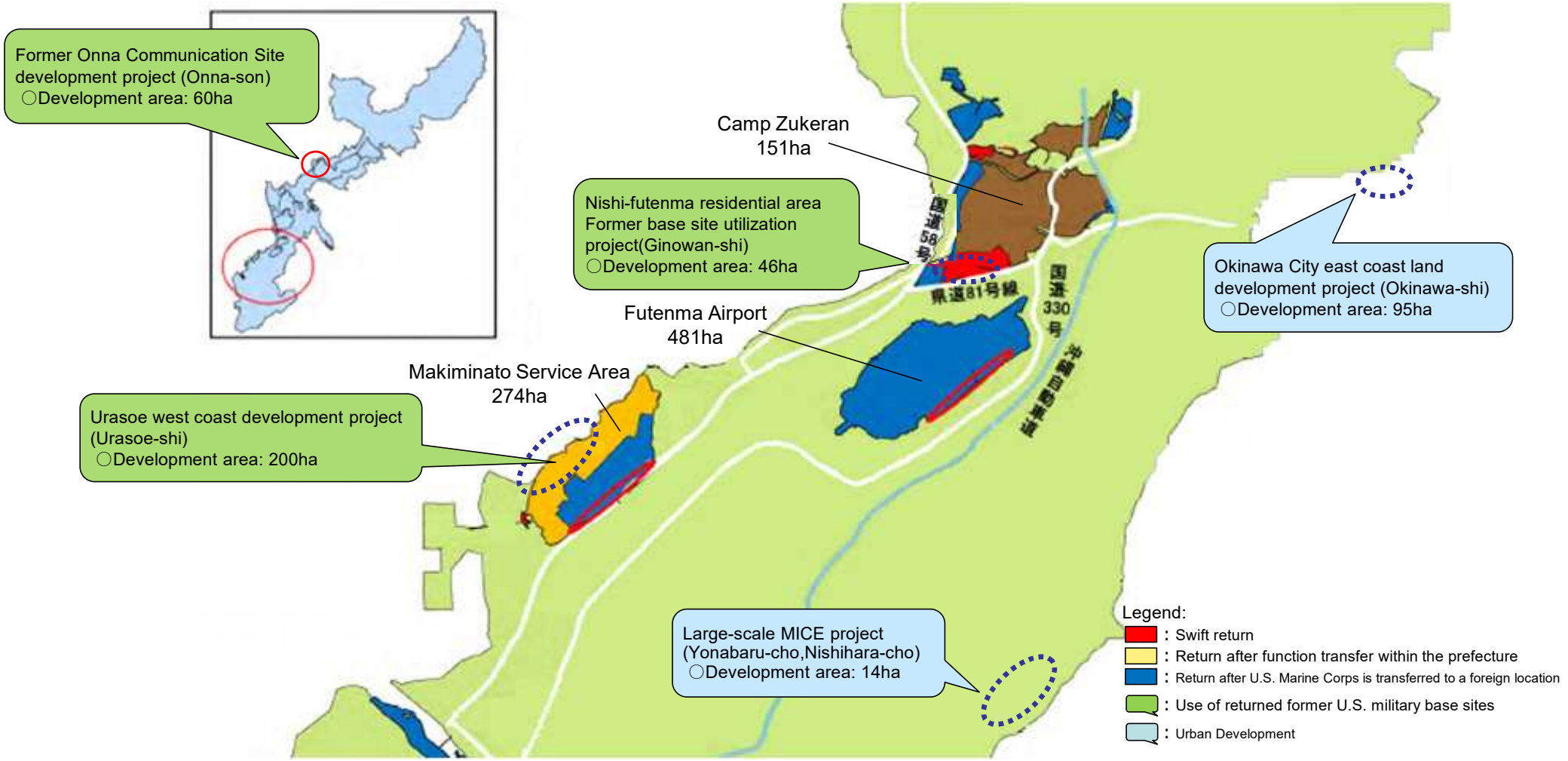
Ishigaki Island



Source: Compiled by OEPC based on newspaper reports, etc. *Planning more than 200 rooms

Urban Development of the Returned former U.S. military base sites and Others

■ By actively engaging in urban development projects including the returned U.S. military bases and supplying energy in the entire area, the Company will achieve the continued expansion of energy sales.



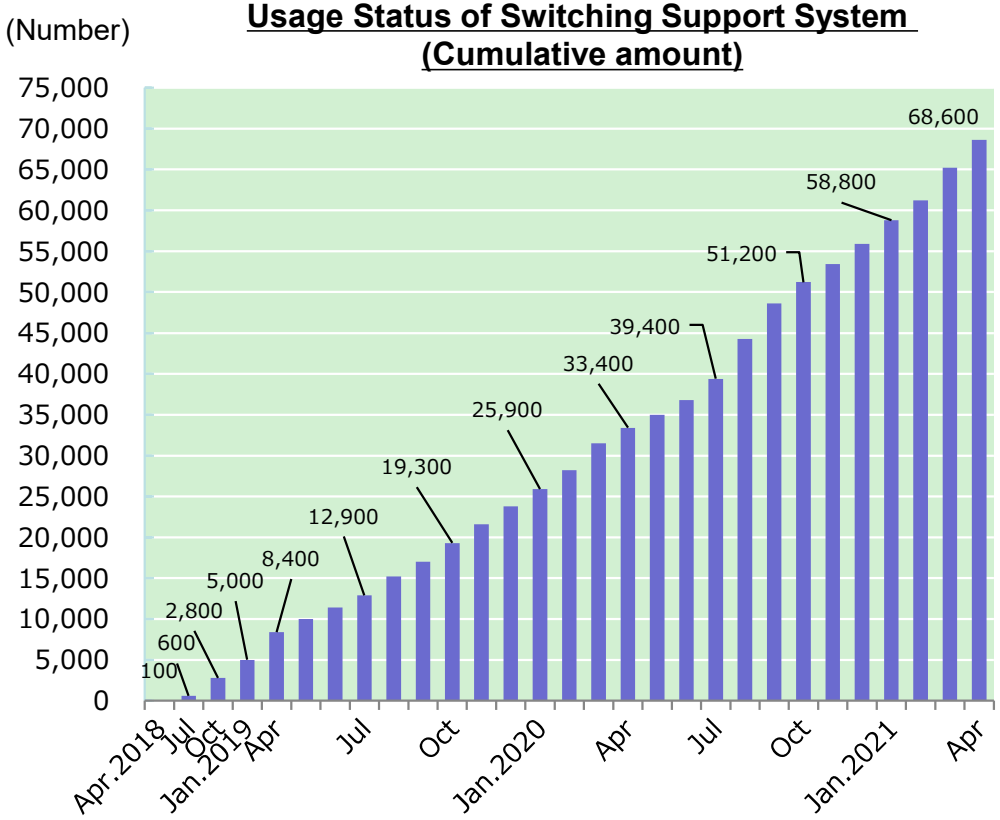
* Source: The material of the Okinawa Revitalization Council Chair and Specialized Committee Meeting (third session) presented on the Cabinet Office website, and Survey of Consideration of Ripple Economic Effects from Utilization of Former U.S. Forces Sites posted on the Okinawa Prefectural Government website

Full liberalization of the Electricity Market

- As a voluntary initiative to develop the competitive environment in the Okinawa area, which has an independent system, the Company is cutting out part of J-POWER's Ishikawa Coal Thermal Power Station, and offering routinely backing up and the wholesale electricity menu for supply-demand adjustment.
- Liberalization is in progress also in the Okinawa area, PPS's* share in the electricity sales volume reached 8.5% in the total of all voltages (as of February 2021).
- In FY 2021, further progress in competition is expected, such as the start of operation of biomass power plants by PPS.

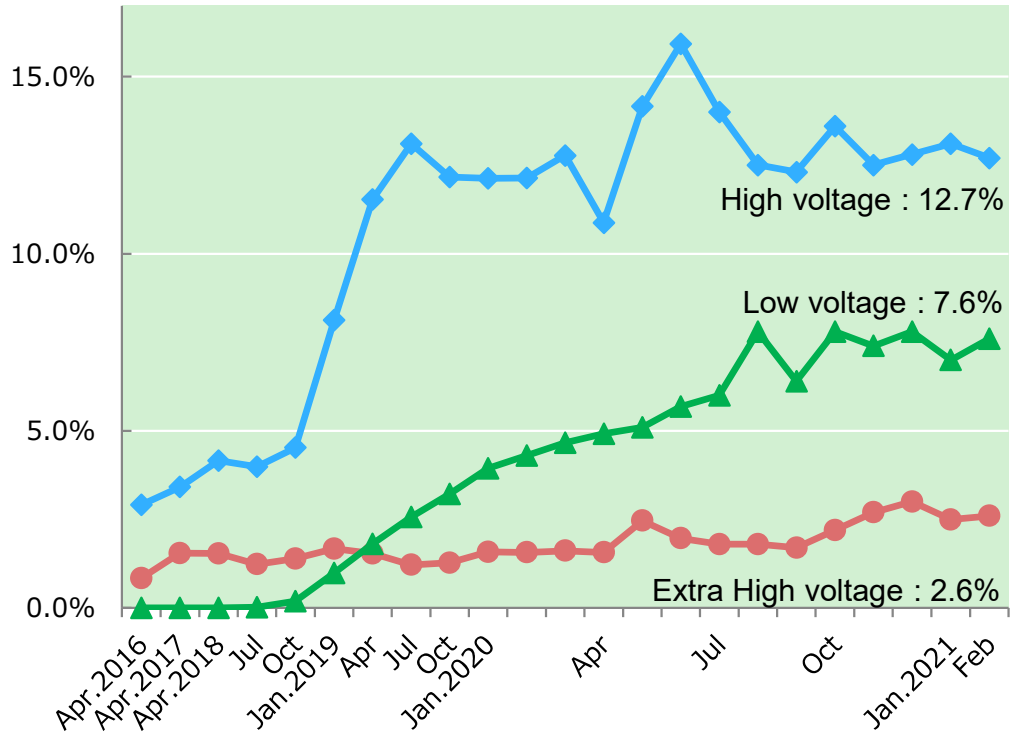
* new suppliers, officially called power producer and suppliers

Usage Status of Switching Support System (Cumulative amount)



Source : "Usage Status of Switching Support System".

Trend of PPS's Share in Electricity Sales Volume



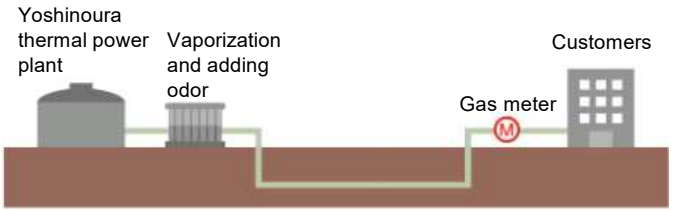
Source : "Electricity Trading Report".

Gas supply business

- Commenced gas supply business through subsidiary PEC in 2015.
- The OEPC Group will further promote sales of LNG by supplying LNG based on LNG supply center, capturing demand along newly constructed gas pipelines, and collaborating with other energy companies.

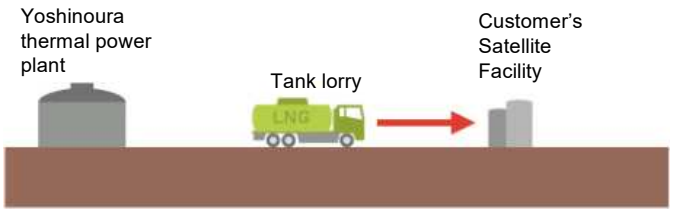
Pipeline supply (5 cases)

Supplies gas to customers in the vicinity of the Yoshinoura thermal power plant through gas pipelines after vaporizing and odorizing liquefied natural gas (LNG).



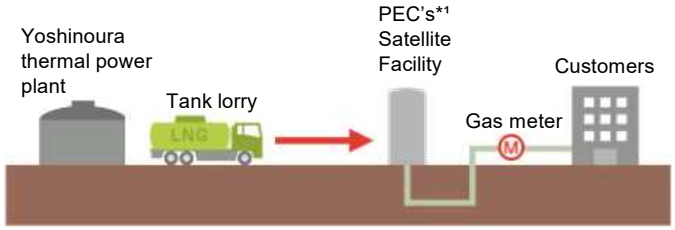
Lorry supply (9 cases)

Supplies LNG by tank lorry to customers in areas where pipelines are difficult to be developed.

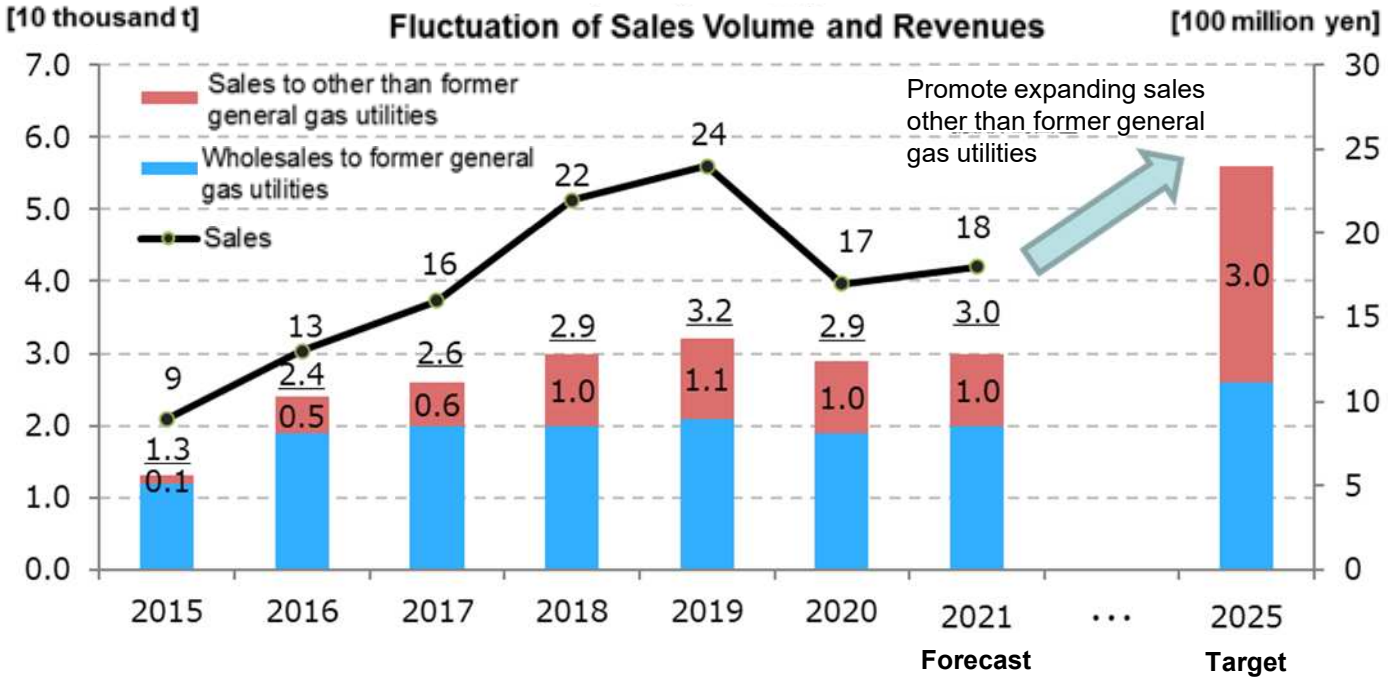


LNG Supply Center (7 cases)

At former U.S. military base site and industrial parks, PEC*1 constructs supply centers*2 and supplies gas through pipelines.



