

# **Management Reference Materials**

**November 2020**



The Okinawa Electric Power Company, Inc.

# Contents

## ■ Main contents

|  |       |
|--|-------|
| Characteristics of the Business Base   | 1     |
| [ Demand for Energy ]  |       |
| Okinawa Prefecture Demographics  | 2~3   |
| Number of incoming tourists  | 4~9   |
| Urban Development of the Returned former U.S. military base sites and Others | 10    |
| [ Competition ]  |       |
| Full liberalization of the Electricity Market                                | 11    |
| [ Total Energy Services ]  |       |
| Gas supply business  | 12    |
| Energy Service Provider (ESP) Business                                       | 13    |
| [ Electric Power Generation Facilities ]                                     |       |
| Power Supply Composition   | 14    |
| Yoshinoura LNG Thermal Power Plant   | 15    |
| Demand-Supply balance  | 16    |
| [ Remote Islands ]   |       |
| Efforts to Improve Income and Expenditure                                    | 17    |
| [ Measures against global warming ]  |       |
| Measures against global warming  | 18~20 |
| Introduction status of renewable energy Facilities                           | 21    |
| Challenges for the introduction of renewable energies                        | 22~24 |
| Efforts to expand the introduction of renewable energies                     | 25~27 |

## ■ Q&A contents

|  |       |
|--|-------|
| Q1.Topics of Okinawa's Economy   |       |
| 1) Current Status and Future Forecast of Okinawa's Economy   | 28    |
| 2) Economic Growth of Okinawa Prefecture under the Okinawa Promotion Plan  | 29    |
| 3) Okinawa International Logistics Hub   | 30    |
| 4) Aviation Industry Cluster   | 31    |
| Q2.What is the Current State of U.S. Military Bases?   | 32    |
| Q3.What is the Current State of Promotion of Electrification?  | 33    |
| Q4.What is the enrichment of electricity rate menus?   | 34    |
| Q5.What are the efforts to fuel cost reduction?  | 35~36 |
| Q6.Efforts to base on TCFD Recommendations   | 37    |
| Q7.The Fuel Cost Adjustment System   | 38    |
| Q8.What is the approval that it's possible to engage in electricity transmission and distribution on concurrent? | 39    |
| Q9.What are the Special Tax Measures?  | 40    |
| Q10.What are the efforts to typhoon measures?  | 41    |
| Reference 1:Trends of Ordinary Income and ROE  | 42    |
| Reference 2:Trends of the Total Assets and Shareholder's equity  | 43    |
| Reference 3:Trends of the Capital Expenditure and Free Cash Flows  | 44    |
| Reference 4:Change in Okinawa Electric Power's Stock Price   | 45    |
| Reference 5:Earnings Per Share and Payout Ratio  | 46    |
| Reference 6:Policy for Returning Profits to Shareholders   | 47    |

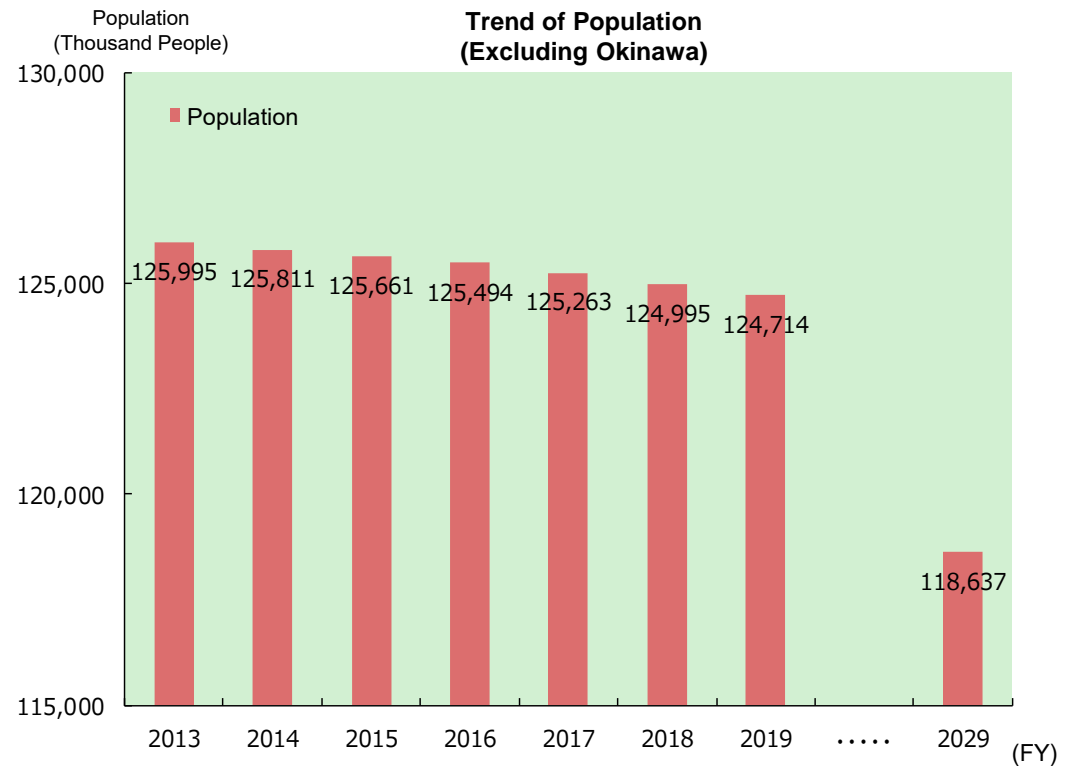
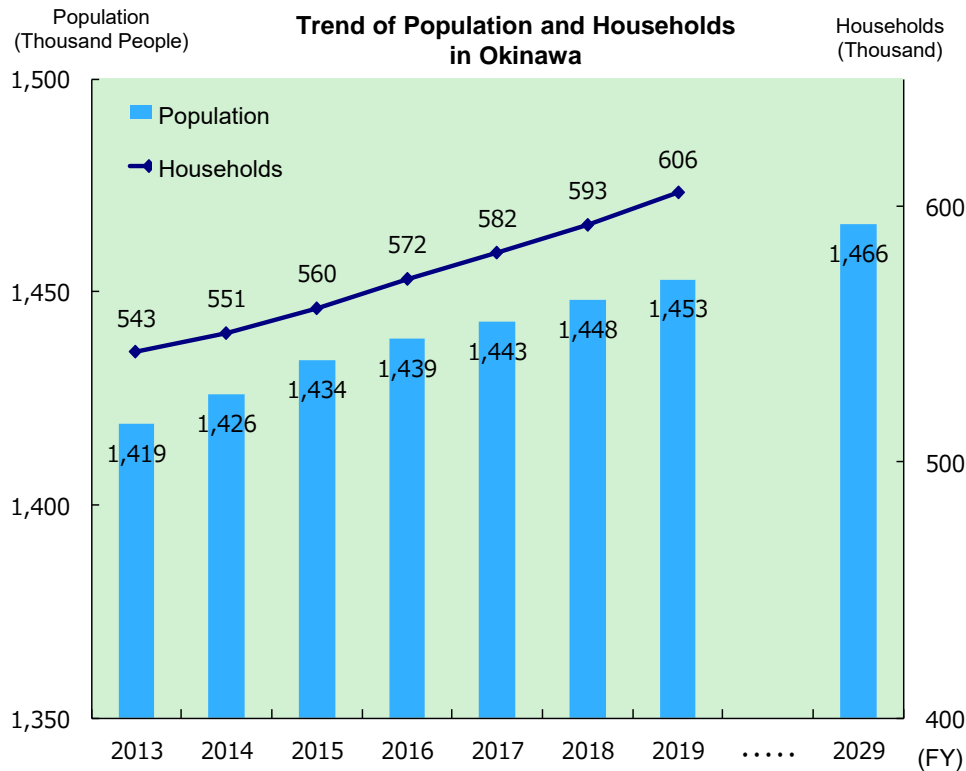
# Characteristics of the Business Bases

| Item                                 | Overview   | Reference Page |
|--------------------------------------|--|----------------|
| Demand for Energy                    | <ul style="list-style-type: none"> <li>◆ Increasing demand for energy due to population growth and increasing tourists.</li> <li>◆ As the proportion of energy for consumer use is high, effects of economic fluctuations are low for demand for Electric power.</li> <li>◆ Potential demand due to large-scale urban development projects</li> </ul>  | 2~10           |
| Competition                          | <ul style="list-style-type: none"> <li>◆ OEPC is outside the framework of wide-area power interchange because it has an isolated system.</li> <li>◆ OEPC has voluntarily released power of 10,000kW supplied by J-Power.</li> <li>◆ Competition is advancing due to the entry of energy suppliers.</li> <li>◆ Power producer and supplier is currently implementing plans to construct power plants.</li> </ul>  | 11             |
| Total Energy Services                | <ul style="list-style-type: none"> <li>◆ Started selling gas with the introduction of LNG.</li> <li>◆ Developing Total Energy Services by taking advantage of our ability to sell electricity and gas.</li> </ul>  | 12~13          |
| Electric Power Generation Facilities | <ul style="list-style-type: none"> <li>◆ Reliant on fossil fuels only due to difficulties to develop nuclear or hydraulic power generation</li> <li>◆ A sufficient supply capacity is secured after Yoshinoura Thermal Power Plant has started operations.</li> <li>◆ A high reserve supply capacity is required due to an isolated system</li> </ul>  | 14~16          |
| Remote Islands                       | <ul style="list-style-type: none"> <li>◆ OEPC supplies power to 11 isolated systems including those in the main island.</li> <li>◆ 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.</li> </ul>   | 17             |
| Measures against global warming      | <ul style="list-style-type: none"> <li>◆ Currently, possible measures are limited due to reasons including the region's geographic characteristics and constraints on the scale of demand.</li> <li>◆ The introduction of renewable energies contributes to reducing fuel consumption and cost on remote islands, where fuel unit price is high.</li> <li>◆ Since the systems of Okinawa area are small and independent, the limit of connection volume is likely to occur when using renewable energies.</li> </ul> | 18~27          |

# 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)"



Source:

Population: The actual figures are based on the data provided by the Ministry of Internal Affairs and Communications (MIC).

The figures for FY2029 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.

Source: The actual figures are based on the data provided by MIC.

The figures for FY2029 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 FY2019 decreased by -2.2 persons per 1,000 people, that of Okinawa increased by 3.9 people.

## Okinawa Prefecture Demographics

(People)

|   |            | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|------------|------|------|------|------|------|
| The total fertility rate<br>(Per Thousand people)           | Nationwide | 1.45 | 1.44 | 1.43 | 1.42 | 1.36 |
|   | Okinawa    | 1.96 | 1.95 | 1.94 | 1.89 | 1.82 |
|   | Ranking    | (1)  | (1)  | (1)  | (1)  | (1)  |
| The Increase of population<br>(Per Thousand people)         | Nationwide | -1.1 | -1.3 | -1.8 | -2.1 | -2.2 |
|   | Okinawa    | 5.6  | 4.0  | 2.6  | 3.1  | 3.9  |
|   | Ranking    | (2)  | (2)  | (3)  | (2)  | (2)  |
| The Natural Increase of population<br>(Per Thousand people) | Nationwide | -2.2 | -2.3 | -3.0 | -3.4 | -3.8 |
|   | Okinawa    | 3.9  | 3.8  | 2.9  | 2.6  | 2.0  |
|   | Ranking    | (1)  | (1)  | (1)  | (1)  | (1)  |
| The Social Increase of population<br>(Per Thousand people)  | Nationwide | 0.7  | 1.1  | 1.2  | 1.3  | 1.7  |
|   | Okinawa    | 0.8  | 0.2  | -0.3 | 0.5  | 1.9  |
|   | Ranking    | (7)  | (11) | (17) | (11) | (8)  |

Source: "Vital Statistics" by Ministry of Health, Labour and Welfare

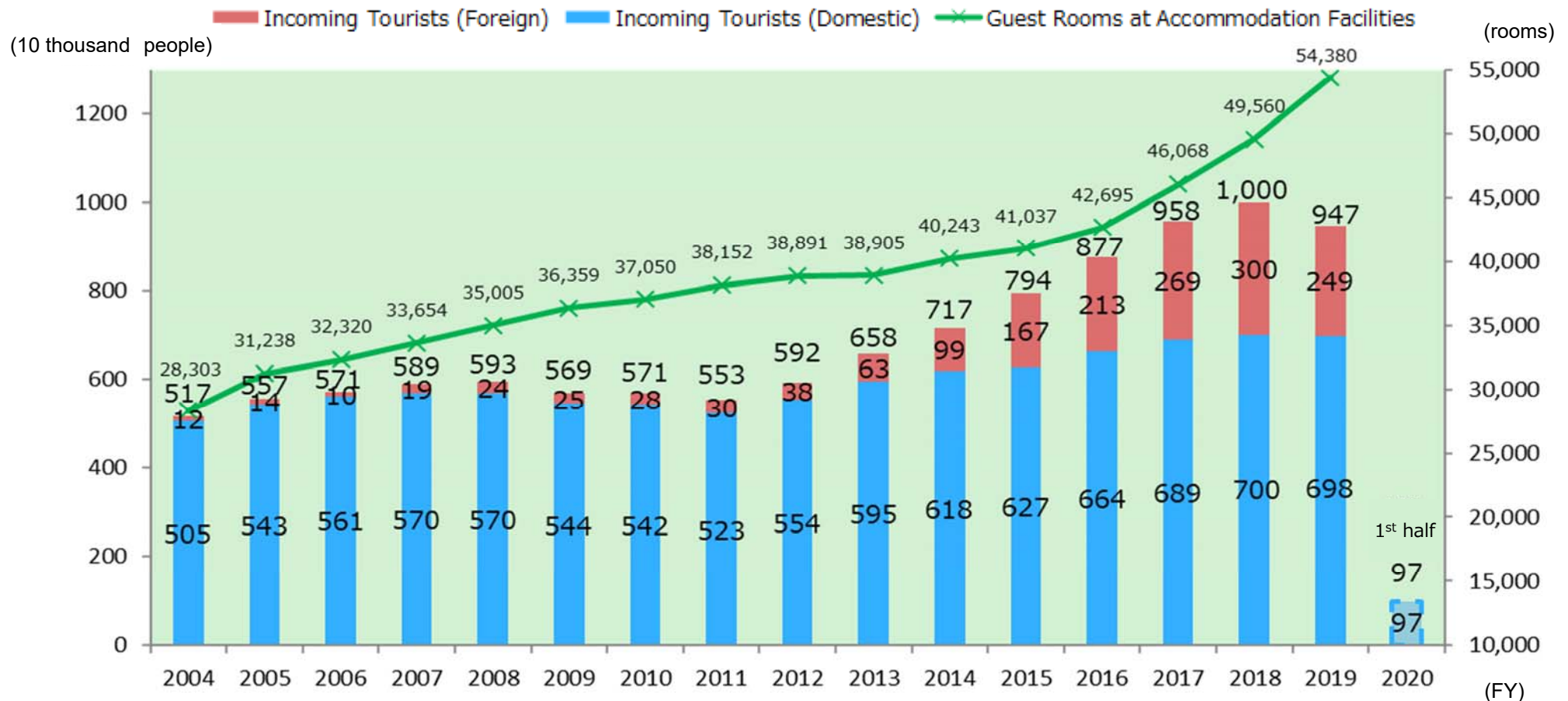
The figures in brackets in the chart show Okinawa Prefecture's national ranking

# Number of incoming tourists (1/6)

- In FY 2019, the number of incoming tourists was 9.47 million, it fell below the previous year for the first time in eight years.
- Currently, the spread of the novel coronavirus is still having an effect, and the future is unclear, but once it has been brought to an end, the number of tourists is expected to recover in the medium to long term.