*1: Progressive Energy Corp.
*2: Awase Natural Gas Supply Center, Suzaki Natural Gas Supply Center and Makiminato Natural Gas Supply Center



Principal customers

- Okinawa Gas Co. (Wholesale)
- TAKUNAN STEEL CO., LTD
- Okinawa Watakyu shingu Co.
- ORION BREWERIES,LTD
- Chubu Tokushukai Hospital
- ITO EN, LTD.
- Hyatt Regency Seragaki Island, Okinawa
- Royal Hotel OKINAWA ZANPAMISAKI
- Musashino Okinawa

*Customers to whom we supply over 500t of gas per year

Energy Service Provider (ESP) Business

- We have established a new company called The Reliance Energy Okinawa, Inc., which is an energy service provider (ESP) in December 2017.
- We own electric and heat source facilities on behalf of customers, and process and supply energy.

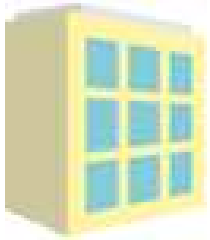
[Increase in new energy demand]

- 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

Okinawa Prefecture



Customer

REO Reliance Energy Okinawa

The Reliance Energy Okinawa, Inc.,

- 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.

< Examples of businesses adopting ESP>

SAN-A Urasoe West Coast PARCO CITY
- Service launch date: June 2019

Lab 4 of the Okinawa Institute of Science and Technology Graduate University
- Service launch date: April 2020

San-A Nishihara City (Existing renovation)
- Service launch date: April 2020

Yuuaikai Yuuai Medical Center
- Service launch date: May 2020

San-A Ishikawa City
- Service launch date: August 2020

San-A Naha Main Place (Existing renovation)
- Service launch date: April 2021

Power Generation Facilities (Power Supply Composition)

■ The composition of electric power source is highly reliant on fossil fuel, as developing nuclear or hydroelectric power generation is difficult in Okinawa due to the reasons of geographic condition and the small scale of demand. Accordingly, fossil fuels; petroleum, coal and LNG, are the only source for the composition.

■ We have secured long-term power supply capacity, the improvement of energy security, and effective countermeasures for global warming issues by commencing the operation of Yoshinoura Thermal Power Plant(since 2012), our first plant using LNG.

Power Supply Composition Ratio

(Before starting operation of Yoshinoura LNG Thermal Power Plant)

Note 1: The figures include other companies (but excluding demand shifted to new power suppliers)
Note 2: The figures include both the main land and remote islands.
Note 3: The percentage in brackets () for oil refers to the percentage for remote islands stated again.

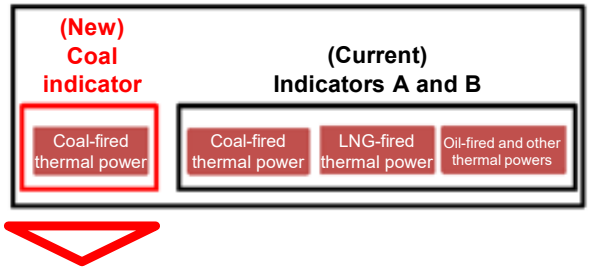
Response to the Fade-out of Inefficient Coal-fired Thermal Power Generation

■ For Okinawa, where thermal power generation has to be the mainstay, coal-fired thermal power generation is indispensable not only for stable supply but also for maintaining electricity rates. On the other hand, it is necessary to respond appropriately in light of the direction of the national government, such as the 2050 Carbon Neutral Declaration.

< The policy package for the Fade-out of Inefficient Coal-Fired Thermal Power Generation>

① Regulatory measures (Energy Saving Act)

New thermal power indicator (Conceptual diagram)



Target level: Power generation efficiency of 43%

* Corrective measures for calculation of power generation efficien
- ✓ Correction of biomass co-firing, etc.
- ✓ Correction of ammonia/hydrogen co-firing
- ✓ Correction of reduction in power generation efficiency due to adjusting operation

② Guidance by the capacity market

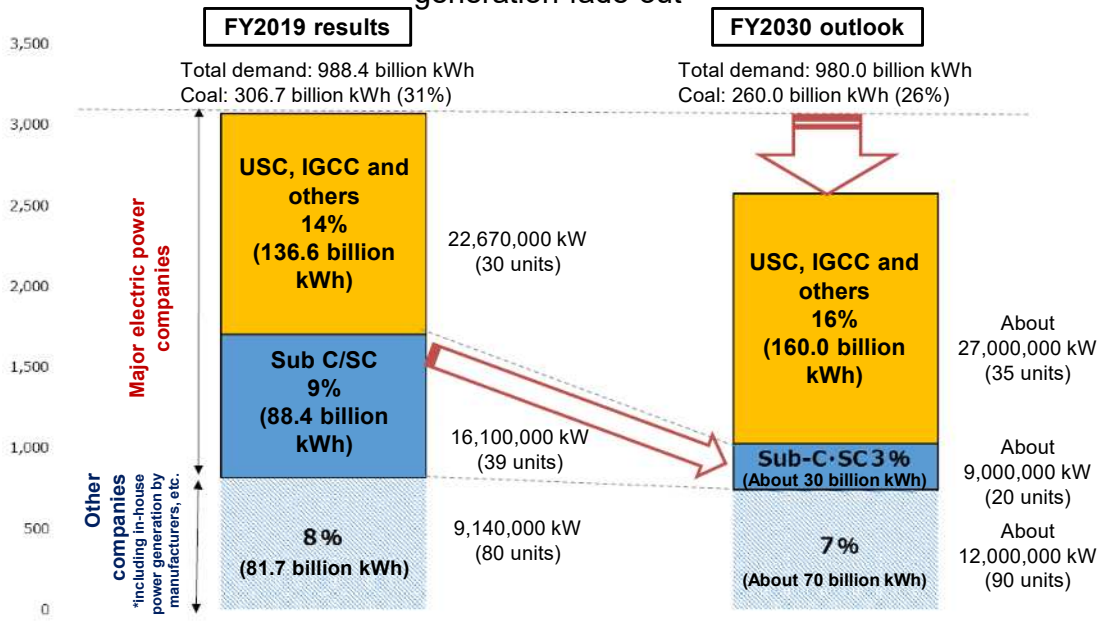
⇒ Not applicable to Okinawa

* "As coal-fired thermal power generation plays a role in supporting local employment, the local economy, and the stable supply of electric power, it is important to continue making efforts while listening to the opinions of relevant parties, in light of concerns expressed about the impact of its suspension and abolition."

Source: Interim Report of Coal-fired Power Study WG (April 23, 2021)

③ Fade-out plan (Annual submission)

(Diagram) Outlook of the inefficient coal-fired thermal power generation fade-out



*Estimation are based on transmission end power generation.
*The remaining SCs and Sub-Cs in FY2030 will be important facilities for stable supply and local employment, for which it is also necessary to take measures such as reduction of the operating rate and co-firing.

<Reference: Coal-fired thermal power stations owned by the Company>

Power station/unit		Maximum output	Power generation system	Start of operation
Gushikawa Thermal Power Plant	No. 1 Unit	156,000 kW	Sub-C	1994.3
	No. 2 Unit	156,000 kW		1995.3
Kin Thermal Power Plant	No. 1 Unit	220,000 kW		2002.2
	No. 2 Unit	220,000 kW		2003.5

Demand - Supply balance

- A high generation reserve margin is necessary because of OEPC's isolated system and the responsibility to provide stable supply as a public utility.
- The reserve capacity exceeding of the largest unit is secured so that it is possible to provide stable supply even if the largest unit breaks down.

- We would ensure long-term and stable supply.

Demand-supply balance of maximum electric power (August)

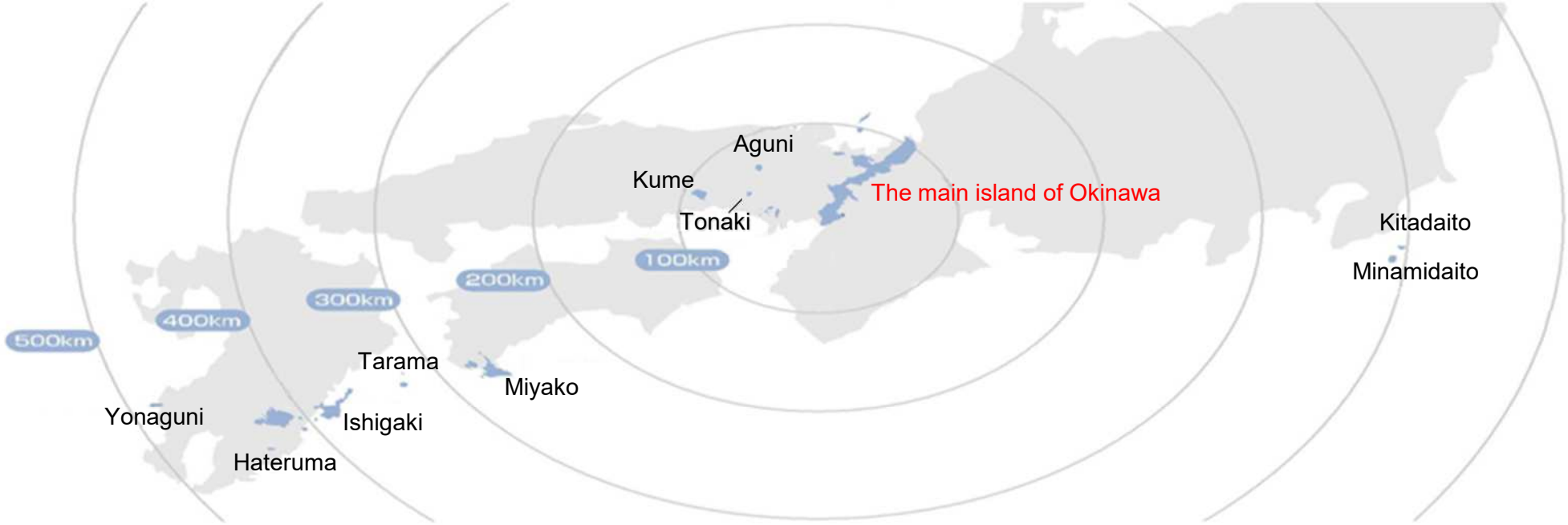
(Unit : Thousand kW, %)

		2020 (Reference)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Demand-supply balance	Supply capacity	2,072	2,063	2,256	2,290	2,336	2,167	2,288	2,291	2,294	2,295	2,299
	Peak load	1,501	1,501	1,518	1,537	1,549	1,557	1,565	1,573	1,580	1,588	1,596
	Reserve supply capacity	571	562	738	753	787	610	723	718	714	707	703
	Reserve supply rate	38.0%	37.5%	48.6%	49.0%	50.8%	39.2%	46.2%	45.7%	45.2%	44.6%	44.0%

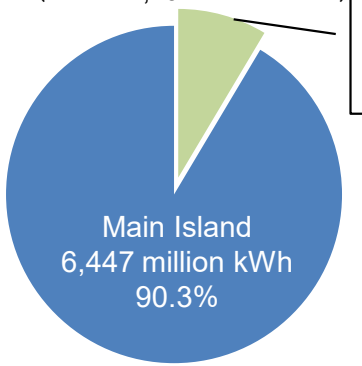
Note: Based on FY2021 Supply Plan Notification. (general transmission / distribution business)

Remote Islands
(Efforts to Improve Income and Expenditure)

- The region has a high cost structure because of such reasons as having small islands scattered about a vast sea area and the narrow scale of the economy.
- Remote island business occupies about 10% of electricity sales and residential, commercial and industrial use charges.