[Incoming tourists] FY2019 : 9,470 thousand people (Growth rate of -5.3% year-on-year)  
 FY2020 [1<sup>st</sup> half] : 970 thousand people (Growth rate of -81.8% 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



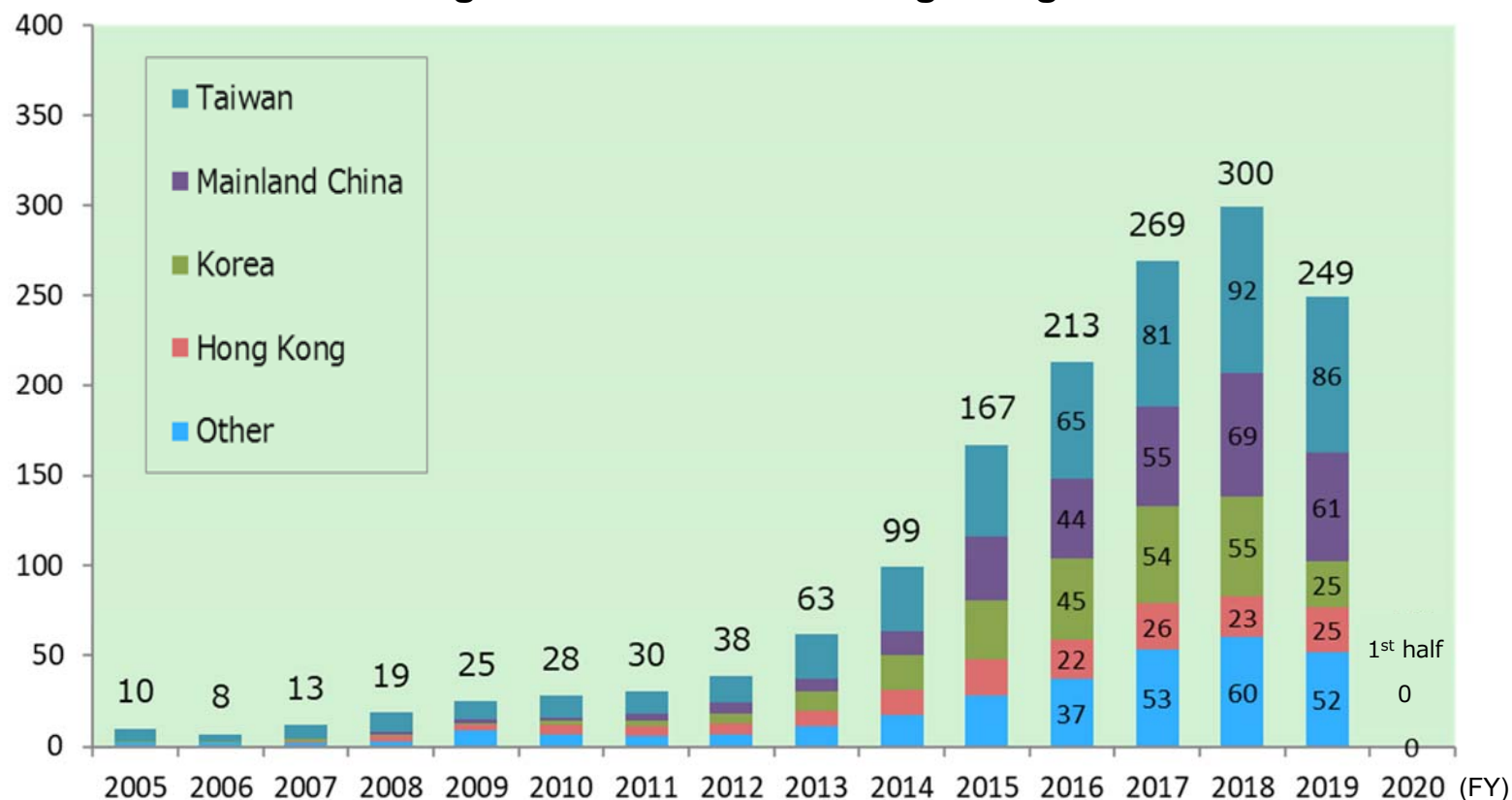
# Number of incoming tourists (2/6)

- Due to the spread of the novel coronavirus, number of incoming foreign tourists in FY2019 fell sharply from the previous year.
- Number of incoming foreign tourists in 1st half of FY2020 was no number due to reasons such as restrictions on entry into Japan after April.

[Incoming foreign tourists] FY2019 : 2.49 million people (Growth rate of -17.0% year-on-year)  
 FY2020 [1<sup>st</sup> half] : no number (Growth rate of -100.0% year-on-year)

(10 thousand people)

## Change in number of incoming foreign tourists



Note: The numbers between 2004 and 2008 are based on the calendar year, and those after 2009 are based on the fiscal year.

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

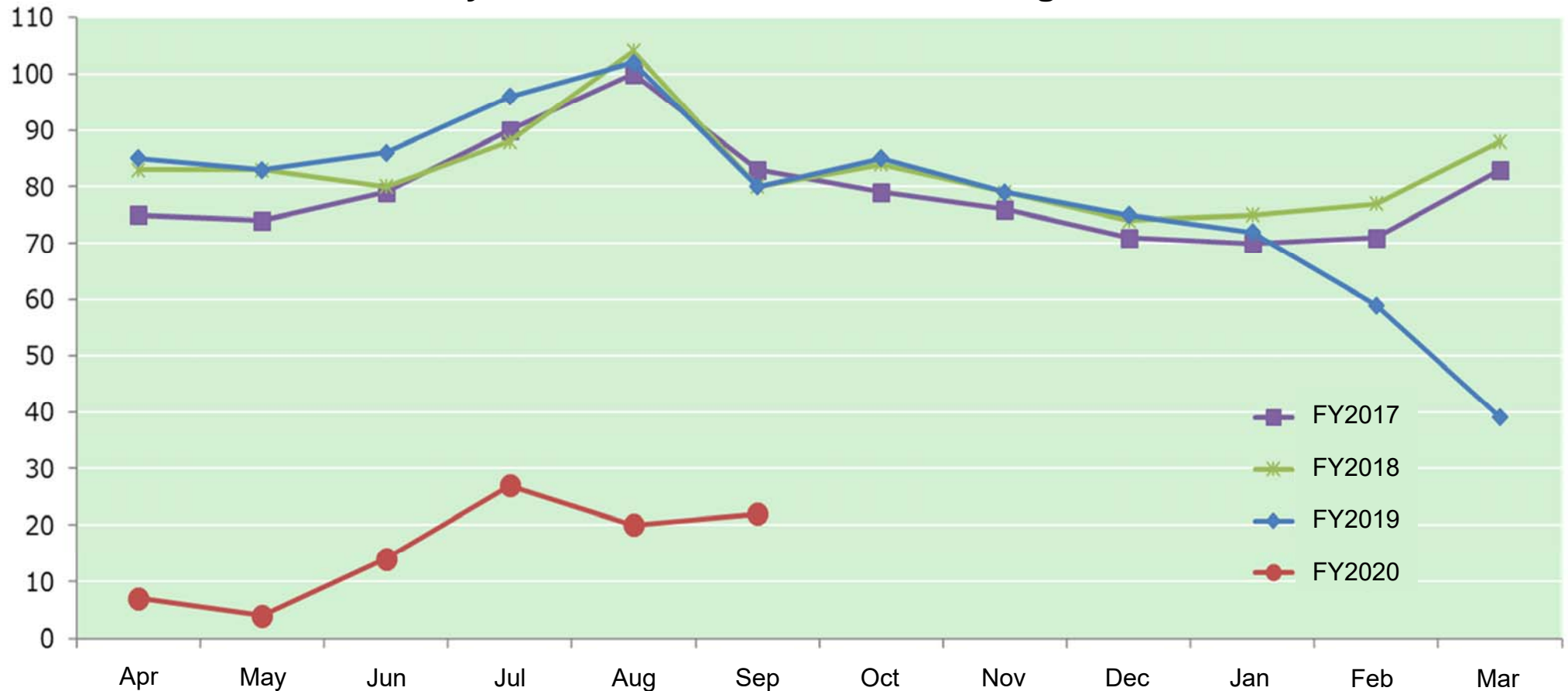
Source: "Tourism Guidebook" and "Summary Statistics on Incoming Tourists to Okinawa" published by Okinawa Prefectural Government

# Number of incoming tourists (3/6)

|                                      |                        |   |
|--------------------------------------|------------------------|---|
| ■ FY2018                             | : 10.00 million people | 【1 <sup>st</sup> half】: 5.20 million people |
| ■ FY2019                             | : 9.47 million people  | 【1 <sup>st</sup> half】: 5.35 million people |
| ■ FY2020 【Target】                    | : 3.70 million people  | 【1 <sup>st</sup> half】: 0.97 million people |
| (Growth rate of -81.8% year-on-year) |                        |   |

(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 (4/6)

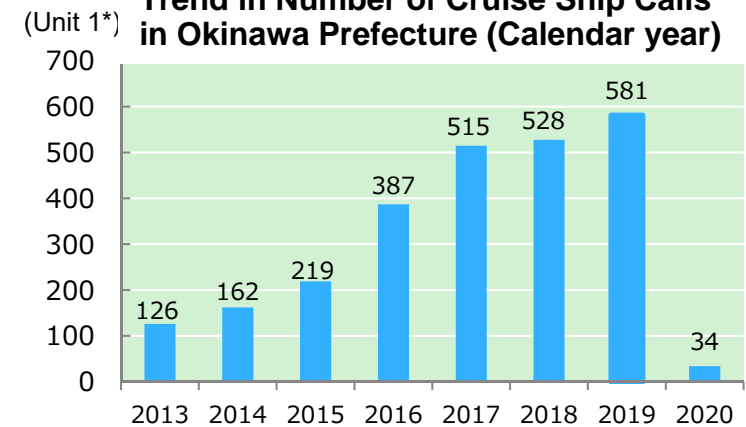
- The number of cruise ships calling at the port has been increasing, and marked a record high of 581 times (up 10%) in 2019 (calendar year) .
- The number between Jan and March 2020 has been reduced to 34 times (Growth rate of -70.7% year-on-year) due to spread of novel coronavirus.
- Aim to strengthen attraction and acceptance system by deploying new berth to ports within Okinawa Prefecture.

**Scene of 3 ships calling at Naha Port at the same time (July 28, 2015)**



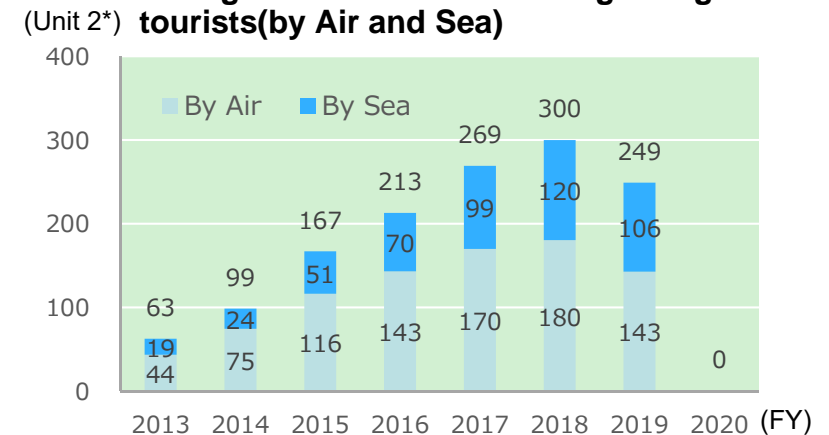
Provided by Naha Port Authority

**Trend in Number of Cruise Ship Calls in Okinawa Prefecture (Calendar year)**



Source: Okinawa General Bureau

**Change in number of incoming foreign tourists (by Air and Sea)**



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

(Unit 1\* : times , Unit 2\* : 10 thousand people)

# Number of incoming tourists (5/6)

- A second runway at Naha Airport started operation on March 26, 2020. Annual departure and arrival capacity has expanded 1.8 times as much as before.

Operation start: March 26, 2020

Departure and arrival capacity: about 135,000 times a year → about 240,000 times a year  
(an annual increase of 105,000 times)

\*excluding helicopters and midnight flights

Reclaimed land area: about 160 ha

Total construction cost: about 207.4 billion yen



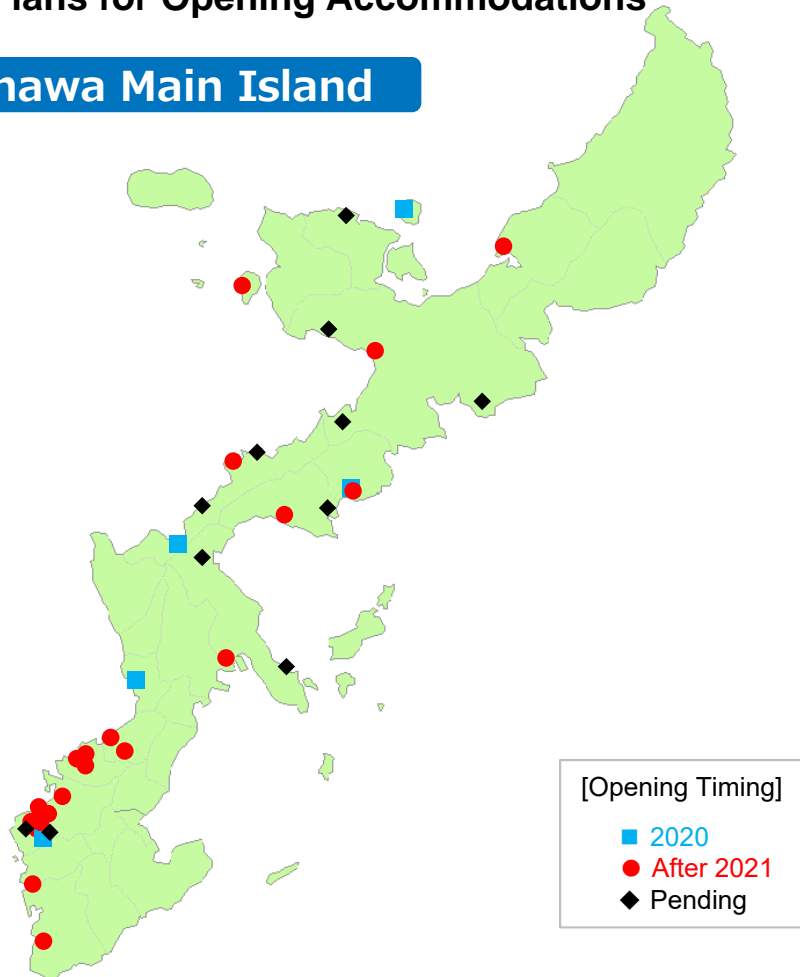
Source : Provided by Okinawa General Bureau ( It was taken on September 2019 )

# Number of incoming tourists (6/6)

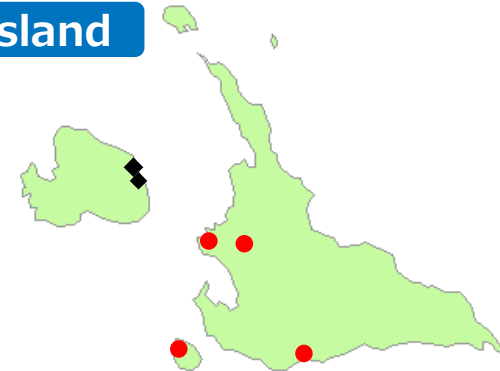
- Accompanying an increase in tourists visiting the region, the numbers of accommodation facilities and guest rooms have kept increasing in Okinawa Prefecture.
- Going forward, multiple accommodation facilities are planned to open.