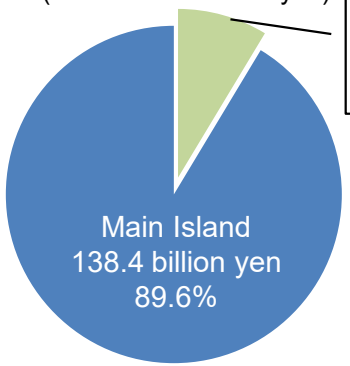


Electricity Sales Volume
(FY2020 results)
(Total : 7,137 million kWh)



Remote Islands
690 million kWh
(9.7%)

Electricity Sales
(FY2020 results)
(Total : 154.4 billion yen)



Remote Islands
16.0 billion yen
(10.4%)

(Efforts to improve remote island income and expenditure)

- Reducing fuel consumption by introducing renewable energies (Tiltable wind power generators, etc.)
- Effective utilization of waste oil
- Reducing the fuel consumption rate by introducing high-efficiency units

Efforts to Global Warming Countermeasures (1/2)

■ Expanding the introduction of renewable energy

- ✓ Introduction of Miyako Island Mega Solar Power Demonstration Research Facility
- ✓ Introduction of Abu Mega Solar Power Demonstration Research Facility
- ✓ Introduction of Ogimi Wind Power Generation Demonstration Research Facility
- ✓ Introduction of tiltable wind power generators and motor power generators
- ✓ Regional micro-grid construction project in Kurima Island, Miyakojima City.
- ✓ Free photovoltaic power generation and storage battery installation service "KarE-roof" (PV-TPO business)

■ Initiatives for thermal power generation equipment

Expanded use of LNG

- ✓ Introduction of Yoshinoura Thermal Power Plant (Gradual increase in LNG use)
- ✓ City gas and satellite supply of LNG fuels (Change of fuels in the industrial sector)
- ✓ Deployment of LNG to remote islands (Decision to introduce dual-fuel generators that can use heavy oil and LNG)
- ✓ Construction of Makiminato Gas Engine Power Plant

Expanded use of biomass

- ✓ Implementation of biomass co-firing at Gushikawa Thermal Power Plant
- ✓ Construction of a new woody biomass supply facility at Kin Thermal Power Plant to expand biomass co-firing
  *Reduction of environmental footprint through effective and expanded use of waste materials from buildings in the prefecture
- ✓ Introduction of the Yoshinoura Multi Gas Turbines (biofuels can be used)

▲Wood biomass distribution facility

- ■ Wood biomass consumption : approx. 30,000 t/year*
- ■ CO2 reduction: approx. 40,000 t/year*
  (*Total of Gushikawa and Kin Thermal Power Plants)
- ■ Amount of possible mixed combustion : approx. 3% (weight ratio)

Operational reinforcement

- ✓ Reinforcing the operation of thermal power plants to ensure the system stability of natural variability against the introduction of renewable energy
  (Implementation of daily start stop (DSS) and adjustment of load zones, etc. of power plants)

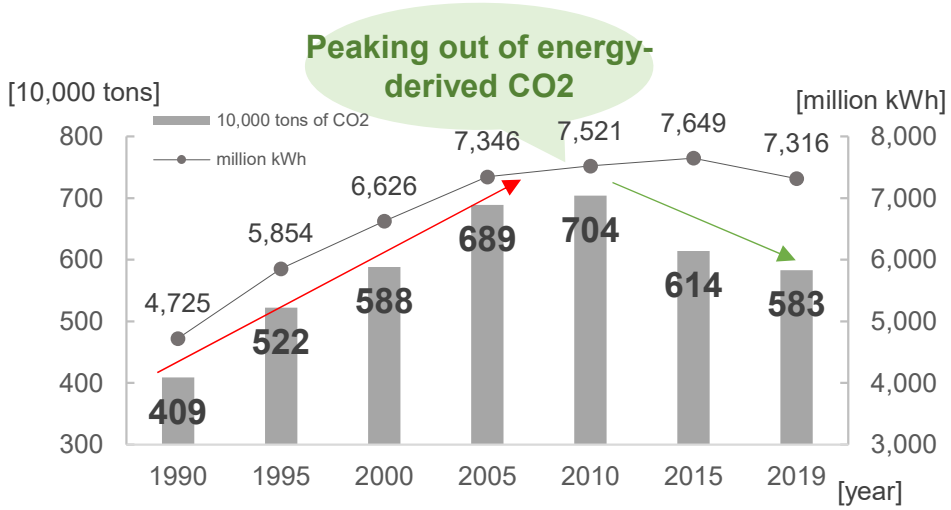
Efforts to Global Warming Countermeasures (2/2)

The following results have been achieved through our efforts to date:

No revision of electricity charges

▶ Achievement of peaking out energy-derived CO2 emissions

Amid growing demand for electric power due to economic development in Okinawa, we succeeded in peaking out energy-derived CO2 by expanding the introduction of renewable energy and introducing LNG fuel. The increased costs were absorbed by corporate efforts.



FY2010: Start of biomass co-firing at Gushikawa Thermal Power Plant (coal-fired)
FY2012: Introduction of Yoshinoura Thermal Power Plant (LNG-fired)
FY2018: Introduction of Hateruma Island tiltable wind turbine and MG set
FY2019: DSS at the Gushikawa Thermal Power Plant (coal-fired) exceeded 100 annually.
FY2020: Start of biomass co-firing at Kin Thermal Power Plant (coal-fired)
FY2021: Start of PV-TPO business

▶ Achievement of supplying renewable energy 100% (Hateruma Island)*

Combining tiltable wind power generation and a system stabilizer "Motor generator (MG Set)", 100% of the electric power on Hateruma Island was supplied with renewable energy.

Continued for about 10 days(229hours27minutes)

100% power supply with this technology

Hateruma Island:
Located about 24 km south of Iriomote Island in Okinawa Prefecture, it is the southernmost inhabited remote island in Japan.
Area: about 13 km^2
Number of households and population: about 275 households and 514 people

* Okinawa Electric Power Company was commissioned and implemented the "Project for maximum introduction of renewable energy on small remote islands" in Okinawa Prefecture.

Partnership Agreement with Okinawa Prefecture

■ In December 2020, the "Agreement on Partnership between Okinawa Prefecture and the Okinawa Electric Power Company, Incorporated for the Realization of A Decarbonized Society in 2050" was concluded.

■ Outline of the Partnership Agreement

Purpose

Under the philosophy of SDGs, Okinawa Prefecture and the Company should closely collaborate and cooperate for the realization of a sustainable decarbonized society in this prefecture by 2050.

Matters for collaboration

(1) Matters concerning the securing of stable and appropriate supply of electricity
(2) Matters concerning the expansion of the introduction of renewable energy
(3) Matters concerning the promotion of conversion to power generation that does not emit CO2 or emits less
(4) Matters concerning the promotion of the recovery and utilization of CO2 emitted from coal-fired power plants, etc.
(5) Matters concerning the promotion of electrification of transportation, etc.

Ceremony to conclude a partnership agreement with the prefecture
(At Okinawa Prefectural Government Office)

<Reference> Okinawa Clean Energy Initiative ～For the Realization of A Decarbonized Society in 2050～
https://www.pref.okinawa.jp/site/shoko/seisaku/kiban/initiative/okinawacleanenergyinitiative.html

Introduction status of renewable energy Facilities

■ The OEPC Group has introduced various forms of renewable energy such as wind power, solar power, biomass, and small hydroelectric power, maintaining and operating facilities for 27,928 kW in total.

【 OEPC 】

	Name	No. of Units	Output	Remark
Wind Power	Ogimi Wind Power	2	4,000 kW	
	Yonaguni Wind Power	1	600 kW	
	Aguni Tiltable Wind Power	1	245 kW	*1
	Minamidaito Tiltable Wind Power	2	490 kW	*1
	Tarama Tiltable Wind Power	2	490 kW	*1
	Hateruma Tiltable Wind Power	2	490 kW	*1
	subtotal（6 ）	**10**	**6,315 kW**	
Solar Power	Abu Mega Solar Power	—	1,000 kW	
	Kitadaito Daini Solar Power	—	100 kW	*2
	Miyako Mega Solar Power	—	4,000 kW	*2
	Miyako Branch Solar Power	—	10 kW	
	Tarama Solar Power	—	250 kW	*2
	Yaeyama Branch Solar Power	—	10 kW	
	Hateruma Solar Power	—	10 kW	
	Yonaguni Solar Power	—	150 kW	*2
	subtotal（8）	—	**5,530 kW**	

【 OEPC 】

	Name	No. of Units	Output	Remark
Others	Mix combustion of coal and wood biomass (at Gushikawa Thermal Power Plant)	2	—	*3
	Mix combustion of coal and wood biomass (at Kin Thermal Power Plant)	2	—	*4
	Miyako Small Hydroelectric Power	1	60 kW	
	subtotal（3）	**5**	**60 kW**	

【 Group company 】

	Name	No. of Units	Output	Remark
Wind Power	Sosu Wind Power	2	3,600 kW	
	Nakijin Wind Power	1	1,995 kW	
	Gushikawa Wind Power	1	1,950 kW	
	Sashiki Wind Power	2	1,980 kW	
	Iejima wind Power	2	1,200 kW	
	Iejima Daini wind Power	2	1,490 kW	
	Karimata Wind Power	2	1,800 kW	
	Sadefune Wind Power	2	1,800 kW	
	subtotal（8）	**14**	**15,815 kW**	
Solar Power	Iejima Solar Power	—	10 kW	
	Tokashiki Solar Power	—	198 kW	
	subtotal（2）	—	**208 kW**	

(As of March 31, 2021)

*1 Tiltable Wind Power

*2 Micro grid (a combination of system stabilizing technologies such as storage batteries)

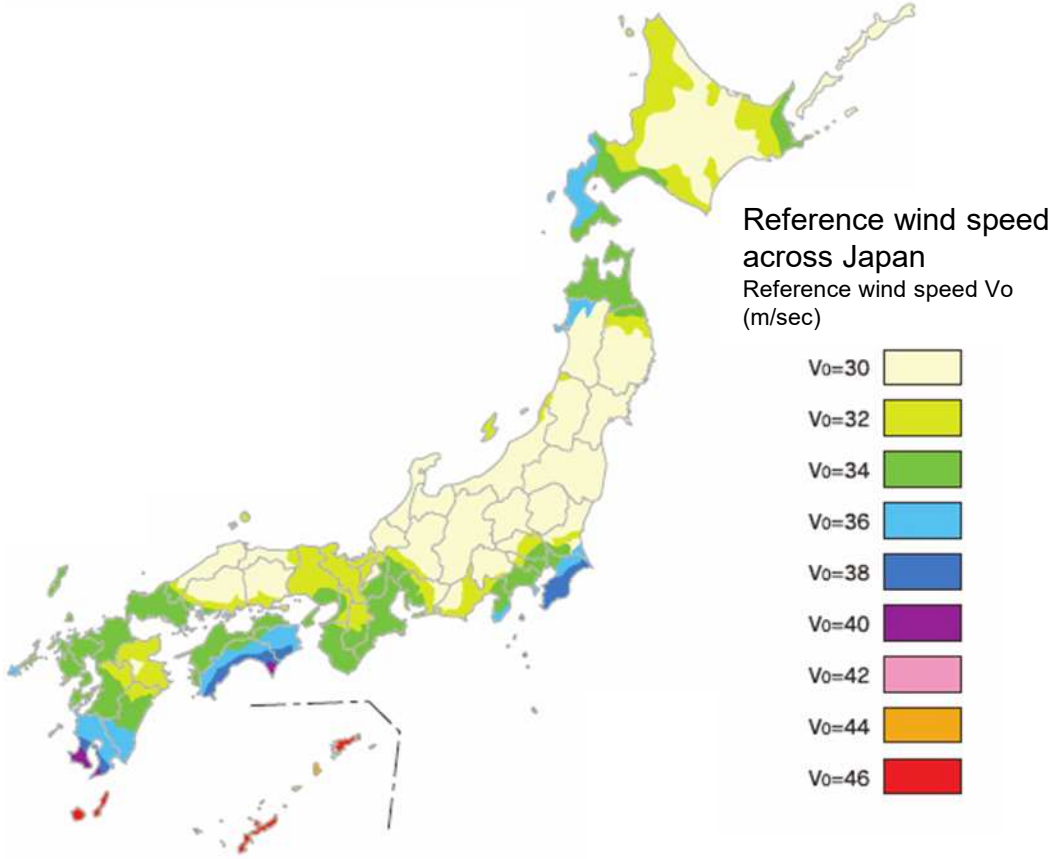
*3 Mix combustion of coal and wood biomass (The total output of the Gushikawa Thermal Power Plant is 312 thousand kW).

*4 Mix combustion of coal and wood biomass (The total output of the Kin Thermal Power Plant is 440 thousand kW).

Challenges for the introduction of renewable energies(1/3)

1 Wind power generation

- With wind turbines becoming larger in order to reduce costs through economies of scale, the capacity of the mainstream wind power generation equipment these days is 3,000 kW.
- Examination criteria tightened for construction of wind power generation facilities more than 500kW in Japan (2016).
- "Extreme wind speed"* ,which is the construction standards in Okinawa, is "90 m/s".
- At present, we have not been able to identify any wind turbine manufacturers around the world is producing wind power generation facilities more than 500kW that meet these standards. As a result, it is practically impossible to introduce new ones.
- The Company is considering measures to expand the introduction of wind power generation.



[Design reference wind speed distribution]
*Image of "Building Standards Act Notice No.1454" categories

Source: Japan Exterior Industry Association website

* Extreme wind speed
Extreme mean wind speed that may be experienced in the next 50 years

Extreme wind speed (90 m/s)
= Reference wind speed (46 m/s) × a × b × c

a: Coefficient corresponding to the terrain
b: Coefficient corresponding to the hub height, etc.
c: Coefficient corresponding to the maximum instantaneous wind speed

Challenges for the introduction of renewable energies(2/3)

2 Solar power generation

- The amount of solar PV generation interconnection in the Okinawa area has increased rapidly since the implementation of the feed-in tariff scheme (FIT scheme) in July 2012.
- With the revision of the "Regulation for Enforcement of the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities", all solar power generation and wind power generation facilities connected after April 1, 2021 will be subject to unrestricted and uncompensated output control.