## Major Plans for Opening Accommodations

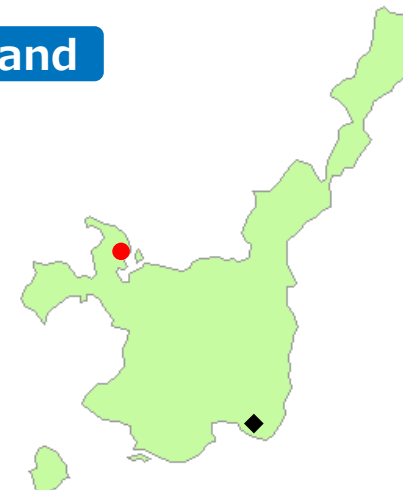
### Okinawa Main Island



### Miyako Island



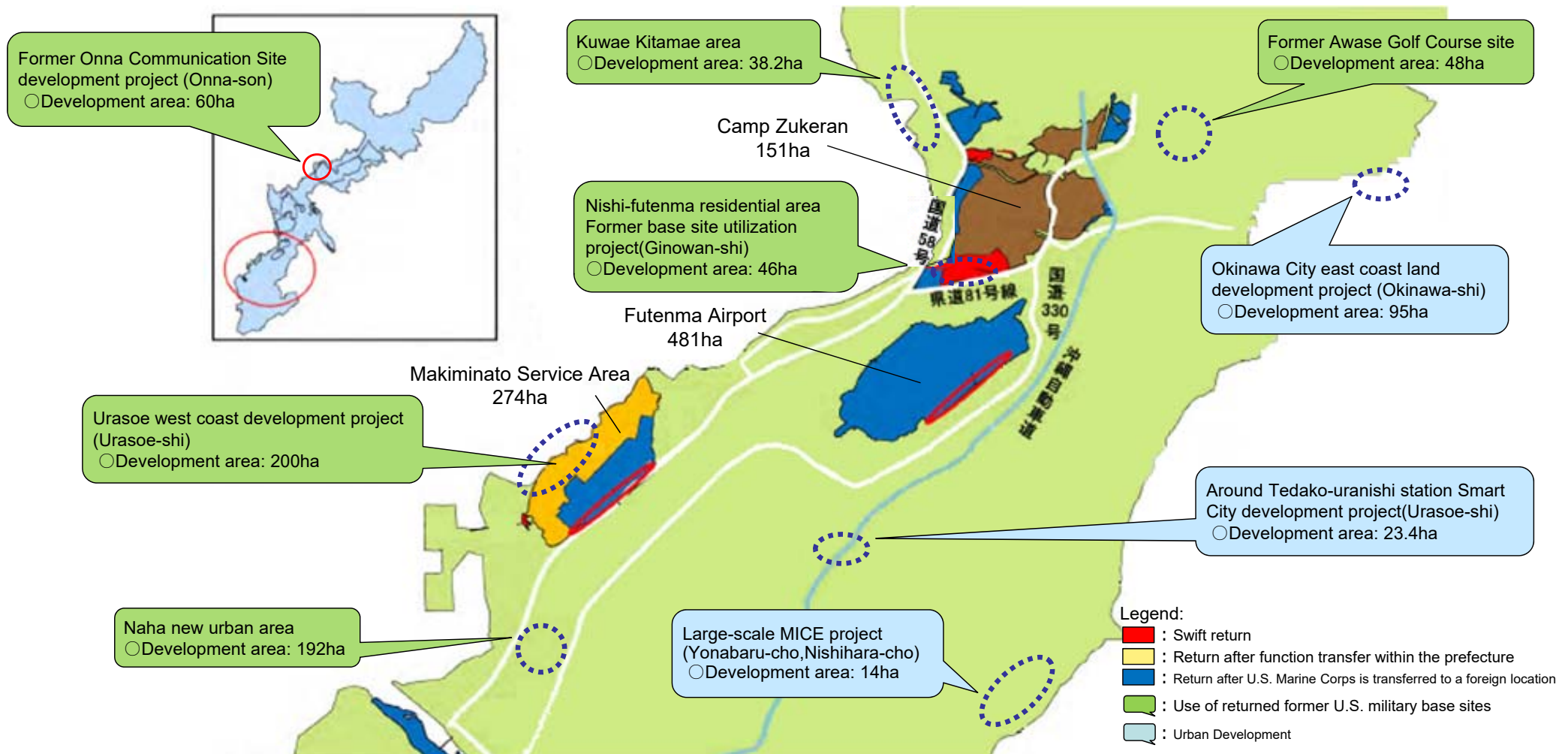
### Ishigaki Island





# 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.

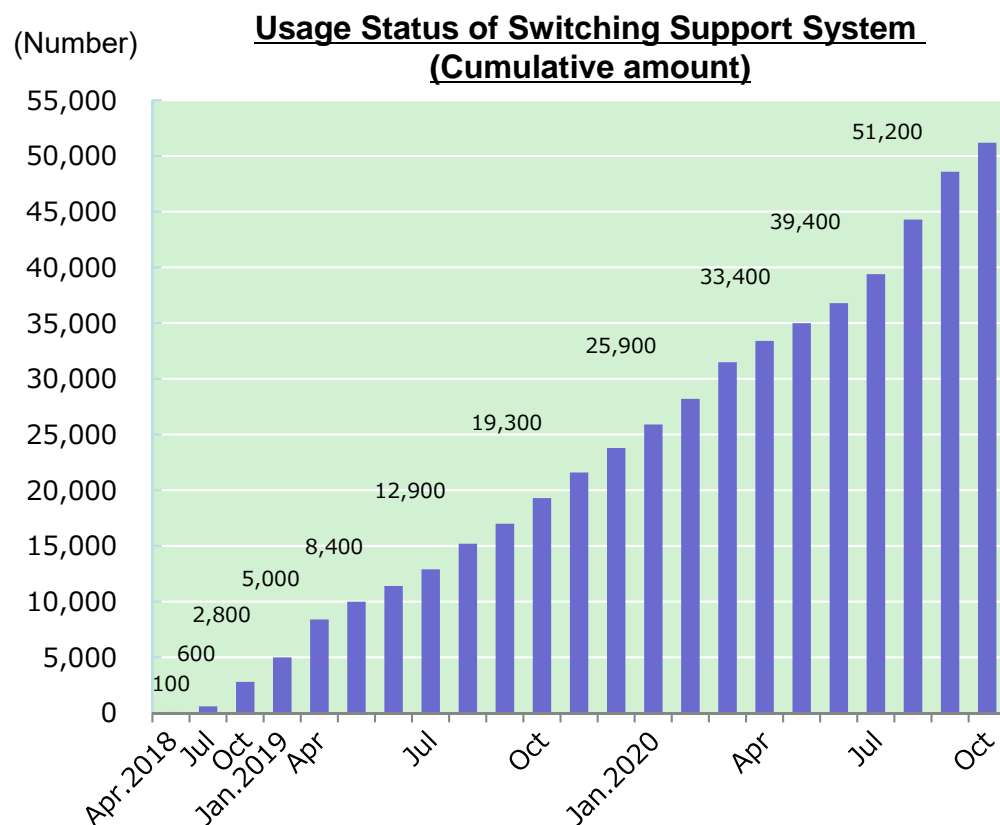


\* Source: The material of the Okinawa Revitalization Council Chair and Specialized Committee Meeting (third session) presented on the Cabinet Office website, and Survey of Consideration of Ripple Economic Effects from Utilization of Former U.S. Forces Sites posted on the Okinawa Prefectural Government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

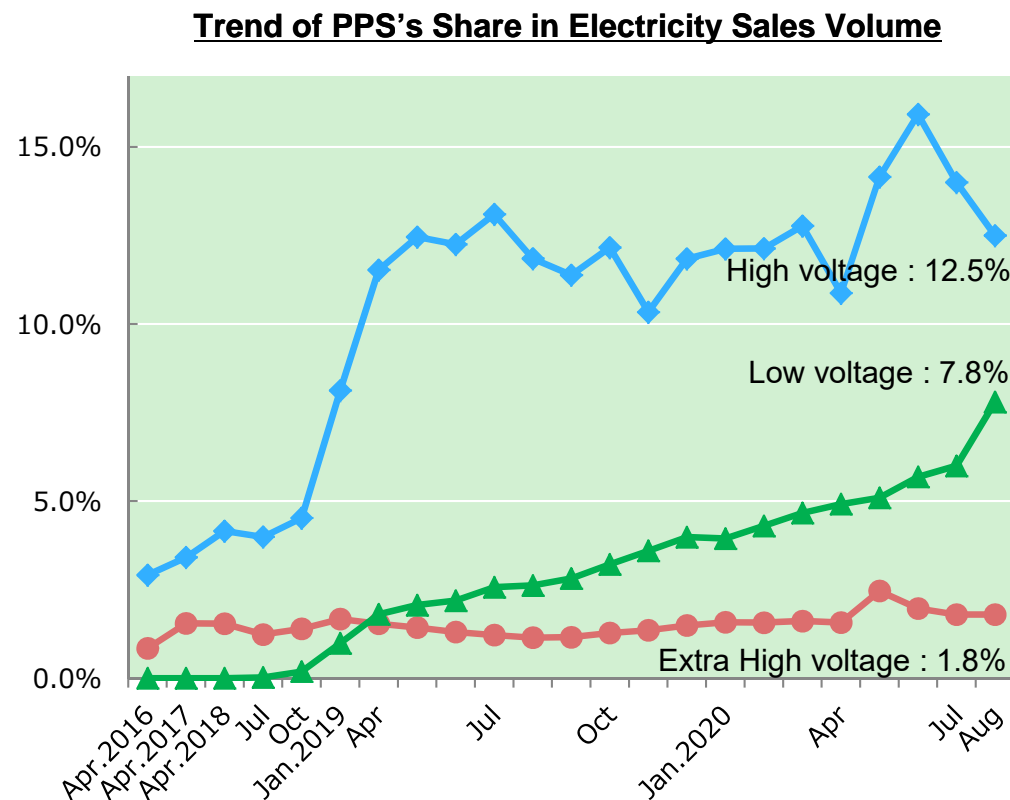
# Full liberalization of the Electricity Market

- 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 8.3% in the total of all voltages (as of August 2020).

\* new suppliers, officially called power producer and suppliers



Source : "Usage Status of Switching Support System".



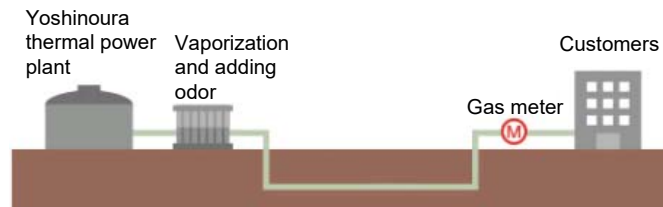
Source : "Electricity Trading Report".

# Gas supply business

- Commenced gas supply business in 2015.
- The OEPC Group will expand to supply to broad areas through pipelines, based on PEC's\*<sup>1</sup> satellite facilities.

## 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).



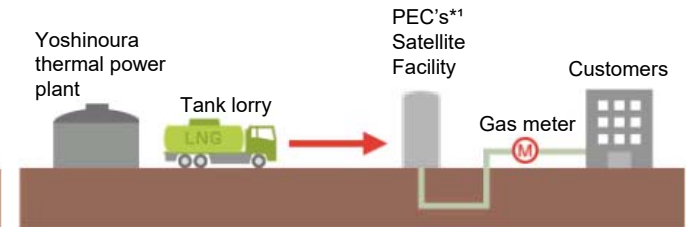
## Lorry supply (9 cases)

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



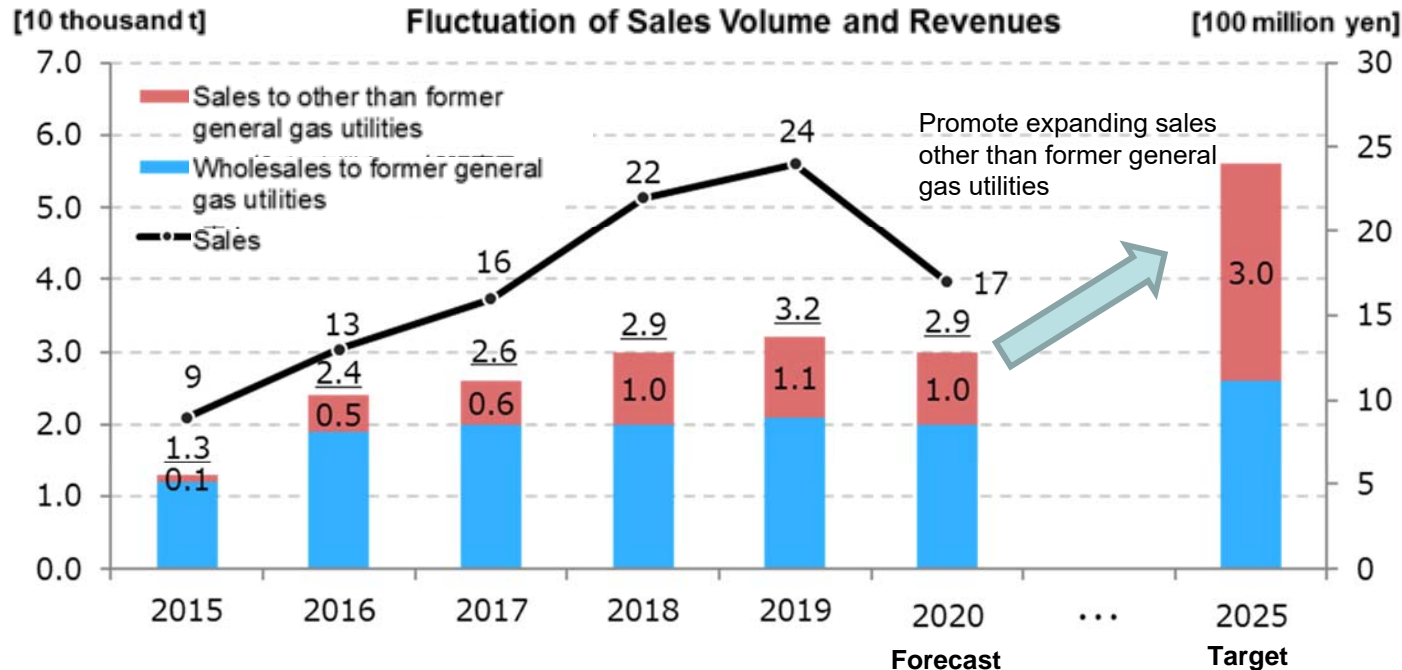
## PEC Supply Center (7 cases)

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



\*1: Progressive Energy Corp.

\*2: Awase Natural Gas Supply Center, Suzuki 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

\*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]

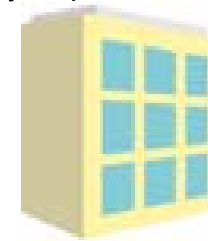
- Large-scale development of urban areas (e.g. former U.S. military bases)
- Construction of hotels in response to an increase in the number of tourists
- Construction of large-scale retail stores

Okinawa  
Prefecture



[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



Customer



**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

**Yuuai Kai Yuuai Medical Center**

- Service launch date: May 2020

**San-A Ishikawa City**

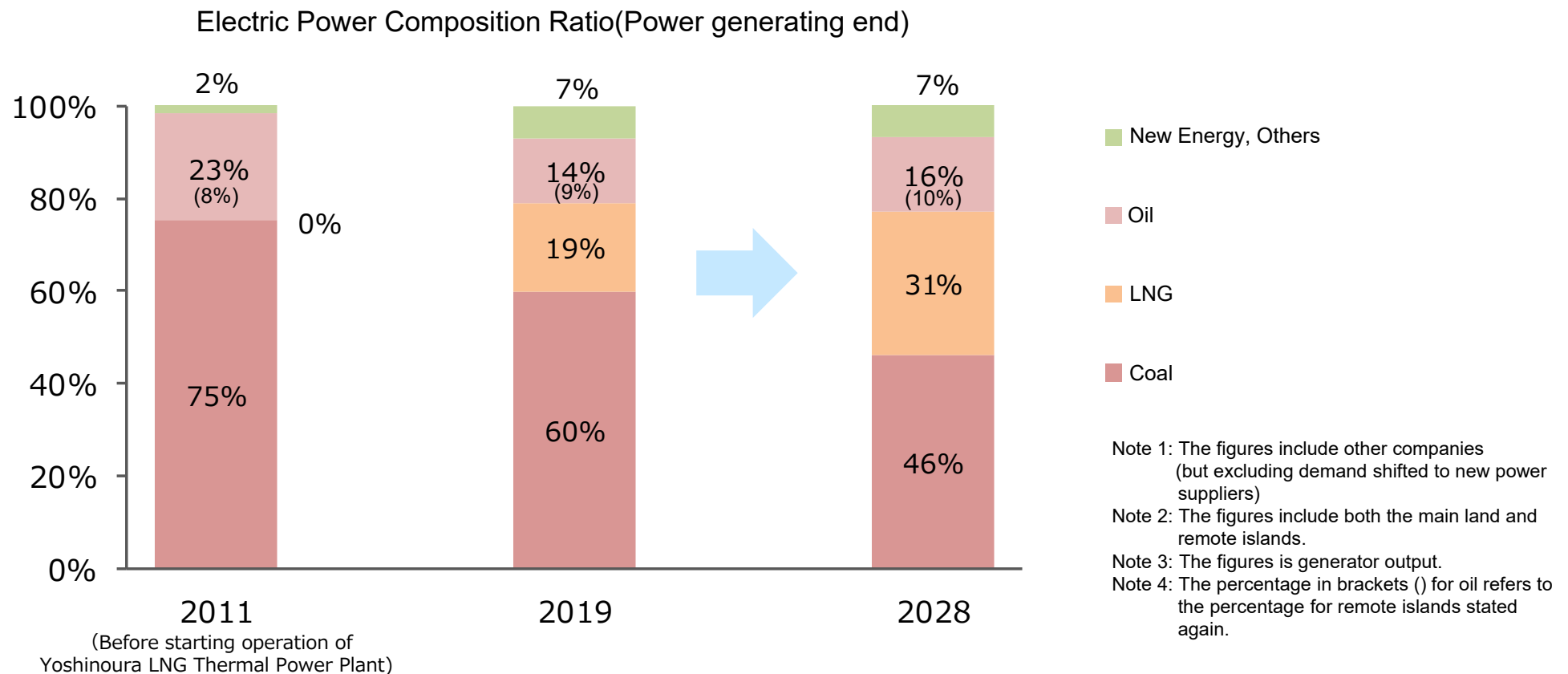
- Service launch date: August 2020

# 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 Generation Facilities (Yoshinoura LNG Thermal Power Plant)

- Yoshinoura Thermal Power Plant was constructed as OEPC first LNG thermal power plant from the viewpoints of securing stable supply of electricity, increasing energy security, environmental measures and venturing into gas-related business.
- Yoshinoura Multi Gas Turbine Power Plant was constructed mainly for the purposes of starting power grids in case that the entire main island of Okinawa loses all electricity sources, dealing with the electricity peak of normal time.