[Connection of renewable energies（As of March 31, 2021）]

(MW)

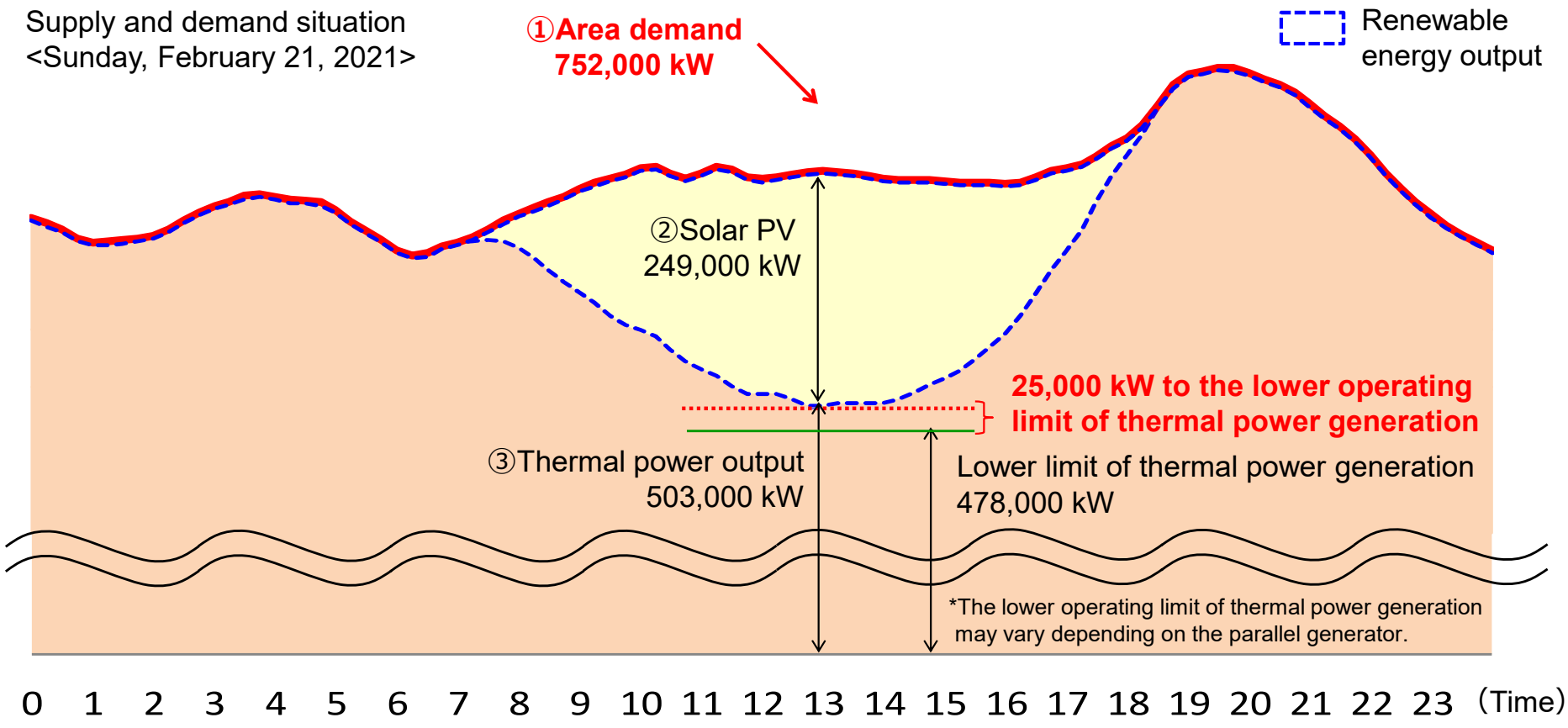
		Amount already connected	Connection application amount	Total
Main island of Okinawa		362	144	505
Remort island	Miyako	31	9	41
	Ishigaki	22	6	28
	Kume	3	0	3

*The figures may not exactly match the figures because of rounding.

Challenges for the introduction of renewable energies(3/3)

3 Supply and demand situation

- Due to expanded introduction of renewable energies, the lower operating limit of thermal power generation which is necessary for a stable supply is approaching.
- There is an increasing possibility of controlling the output of renewable energies in order to maintain the balance between supply and demand.



Q6. Efforts to base on TCFD Recommendations

- In September 2019, Expressing to support the Recommendations adopted by the Task Force on Climate-related Financial Disclosures(TCFD).
- At the same time, deciding to participate in TCFD consortium.

- The Company has been tackling with the issue of global warming and with the reduction of environmental load based on the “Okiden Group‘s Policy on the Environment”.
- In recognition of the fact that our business activities are significantly related to the issue of global environment, the Company agrees with the purpose of the TCFD recommendations, which is “analyzing the risks and opportunities related to climate change that affect business and promoting climate-related financial disclosures”.
- At present, the Company is considering about "Governance" and "Risks and Opportunities“ on the TCFD recommendations. The Company plans to disclose them on Integrated Report* in 2021.
- Also, Scenario analysis will be progressively disclosed by 2022.
- The Company will continue to enhance information disclosure on climate change, improve corporate value, and contribute to the realization of sustainable society.

* Through CSR reports and environmental action reports, we have been endeavoring to disclose information on environmental, social and governance initiatives(ESG).
After 2021, the Company will effort to disclose information more easy to understand such as by shifting to Integrated Report.

TCFD：Task Force on Climate-related Financial Disclosures
This task force was established by the Financial Stability Board (FSB), which is an international agency that has central banks, financial regulatory authorities and other organizations from major countries as members. In June 2017, a proposal was published regarding the ideal disclosure of information on climate-related risks and opportunities by companies.

TCFD Consortium ：
TCFD Consortium consists of companies and financial institutions supporting TCFD recommendations, where these organizations work together through discussing a path to effective disclosure by companies and adequate utilization of disclosed information in investment decisions by financial institutions. Established on May 27, 2019

Q & A

Q1. Topics of Okinawa's Economy

1 Current Status and Future Forecast of Okinawa's Economy

■ The current state

Recently, there are staying to be more difficult in the prefectural economy by the impacts of the novel coronavirus.

Trends in Main Economic Indicators of Okinawa Prefecture

(Unit: %, X)

Indicators	FY2020												
	Apr.	May	Jun	Jul	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	FY
Sales by large-scale retailers	-16.1	-6.9	2.5	-2.7	-8.1	-11.8	0.8	0.8	-0.3	-1.4	-0.6	-	-4.0
No. of new car sold	-39.3	-54.0	-32.7	-18.7	-14.9	-11.4	23.1	3.3	-0.2	4.9	-15.6	1.0	-16.0
No. of incoming tourists	-90.9	-94.7	-83.4	-71.2	-80.1	-71.9	-59.9	-52.3	-56.8	-80.2	-79.9	-24.5	-72.7
Value of public works contracts	37.2	-9.5	44.5	-14.1	0.3	0.7	0.7	-12.0	-21.9	7.9	5.8	-4.5	-0.1
New residential Construction starts	-2.1	44.1	-44.2	-36.9	-41.0	-63.4	-20.9	-23.7	-35.4	19.1	-15.0	-33.2	-27.4
Total unemployment rate	3.4	3.4	3.6	3.2	3.5	3.7	4.0	3.0	3.4	3.6	3.7	4.4	3.6
Job Opening Ratio	0.91	0.78	0.68	0.67	0.67	0.64	0.66	0.71	0.72	0.71	0.69	0.69	0.72

Note 1: The figures for 'Sales by large-scale retailers' are calculated on an all-store base. The values in February 2021 are preliminary figures.
The values for the fiscal year are the total figures from April 2020 to February 2021.
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.)
Source: Okinawa General Bureau, Okinawa Prefecture, Ryugin Research Institute, and others.

■ Prospect

The prefectural economy is expected to continue to be affected by the novel coronavirus.

Q1. Topics of Okinawa's Economy

2 Economic Growth of Okinawa Prefecture under the Okinawa Promotion Plan

- With implementation of a variety of action plans under the Okinawa Prefectural government's "Basic Plan of Okinawa 21st Century Vision (Okinawa Promotion Plan)" which started in FY2012, the prefecture's GDP posted growth rate increase of outpacing the national average growth rate.
- Recently, the prefectural economy continue to be affected by the novel coronavirus, but the demand for electricity is expected to increase in the medium to long term because it's expected to grow the prefectural economy.

Prefectural GDP and National GDP

(billion yen)

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019
Prefectural GDP	-0.4% 3,861.2	5.4% 4,071.0	3.2% 4,203.2	1.5% 4,266.4	2.0% 4,351.4	0.1% 4,354.0
National GDP	-0.4% 530,191.6	1.7% 539,409.3	0.8% 543,462.5	1.8% 553,171.1	0.3% 554,749.1	-0.3% 552,921.5

Sources: "Prefectural Accounts for FY2017", "Prefectural economic outlook for FY2019" and Cabinet Office "List of Statistical Tables" (Second Preliminary Data for the October-to-December 2020 period)

Note : Prefectural GDP's for FY2018 and FY2019 are estimates. Figures in the upper row are growth rates on a Y to Y basis.

Basic Plan of Okinawa 21st Century Vision (Okinawa Promotion Plan)

In May 2012, the "Basic Plan of Okinawa 21st Century Vision (Okinawa Promotion Plan)" was formulated under the initiative by the Okinawa Prefectural government (revised in May 2017).

Through the implementation of various measures that are developed based on this plan to take advantage of regional characteristics of Okinawa Prefecture, gross production in Okinawa（nominal）in FY2021 is estimated to increase about 1.4 times compared with that in FY2010 to 5,100 billion yen.

As the plan is scheduled to expire in FY2021, the national and prefectural governments conducted a comprehensive inspection of the implementation status in March 2020, and are currently making efforts to formulate the next promotion plan.

Q2. What is the Current State of U.S. Military Bases?

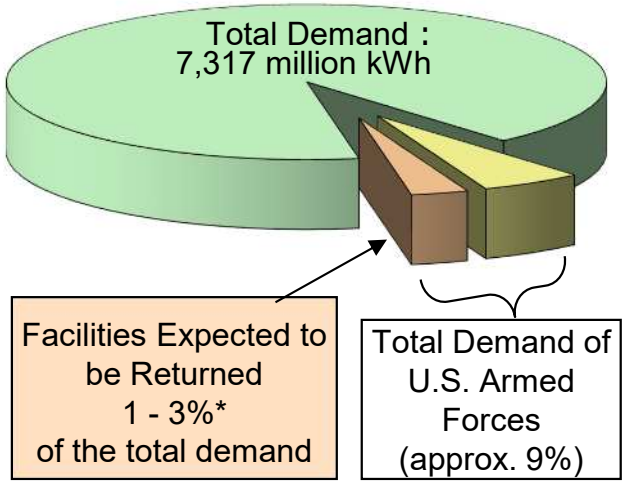
Outline of the U.S. military Forces in Okinawa

No. of Facilities	33
Area	186,973km^2

<Reference>
No. of employees working for the U.S. Armed Forces in Okinawa: 8,957
*As of the end of March 2020.

Sources ： Japan Ministry of Defense “US Forces and SDF Bases in Okinawa March 2021”, Military Base Affairs Division, Executive Office of the Governor, Okinawa Prefecture

The U.S. Armed Forces’ share of total electricity demand（FY2020)



* Range in figures due to planned return of facilities includes partial return.

Principal electricity supply destination facilities *1

Name		Location *2	Area
Camp Gonsalves	[US Marine Corps]	Kunigamison, Higashison	36,590km^2
Okuma Rest Center	[US Air Forces]	Kunigamison	546km^2
Iejima Auxiliary Air Base	[US Marine Corps]	Ieson	8,015km^2
Yaedake Communication Site	[US Air Forces]	Motobucho, Nago-shi	37km^2
Camp Schwab	[US Marine Corps]	Nago-shi, Ginozason	20,626km^2
Camp Hansen	[US Marine Corps]	Nago-shi, Ginozason, Onnason, Kincho	48,728km^2
Kadena Ammunitions Storage Are	[shared use]	Onnason, Uruma-shi, Okinawa-shi, Kadenacho, Yomitanson	26,584km^2
Camp Courtney	[US Marine Corps]	Uruma-shi	1,339km^2
Camp Mc Tureous	[shared use]	Uruma-shi	379km^2
Camp Shields	[shared use]	Okinawa-shi	700km^2
Torii Station	[US Army]	Yomitanson	1,895km^2
Kadena Airbase	[US Air Forces]	Okinawa-shi, Kadenacho, Chatancho, Naha-shi	19,855km^2
White Beach Naval Facility	[shared use]	Uruma-shi	1,568km^2
Camp Kuwae	[US Marine Corps]	Chatancho	675km^2
Camp Zukeran	[US Marine Corps]	Uruma-shi, Okinawa-shi, Kitanakagusukuson, Chatancho, Ginowan-shi	5,341km^2
Futenma Airport	[US Marine Corps]	Ginowan-shi	4,759km^2
Makiminato Service Areas	[US Marine Corps]	Urasoe-shi	2,676km^2
Naha port facilities	[US Army]	Naha-shi	559km^2

*3

*1 Professional use and large-demand customers
*2 Areas where facilities exist on a cross-area basis
*3 Facilities south of Kadenacho are scheduled to be returned (Partial return applies to Camp Zukeran)

Q3. What is the Current State of Promotion of Electrification?

■ **Approach for the promotion and growth in the household sector**

(1) Starting to offer the "Rikka Denka Lease“, a new lease service plan of the electrical appliance.

(2) Strengthening cooperation with local home appliance stores and housing equipment manufacturers.

(3) Expanding sale channels further.

(4) Implementing a campaign to give a gift of Amazon Prime.

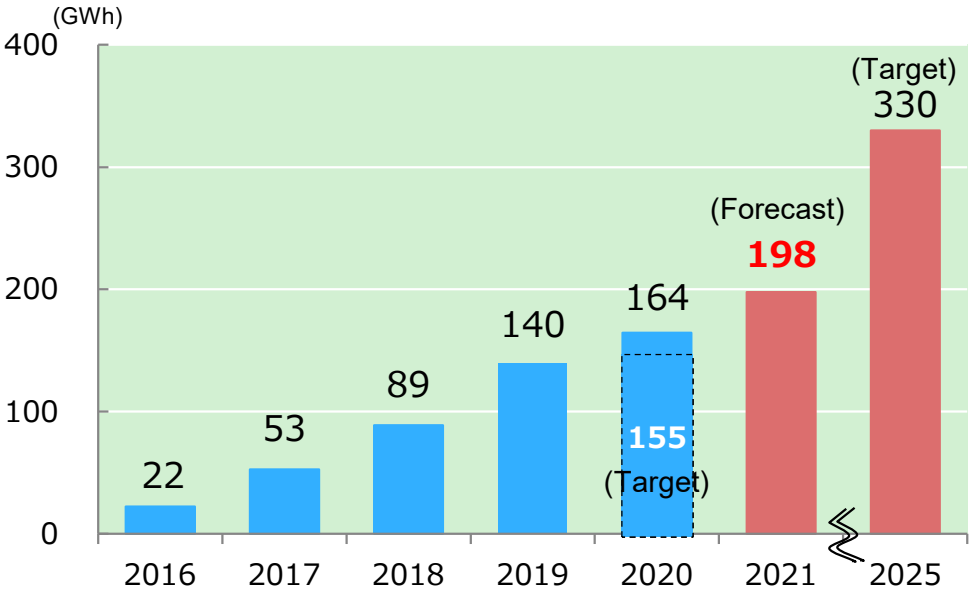
■ **Approach for sales promotion in the corporate sector**

(1) Offering customers comprehensive proposals for electrification (air-conditioning systems, kitchens, and water heaters) appropriate for their power usage.

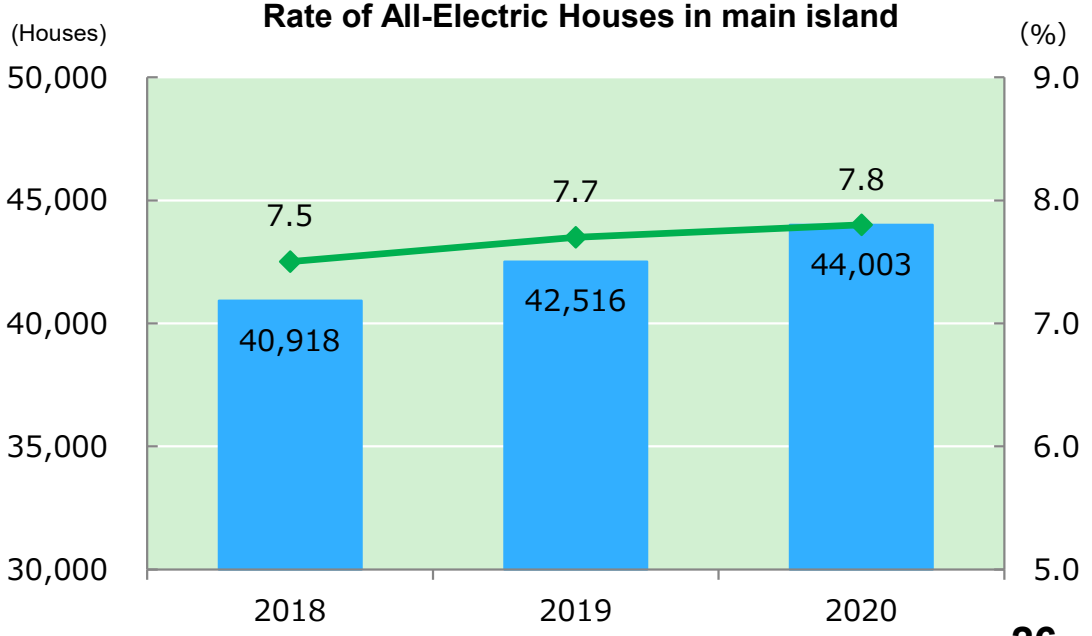
(2) Strengthening of cooperation with sub-users including manufacturers, contractors, design offices, etc.

(3) Utilization of public subsidy system, etc.

Acquired demand and target



Trends of the Total Number and Penetration Rate of All-Electric Houses in main island

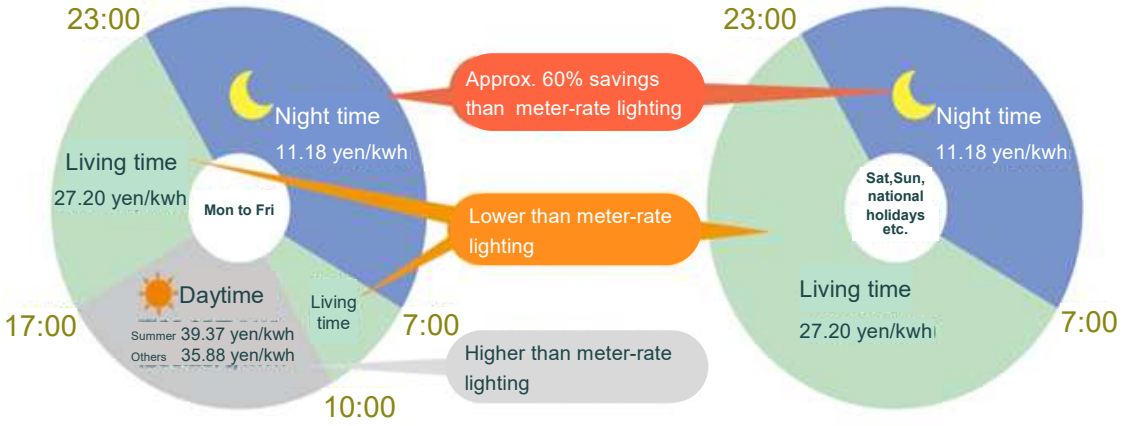


Q4. What is the enrichment of electricity rate menus?

The electricity rate menu for all electrification

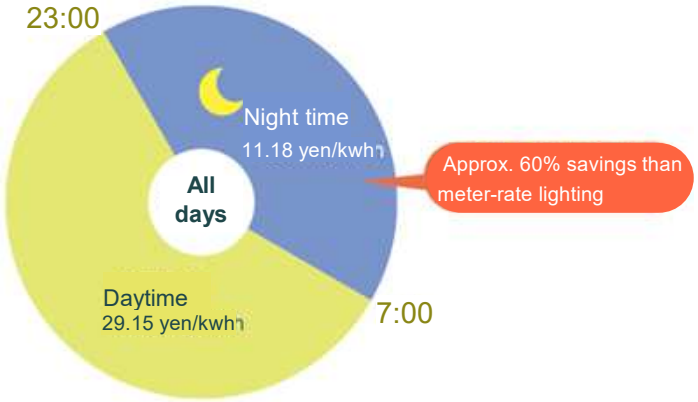
◆Ee Home Holiday

Suitable for double-income households who use less electricity on weekdays.



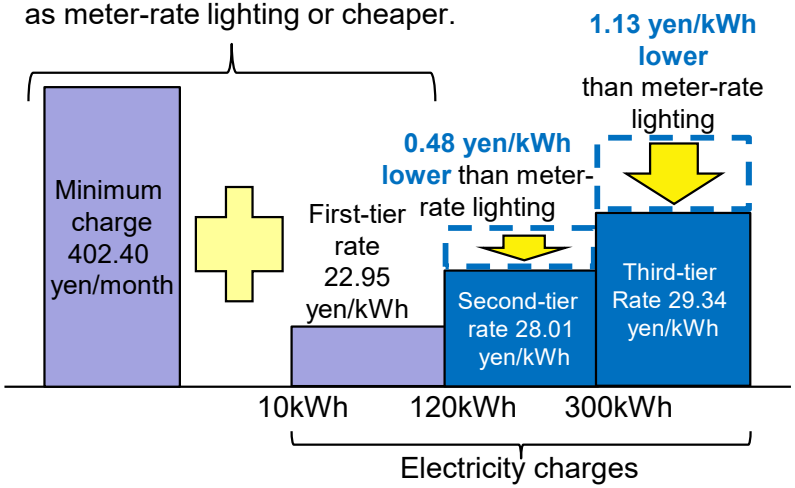
◆Ee Home Flat

Suitable for households of full-time housewives and senior citizens who use more electricity during the daytime on weekdays.



Good Value Plan

The plan that is more advantageous than meter-rate lighting by setting the unit price to be the same as meter-rate lighting or cheaper.



au Denki

auでんき
powered by 沖縄電力
沖縄電力 × au 沖縄セルラー

- ✓ This is a service for customers using au.
- ✓ OEPC supplies electricity as before.
- ✓ The electricity tariff is equivalent to the electricity tariff charged at the meter-rate lighting plan by OEPC.
- ✓ The au WALLET points corresponding to up to 5% of electricity tariff are returned.

Meter-rate lighting plus

plus

		Unit	Unit price (yen)
Minimum charge	Up to the first 10 kWh	One contract	402.40
Electric charge	Over 10 kWh up to 120 kWh	1kWh	22.95
	Over 120 kWh up to 300 kWh	1kWh	28.49
	For portions over 300 kWh	1kWh	30.47

The menu that is an economical to be able to earn more points at the same charge as meter-rate lighting.

Q5. What are the efforts to fuel cost reduction?(1/2)

■ Efforts toward stable procurement of fuels and reduction of fuel costs.

Making Ishikawa Thermal Power Plant the base of distributing fuel oil to remote islands

Reduction of fuel costs through measures including purchasing fuel oil on the spot market

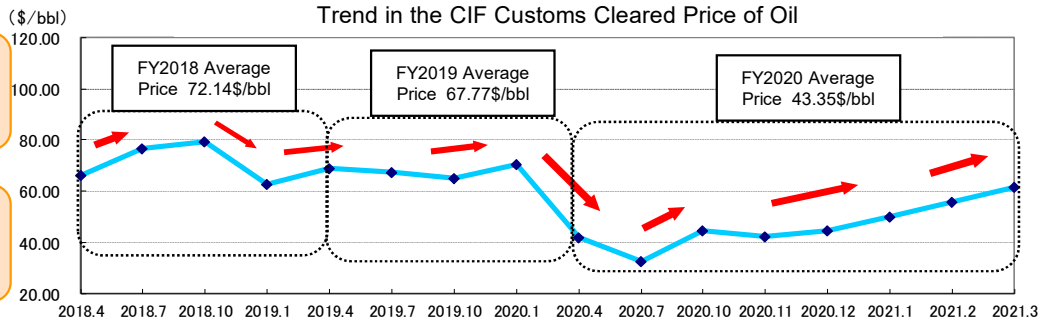
Stable procurement through long-term coal purchase contracts

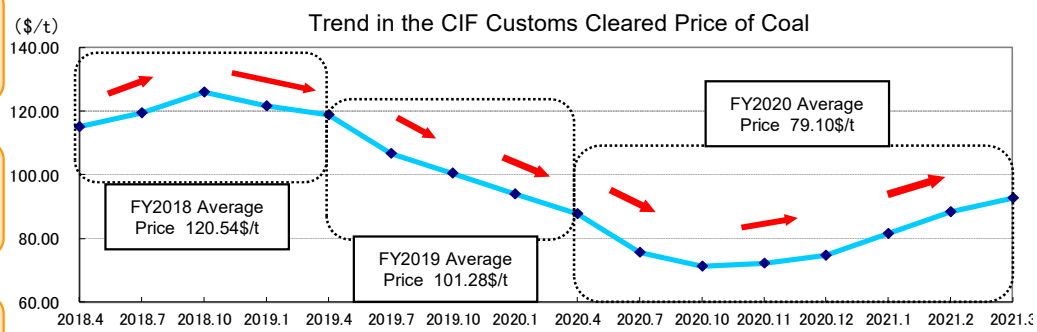
Continued use of sub-bituminous coals that are low in not only prices but also transport costs

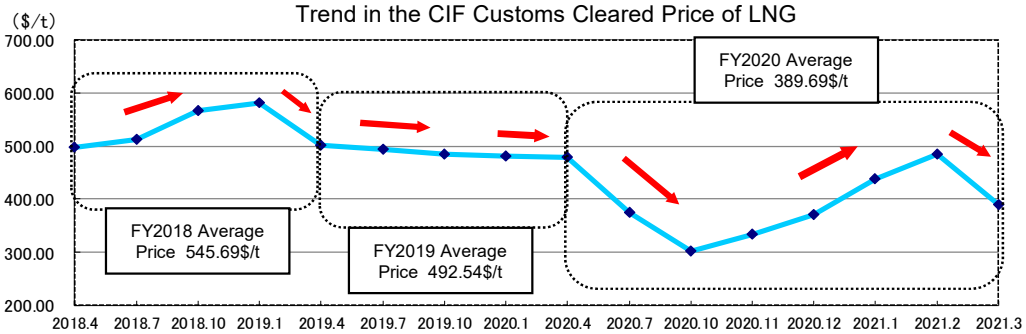
Stable procurement through long-term LNG purchase contracts

Efficient operation of coal-fired plants by reducing consumption of fuel oil and LNG

Achieving stable fuel supply and pursuing cost reductions







Q5. What are the efforts to fuel cost reduction?(2/2)

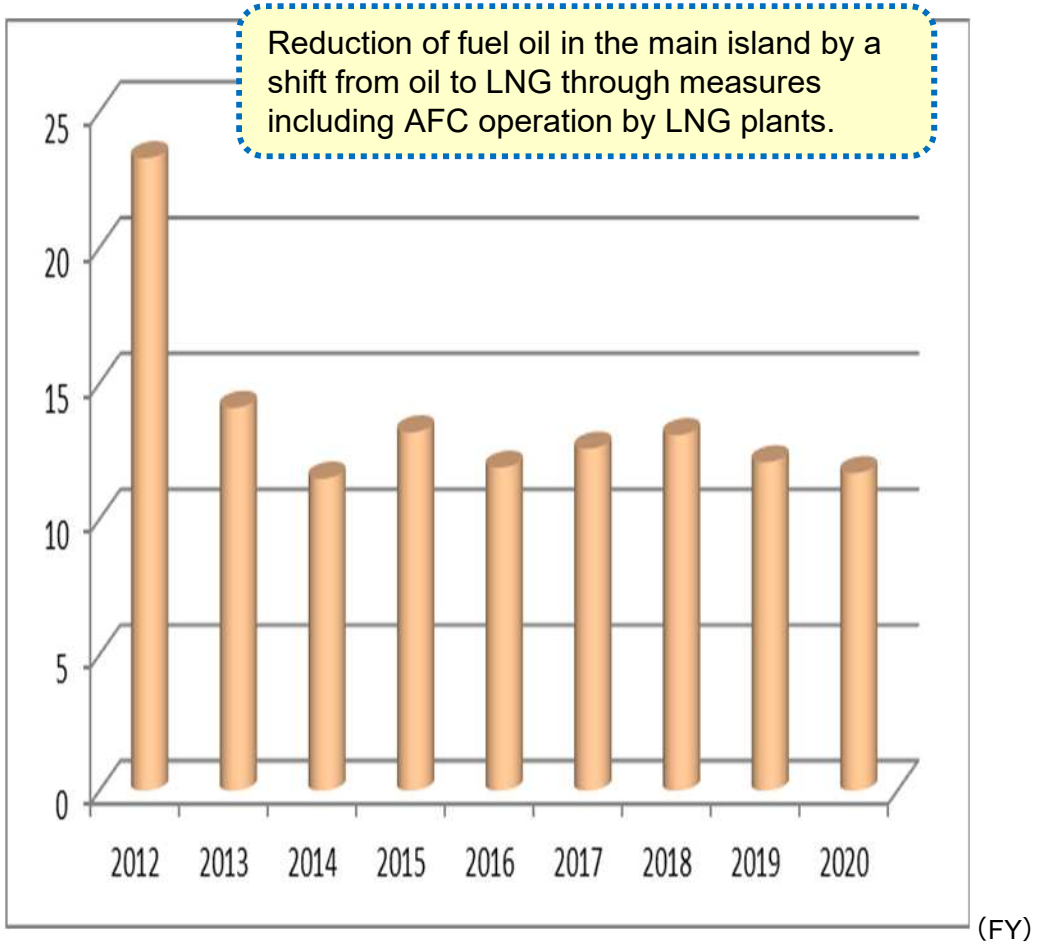
■ Efficient operation of coal-fired plants by reducing consumption of fuel oil and LNG.