## [Outline of the Power Plant]

| Name                          | Yoshinoura Thermal Power Plant  | Yoshinoura Multi-Gas Turbine Power Plant              |
|-------------------------------|---|---|
| Location                      | Nakagusuku-son, Okinawa Prefecture  |   |
| Power generation capacity     | 251,000kW×2 power generators  | 35,000 kW × 1 plant                                   |
| Fuel                          | Liquefied natural gas (LNG)   | LNG, kerosene<br>(The normal fuel to be used is LNG.) |
| Storage facilities            | 140,000kl × 2 stations  |   |
| Start of commercial operation | Generator No.1:November 27, 2012<br>Generator No.2:May 23, 2013   | March 20, 2015  |
| Fuel procurement              | Contractor: Osaka Gas Co., Ltd.<br>Contract period: 27 years from FY2012 (main source of supply: Gorgon in Australia)<br>Contracted quantity: About 400,000 t/year<br>Terms of delivery: Delivery on ship's arrival (EX-Ship) |   |



# 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, %)

|                          |                         | 2019<br>(Reference) | 2020  | 2021  | 2022  | 2023  | 2024  | 2025  | 2026  | 2027  | 2028  | 2029  |
|--------------------------|-------------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Demand-supply<br>balance | Supply capacity         | 2,217               | 2,002 | 2,268 | 2,133 | 2,277 | 2,324 | 2,273 | 2,274 | 2,278 | 2,282 | 2,286 |
|                          | Peak load               | 1,500               | 1,500 | 1,510 | 1,521 | 1,529 | 1,538 | 1,547 | 1,555 | 1,564 | 1,572 | 1,581 |
|                          | Reserve supply capacity | 717                 | 502   | 758   | 612   | 748   | 786   | 726   | 719   | 714   | 710   | 705   |
|                          | Reserve supply rate     | 47.8%               | 33.5% | 50.2% | 40.2% | 48.9% | 51.1% | 46.9% | 46.2% | 45.7% | 45.2% | 44.6% |

Note: Based on FY2020 Supply Plan Notification. (general transmission / distribution business)

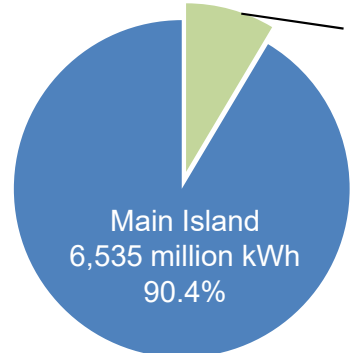
# Remote Islands

## (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.

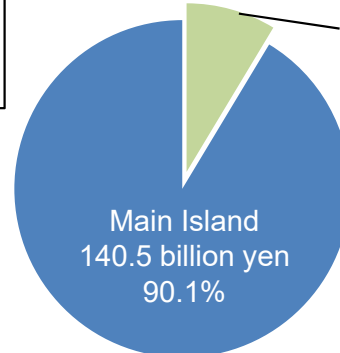


Electricity Sales Volume  
(FY2020 estimate)  
(Total : 7,226 million kWh)



Remote Islands  
691 million kWh  
(9.6%)

Electricity Sales  
(FY2020 estimate)  
(Total : 155.8 billion yen)



Remote Islands  
15.4 billion yen  
(9.9%)

(Efforts to improve remote island income and expenditure)

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



# Measures against global warming (1/3)

## 1 Peculiarities of the Okinawa area, and thoughts on measures against global Warming

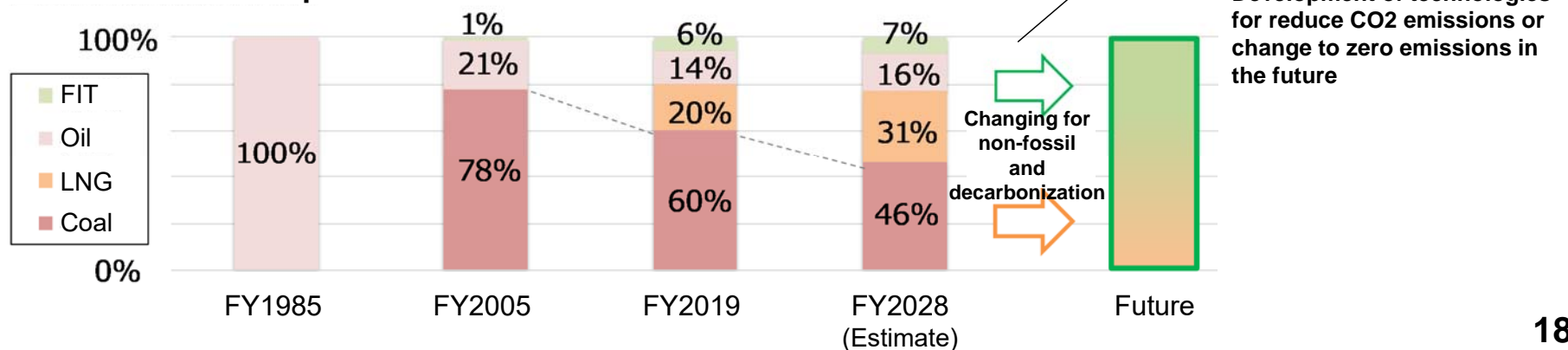
- Currently, thermal power generation has to become the main source because it is difficult to develop nuclear or hydraulic power generation due to the region's geographic characteristics and constraints on the scale of demand in Okinawa.
- Considering its history that electricity charges rose sharply and liabilities exceeded assets at the time of the oil crisis due to its total dependence on oil for its fuel. Therefore, we have been developing power sources while searching for an electric power source mix that will not be affected by the oil situation. By introducing coal and LNG, we have established a system to secure a stable and economical energy supply.
- It is difficult to introduce large-scale generators of the 600 thousand kW scale as in the mainland because the electric power demand in Okinawa is approx. 600 thousand to 1,500 thousand kW (1% of the mainland), while it is necessary to generate power by dispersing power generation among multiple generators from the viewpoint of avoiding large-scale blackouts in the event of facility troubles and so on.
- For its thermal power generators, the Company has introduced the most efficient equipment among the generators of the optimal size for the Okinawa area. Currently, we recognize that this is the optimal power configuration, including introduce renewable energy.

**The Company recognize measures against global warming as one of the important management issues.**

**The Company will continue making its utmost efforts be able to make in Okinawa area, to measures against global warming to be based on the S + 3E\* going forward.**

\* S+3E : Safety , Energy Security , Economic Efficiency , Environment

**Electric Power Composition Ratio**





# Measures against global warming (2/3)

## 2

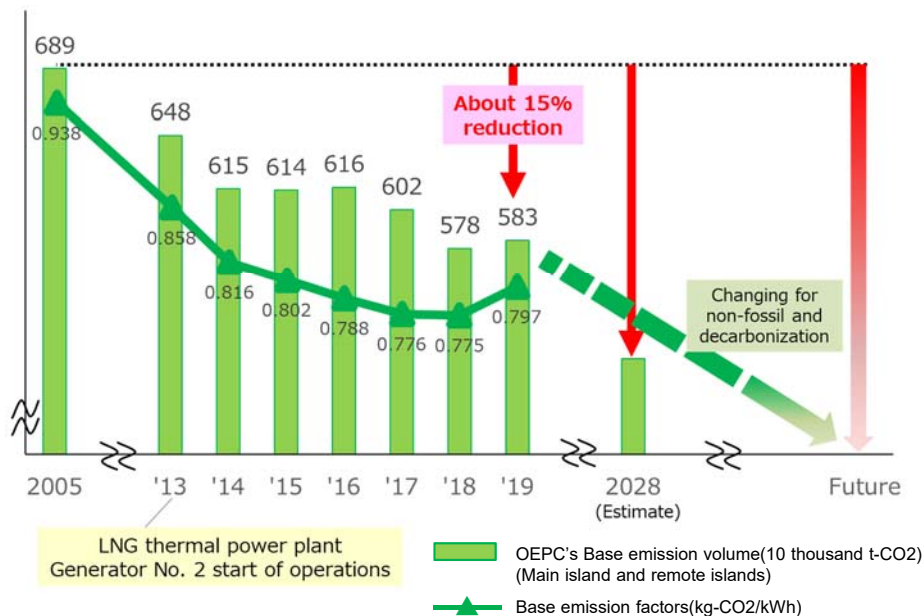
### Efforts in OEPC

- OEPC commenced operation of Yoshinoura Thermal Power Plants, which are fueled by LNG with low CO<sub>2</sub> emissions, in November 2012.
- OEPC efforts to CO<sub>2</sub> emissions reductions in cooperation with the Electricity Business Council for a Low-Carbon Society.