* AFC=Automatic Frequency Control

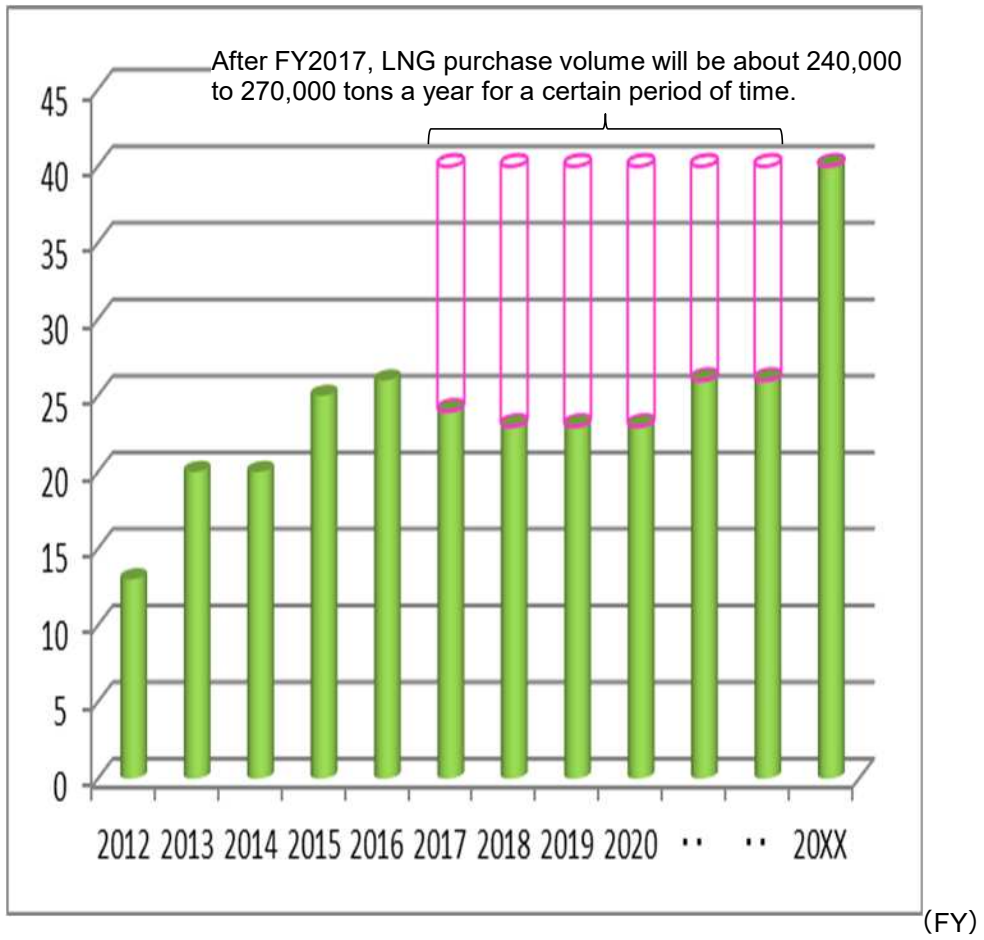
○ Reduction of oil consumption by shifting AFC* that oil-fired plants took charge of to LNG-fired plants.

○ A shift to coal-fired plants that have much lower power unit costs by reducing the volume of LNG.

Trend in Fuel Oil Consumption by Main Island



Trend in LNG Purchase Volumes



Q6. The Fuel Cost Adjustment System

■ The fuel cost adjustment system was introduced for the purpose of clarifying the “internal factors” such as the results of efforts to promote management efficiency at electric power companies and reflecting “external factors” onto electricity rates such as exchange rates and oil and coal and LNG prices that alter the economic situation.

[Range of fuel cost adjustment]

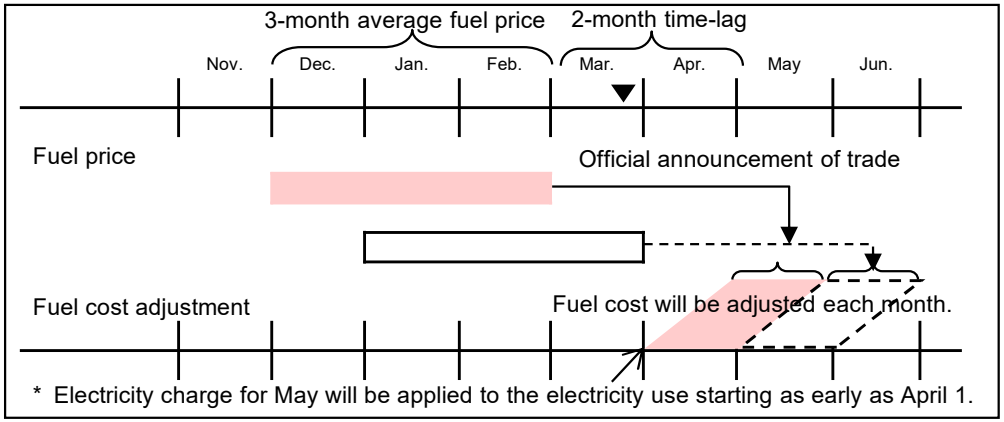
○We will calculate the average fuel price based on the prices of crude oil, coal and LNG on the trade statistics during the period between five months and three months prior to the fuel cost adjustment, and electricity charge will be automatically adjusted each month by comparing the above price with the standard fuel price at the time of electricity rate revision.

○The maximum level of fuel cost adjustment will be 50%.

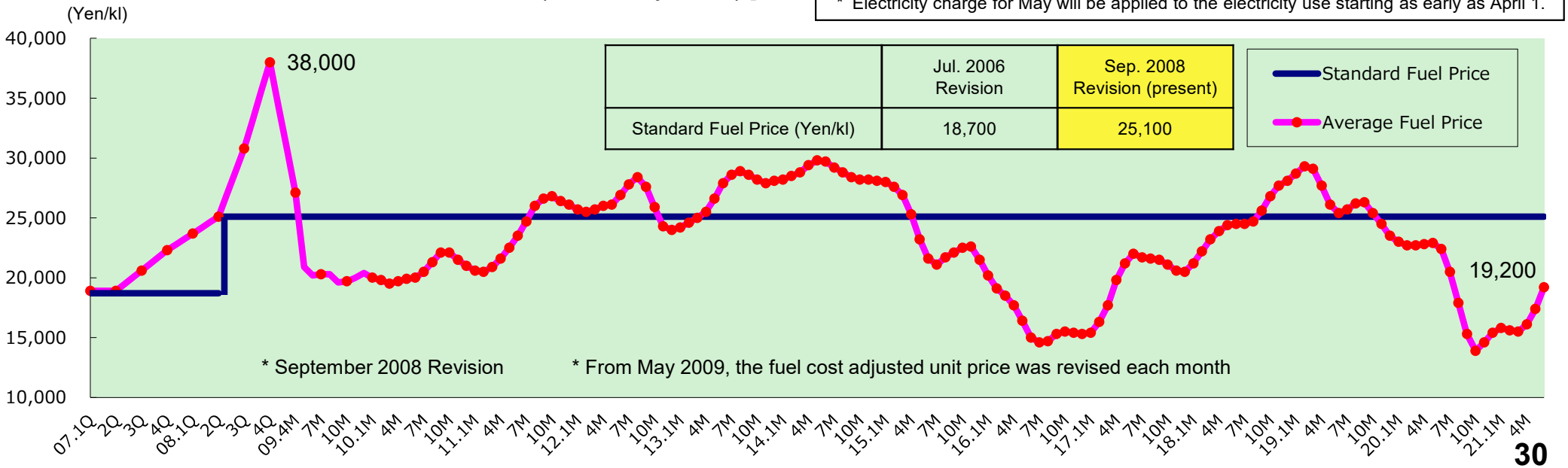
○There will be no lower adjustment limit.

[Conceptual drawing of the fuel cost adjustment system]

E.g. The average fuel price during the period between December and February of the following year will be applied to fuel cost adjustment for the electricity charge for May in the following year.
The average fuel price during the period between January and March will be applied to fuel cost adjustment for the electricity charge for June in the same year.



[Trend of Average Fuel Price and Standard Fuel Price (Since July 2006)]



Q7. What is the approval that it's possible to engage in electricity transmission and distribution on concurrent?

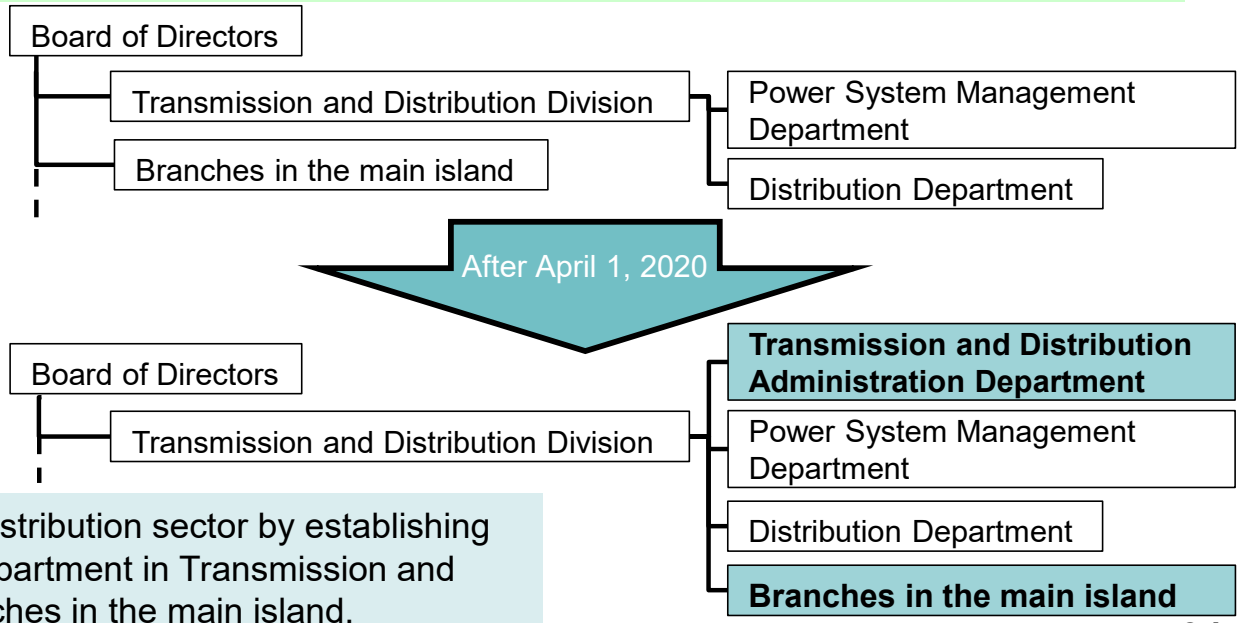
- After April 2020 when the amended Electricity Business Act comes into effect, the general electricity transmission and distribution utilities must not engage in electricity retail or electricity generation on concurrent business. (Restrictions on Concurrent Business)
- As an exception to the restriction on Concurrent Business, OEPC became the “the approved general electricity transmission and distribution utility” which can operate power retail business and power generation business, and this means that OEPC can continue maintaining the integrated system for power transmission and distribution.
- On the other hand, OEPC implemented the organizational revision to respond conduct regulations aimed at ensuring neutrality of the transmission/distribution sector.

Reasons for exceptions to Restriction on Concurrent Business

- ✓ There is a particularly high need for flexible power supply operation because OEPC's power grid is small-scale power system and independent from the mainland.
- ✓ There is a particularly high need for the transmission and distribution, retail and power generation divisions to work together in disaster response.

Conduct regulations

- ✓ Prohibition of use/provision of information for other purposes
- ✓ Prohibition of discriminatory treatment
- ✓ Prohibition of competitive inhibition acts
- ✓ Establishment of appropriate information management system, etc.



Further ensuring neutrality of the transmission/distribution sector by establishing Transmission and Distribution Administration Department in Transmission and Distribution Division, and transferring each branches in the main island.

Q8. What are the Special Tax Measures?

- We consider that special taxation measures are necessary for promoting business in Okinawa Prefecture and improving the lives of Okinawa residents on the grounds that disadvantages inherent in Okinawa's electricity business have remained unchanged. For example, there are many small and isolated systems and Okinawa is dependent on thermal power.
- The amount of tax exemption based on the special taxation measures is deducted from the cost of electricity charge.

Currently Applied Special Tax Measures

	Preferential Measure for Standard Taxable Values Relating to Fixed Property Tax	Exemption from the Oil and Coal Tax Relating to Specific Coal, etc. (Coal and LNG) Used for Power Generation in Okinawa
Details	Alleviation to 2/3 of Standard Taxable Values	(1) Exemption from the Oil and Coal Tax for coal (2) Exemption from the Oil and Coal Tax for LNG
Period	April 1, 1982 - March 31, 2022 * Extended for 2 years from April 1, 2020	(1) October 1, 2003 – March 31, 2022 * Extended for 2 years from April 1, 2020 (2) April 1, 2012 – March 31, 2022 * Extended for 2 years from April 1, 2020
Basic Law	Supplementary Provisions of the Local Tax Law (Article 15.5)	Special Measures Law for the Promotion of Okinawa (Article 65.2) Special Taxation Measures Law (Article 90.4.3.1)

Revision of the Act on the Special Measures for the Promotion and Development of Okinawa

- The Act on the Special Measures for the Promotion and Development of Okinawa was revised in March 2012, and the revised law came into effect on April 1, 2012.
- Under the revised law, etc., OEPC receives favorable treatment based on "Preferential Measure for Standard Taxable Values Relating to Fixed Property Tax" and "Exemption from the Oil and Coal Tax Relating to Specific Coal, etc. (Coal and LNG) Used for Power Generation in Okinawa".

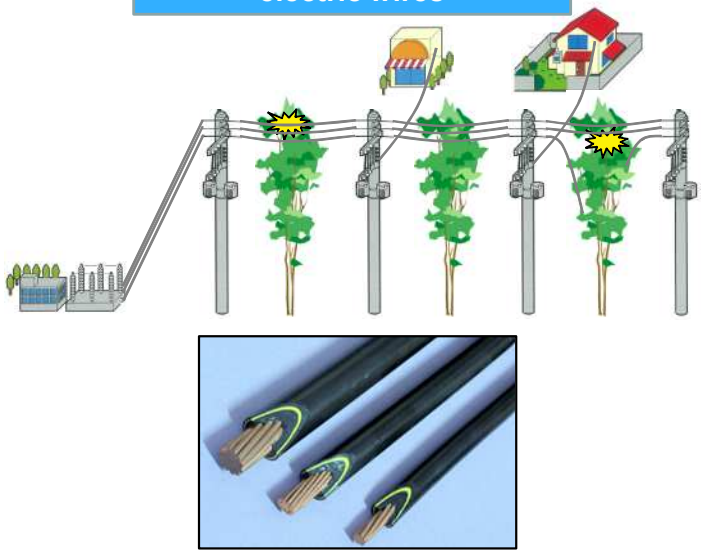
Value of Tax Alleviation Due to the Special Measures

- The value of the alleviation measures in FY2020 : about 3.4 billion yen.
- The value of the alleviation measures for FY2021 : expected to be 3.3 billion yen.

Q9. What are the efforts to typhoon measures?

- Since many typhoons approach Okinawa every year, the we are taking basic measures by thoroughly inspection patrol electricity transmission/distribution facilities and regularly cutting trees, and is also taking various other precautionary measures.
- After the Electric Power Resilience WG compiled the verification results concerning the power failure restoration and others, we have implemented new measures, such as maximizing the number of patrol personnel in the distribution division to quickly grasp the damage situation.

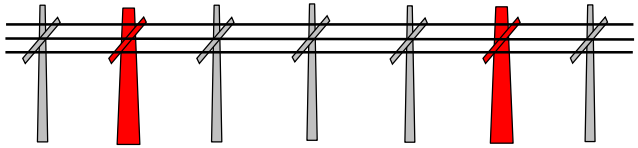
Replace to abrasion-resistant electric wires



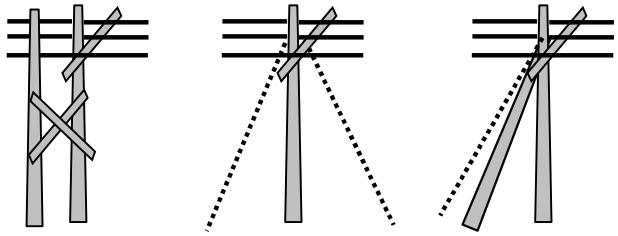
Abrasion-resistant electric wires

Abrasion-resistant electric wires resist to damage from trees contacting them and prevent disconnection caused by abrasion.

The measures to prevent the continuous collapse of utility poles



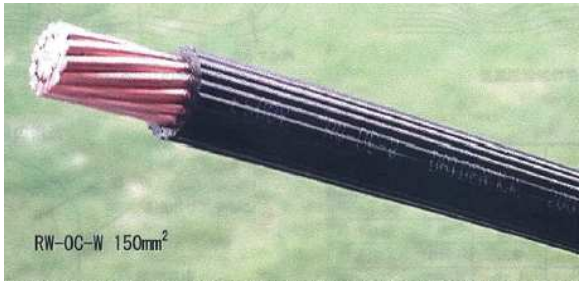
Utility poles to reinforce



Strengthened utility pole | Reinforcing wire | Reinforcing wire / pole

It's possible to prevent the continuous collapse of utility poles by reinforcing utility poles.

Use of electric wires to reduce wind pressure



Electric wire that reduces wind pressure

Reduce the wind pressure load by providing grooves on the surface of the electric wire.

Design standard for transmission towers

Transmission towers need to be designed to withstand a wind speed of up to 40 m/s based on the “Ministerial Order to Provide Technical Standards for Electrical Equipment (Ministry of Economy, Trade and Industry)”. However, we design transmission towers that can withstand a wind speed of up to 60 m/s in consideration of the maximum typhoon wind speed in the past.

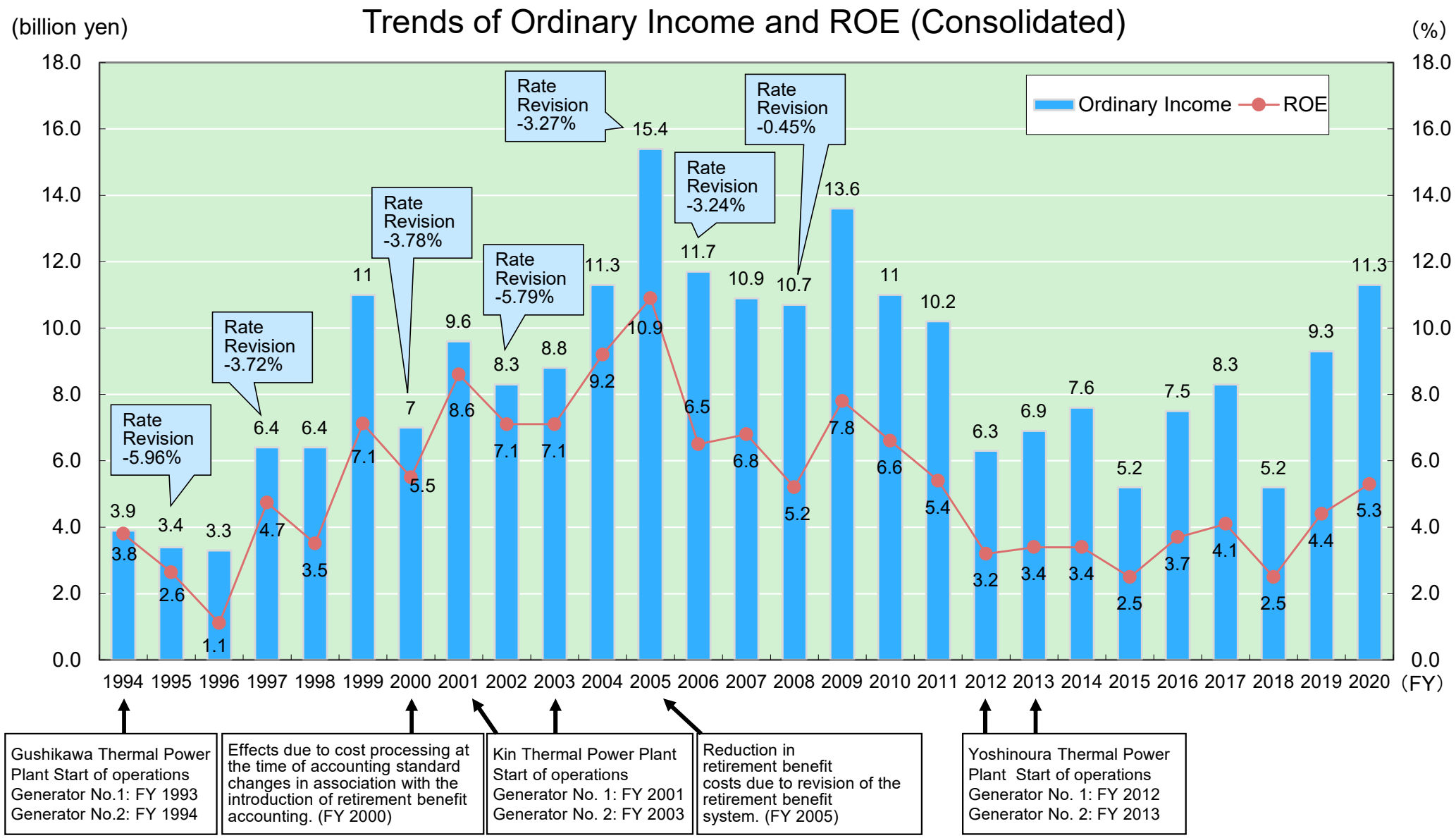
Maximizing the number of patrol personnel in power distribution department

We get the most out of the personnel in power distribution department and construction companies as patrol personnel in order to quickly grasp damages after pass typhoons. In addition, we utilize the personnel other than power distribution department as drivers.

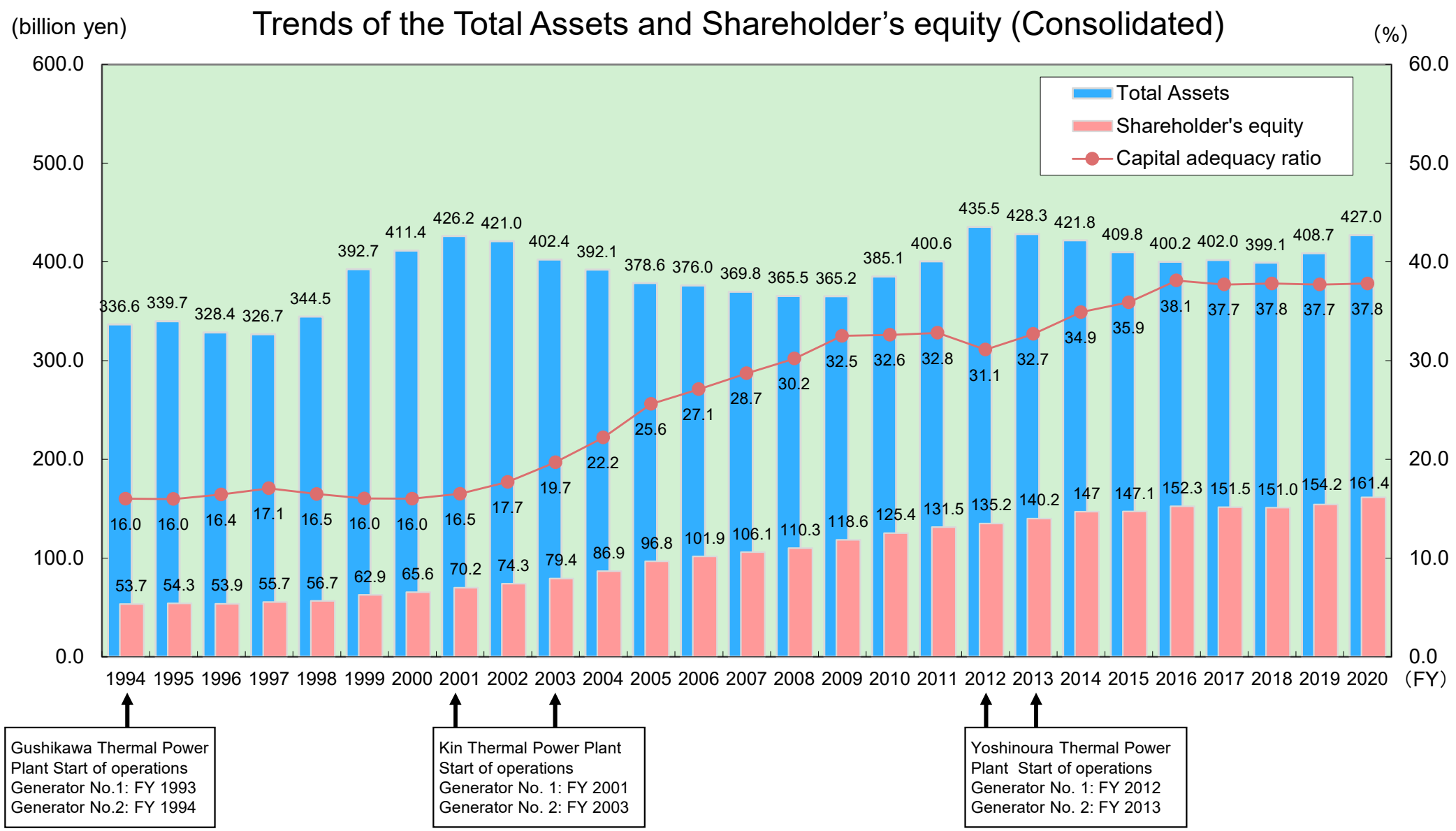
Public relations activities

We are making an effort to prevent the spread of damage by disseminating typhoon measures at home on TVCM, Radio, SNS before the typhoon approaches.
Moreover, we also disseminate information using the website and SNS among others on power outages, damages, the state of restoration works, and restoration prospects.

Reference 1:
Trends of Ordinary Income and ROE



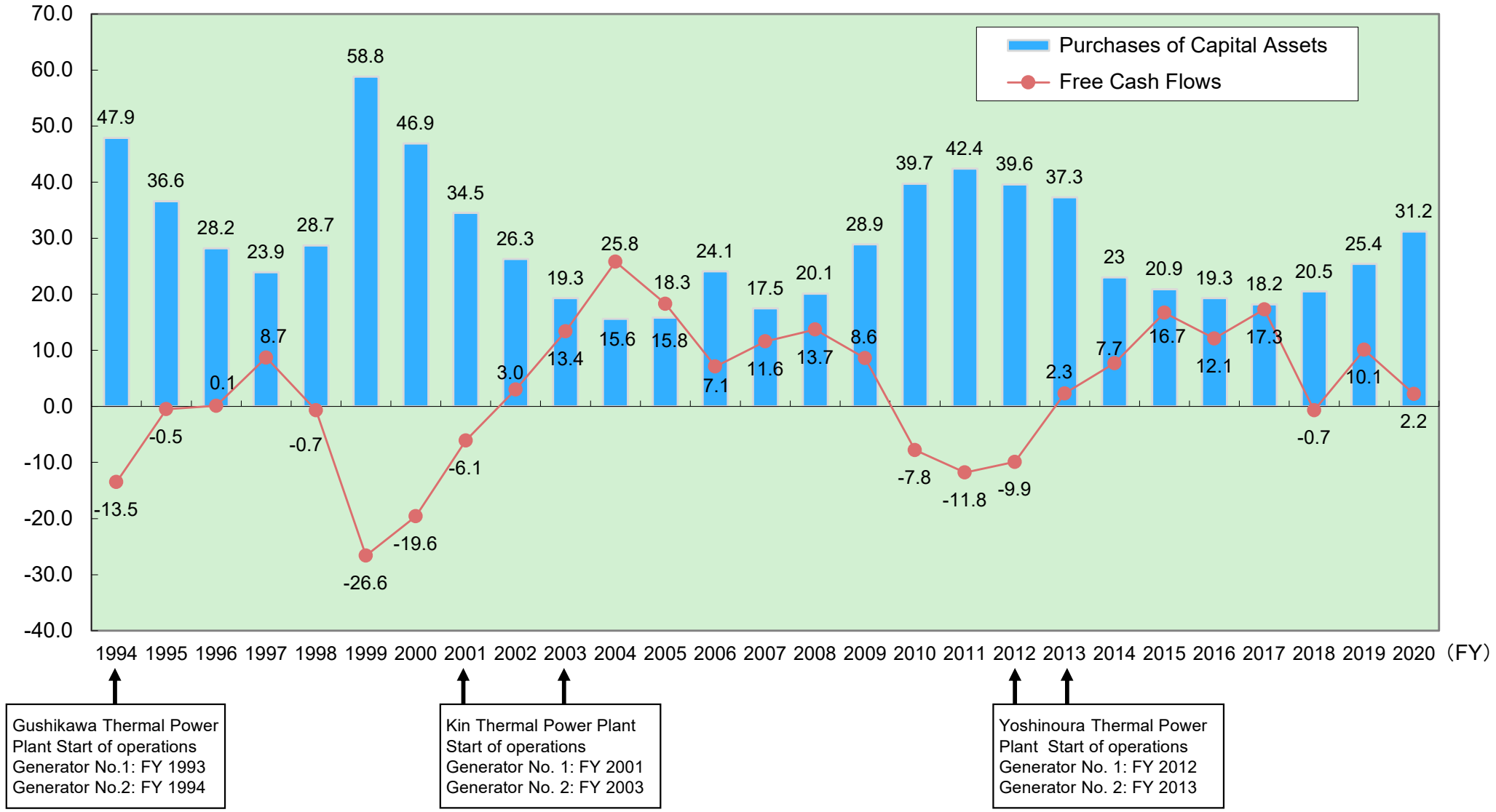
Reference 2:
Trends of the Total Assets and Shareholder's equity



Reference 3:
Trends of the Capital Expenditure and Free Cash Flows

(billion yen)

Trends of the Capital Expenditure and Free Cash Flows (Consolidated)



* Based on “Income and Expenditure Statement (Non-consolidated)” on and before 1998, and “Statement of Cash Flow (Consolidated)” on and after 1999, respectively.

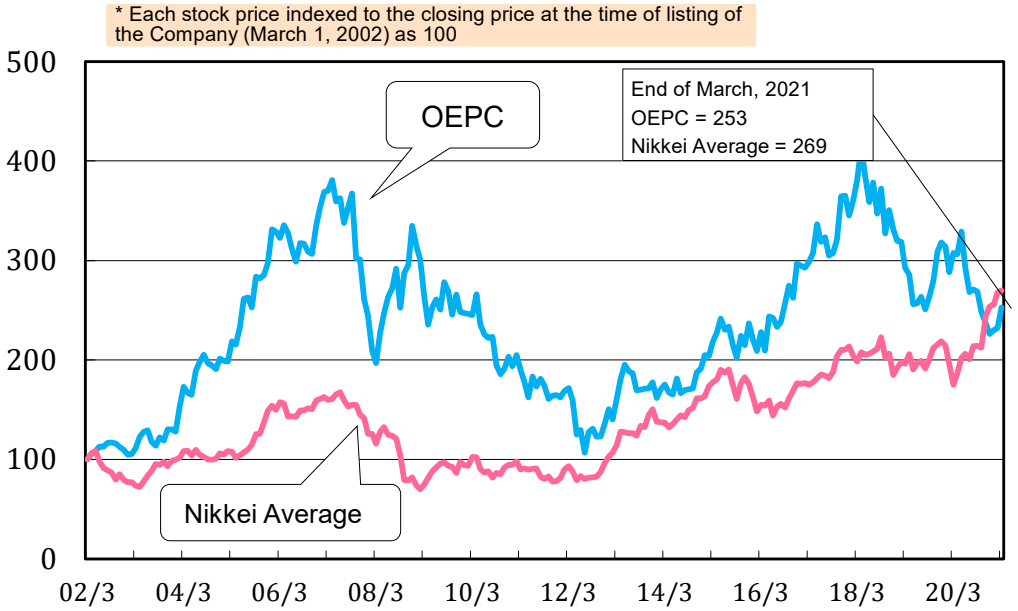
Reference 4:
Change in Okinawa Electric Power's Stock Price

Recent stock price changes: from January 6, 2020 to March 31, 2021

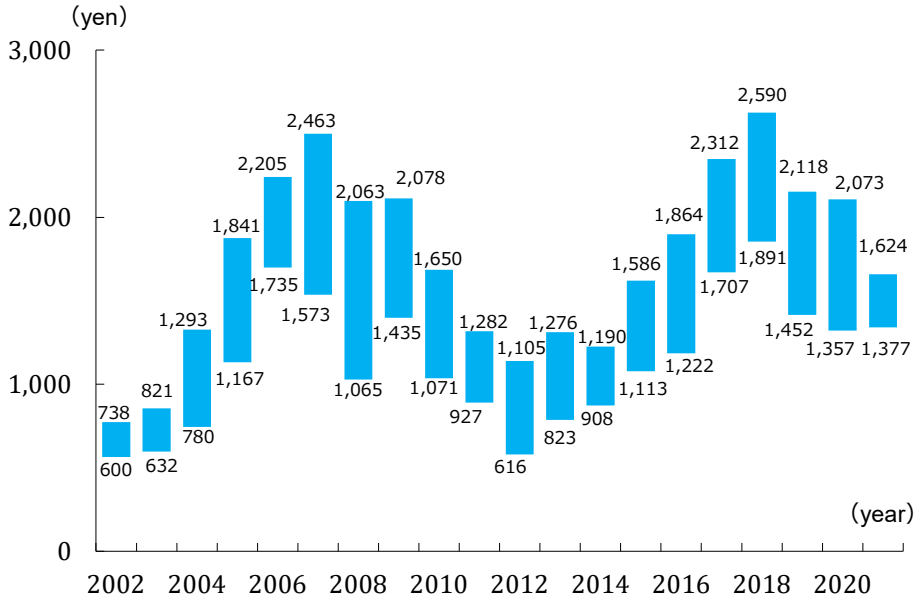
	Okinawa Electric Power Company, Inc.	Nikkei Average
Stock price as of January 6, 2020 (closing price)	1,917 yen	23,204 yen
All-time high (closing price)	2,031 yen (+6.0%) as of May. 12, 2020	30,467 yen (+31.3%) as of Feb. 16, 2021
All-time low (closing price)	1,365 yen (-28.8%) as of Dec. 22, 2020	16,552 yen (-28.7%) as of Mar. 19, 2020
Stock price as of March 31, 2021 (closing price)	1,551 yen (-19.1%)	29,178 yen (+25.7%)

(Note) The Company implemented a stock split of 1 to 1.05 effective June 1, 2020 and its stock price prior to May 31 has been adjusted accordingly.
Figures in bracket indicate percentage change in the stock price from its closing price on January 6, 2020.

Changes in the Stock Price of the Company and the Nikkei Stock Average (month-end closing price)



Changes in the Highest and Lowest Prices of the Stock of the Company



(Note) The stock split was implemented seven times in the indicated period (Record date :End of March 2005, End of March 2007, End of May 2015 ,End of May 2016, End of May 2017, End of May 2018 and End of May 2020), and adjustment has been made for the figures before the end of May 2020.

Reference 5:
Earnings Per Share and Payout Ratio

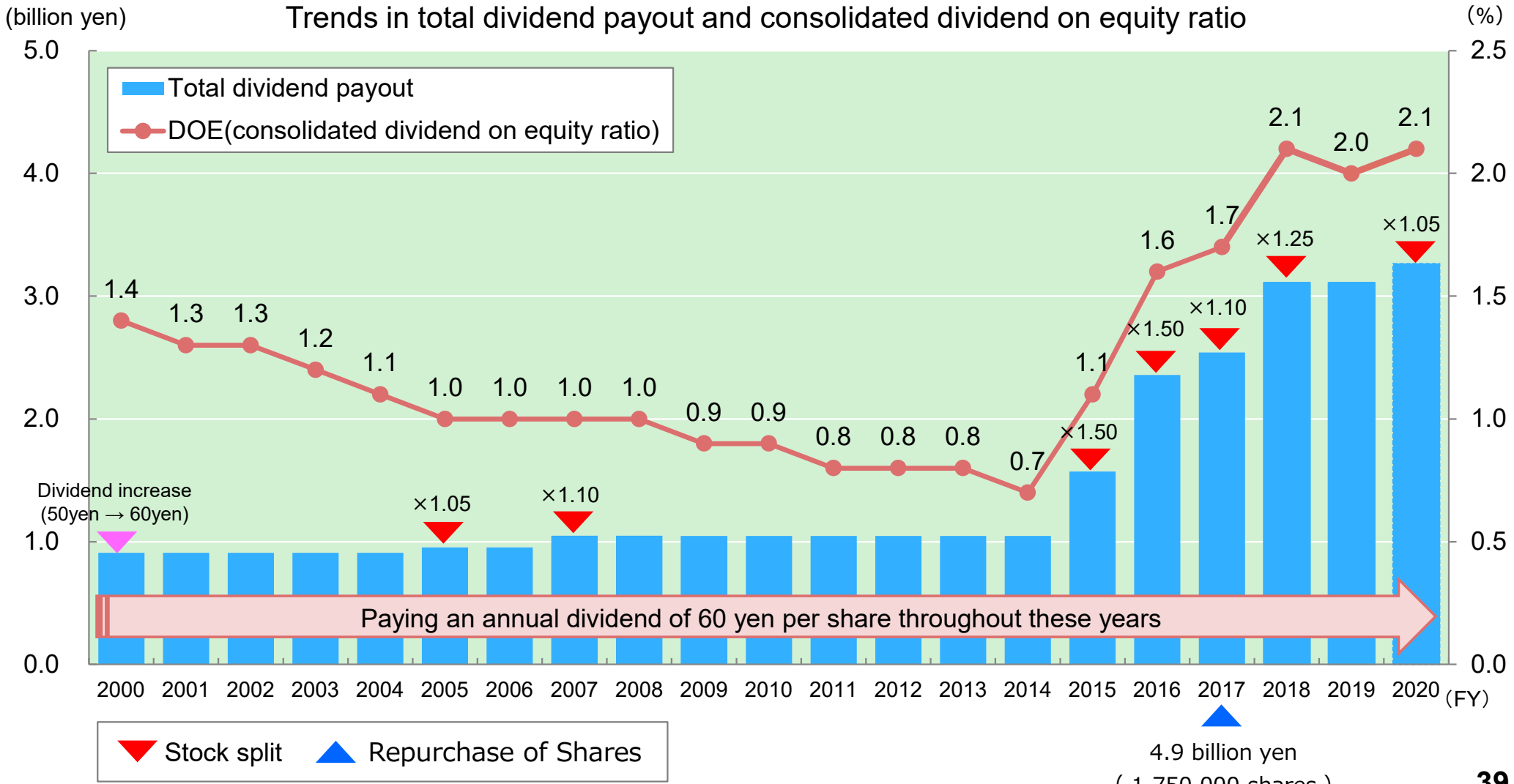
Earnings per Share and Payout Ratio

	FY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net income *1	Million yen	6,956	4,318	4,731	4,943	3,647	5,517	6,273	3,751	6,705	8,341
Earnings per Share *1	yen	398.15	247.20	270.80	282.99	139.22	140.41	147.00	72.38	129.39	153.29
(Post-adjustment after stock split) *2		(122.57)	(76.10)	(83.36)	(87.12)	(64.29)	(97.25)	(112.00)	(68.94)	(123.22)	
Dividend per Share	yen	60	60	60	60	60	60	60	60	60	60
(Post-adjustment after stock split) *2		(18)	(18)	(18)	(18)	(28)	(42)	(46)	(57)	(57)	
Payout Ratio *1	%	15.1	24.3	22.2	21.2	43.1	42.7	40.8	82.9	46.4	39.1
Dividend Yield	%	1.75	1.87	1.72	1.38	1.98	2.27	1.96	3.18	3.03	3.87
Price Book-value Ratio *1	x	0.45	0.41	0.44	0.52	0.54	0.68	0.84	0.65	0.67	0.52
Price Earning Ratio *1	x	8.6	13.0	12.9	15.4	21.8	18.8	20.8	26.0	15.3	10.1

*1 Net Income, EPS, Payout Ratio, PBR, PER are on a consolidated basis
*2 Shown in the brackets are numbers adjusted for the effects of past stock splits.

Reference 6:
Policy for Returning Profits to Shareholders

- Our basic policy is to “distribute stable and continuous dividends,” and we have continuously been distributing an annual dividend of 60 yen per share since 2000.
- We will make efforts to maintain “a DOE of over 2.0%,” which is our indicator.



This document includes statements concerning future results. Such statements are based on calculations and predictions and are neither definite nor guaranteed. Please be aware that future results may change in accordance with changes in assumptions related to the management environment and the like.

【Enquiries regarding this document】

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