#### [ Current key measures against global warming ]

- Stable operation of Yoshinoura Thermal Power Plants, which are fueled by LNG. Construction of Makiminato Gas engine Power Plant. Introduction of a dual fuel engine.
- Use of renewable energy (e.g. mixed combustion of woody biomass fuel, Tilttable wind power generators, Motor generator(MG set))
- Improvement of efficiency of energy use, Promotion of energy-saving and CO<sub>2</sub> saving activities
- Contributing to measures against global warming across the prefecture by shifting the fuel from oil to LNG in the gas supply business.

#### [ Trends of CO<sub>2</sub> emission volume ]



#### [ Long-term technical studies for global warming ]

- Expand the introduction of renewable energies and storage batteries
- System stabilizing technologies
- Convert to a more efficient or next-generation generator (IGCC, IGFC)
- Zero emission thermal power generation (CCUS, hydrogen, ammonia)

**It is a challenging goal to further reduce CO<sub>2</sub> emissions or change to zero emissions in the future.**

**Technological breakthroughs are needed to achieve these goals. We will diligently conduct development and introduction of next-generation technologies.**

# Measures against global warming (3/3)

## 3

### Efforts in OEPC Group

- Through the gas supply business, the OEPC Group is working to shift customers' energy sources from heavy oil to LNG, which is low in CO<sub>2</sub> emissions.
- In the overseas business, the OEPC Group contributes to promoting the wide spread use of renewable energy facilities in Pacific island states with high dependency on fossil fuels similar to Okinawa.
- The OEPC Group will make all-out efforts to reduce CO<sub>2</sub> emissions in a comprehensive manner.

#### [ Efforts in gas supply business ]

##### Orion Breweries, Ltd.

- Orion Breweries became the first brewing company in Okinawa to shift its fuels from heavy oil to natural gas.
- Introduction of natural gas is expected to reduce CO<sub>2</sub> emissions by 1,500t annually.



▲ LNG satellite facilities

#### [ Efforts in overseas business ]

##### Delivery of tiltable wind power generators to Tonga.

- Progressive Energy Corporation (PEC) received an order for ODA project involving the Kingdom of Tonga.
- PEC signed a contract with Tonga Power Limited for five tiltable wind power generators.
- On June 2019, PEC completed constructions of five tiltable wind power generators, and handed over them to the Kingdom of Tonga.



▲ Tiltable wind power generators at the Kingdom of Tonga.

# 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 Tilttable Wind Power       | 1            | 245 kW          | *1     |
|             | Minamidaito Tilttable Wind Power | 2            | 490 kW          | *1     |
|             | Tarama Tilttable Wind Power      | 2            | 490 kW          | *1     |
|             | Hateruma Tilttable Wind Power    | 2            | 490 kW          | *1     |
|             | <b>subtotal (6)</b>              | <b>10</b>    | <b>6,315 kW</b> |        |
| 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     |
|             | <b>subtotal (8)</b>              | <b>—</b>     | <b>5,530 kW</b> |        |

(As of September 30, 2020)

\*1 Tilttable 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).

## 【 OEPC 】

|        | Name   | No. of Units | Output       | Remark |
|--------|--|--------------|--------------|--------|
| Others | Mix combustion of coal and wood biomass (at Gushikawa Thermal Power Plant) | 2            | —            | *3     |
|        | Miyako Small Hydroelectric Power   | 1            | 60 kW        |        |
|        | <b>subtotal (2)</b>  | <b>3</b>     | <b>60 kW</b> |        |

## 【 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         |        |
|             | <b>subtotal (8)</b>     | <b>14</b>    | <b>15,815 kW</b> |        |
| Solar Power | Iejima Solar Power      | —            | 10 kW            |        |
|             | Tokashiki Solar Power   | —            | 198 kW           |        |
|             | <b>subtotal (2)</b>     | <b>—</b>     | <b>208 kW</b>    |        |

# 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, no 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 plans to consider measures to expand the introduction of wind power generation going forward.

\* Extreme wind speed

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

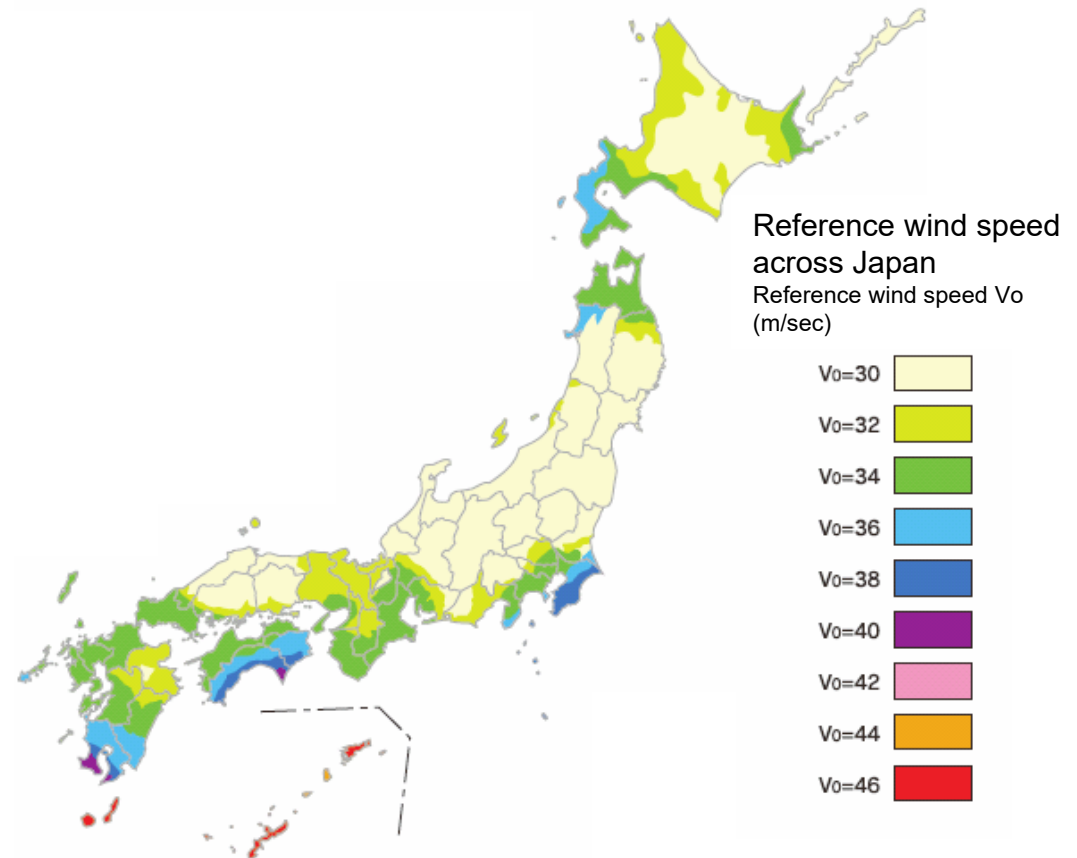
Extreme wind speed (90 m/s)

= Reference wind speed (46 m/s)  $\times a \times b \times c$

a: Coefficient corresponding to the terrain

b: Coefficient corresponding to the hub height, etc.

c: Coefficient corresponding to the maximum instantaneous wind speed



[Design reference wind speed distribution]

\*Image of "Building Standards Act Notice No.1454" categories

Source: Japan Exterior Industry Association website



# 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.
- Since the systems of Okinawa area are small and independent, the limit of connection volume is likely to occur when using renewable energy.

### [Connection of renewable energies]

#### ■ Main island of Okinawa

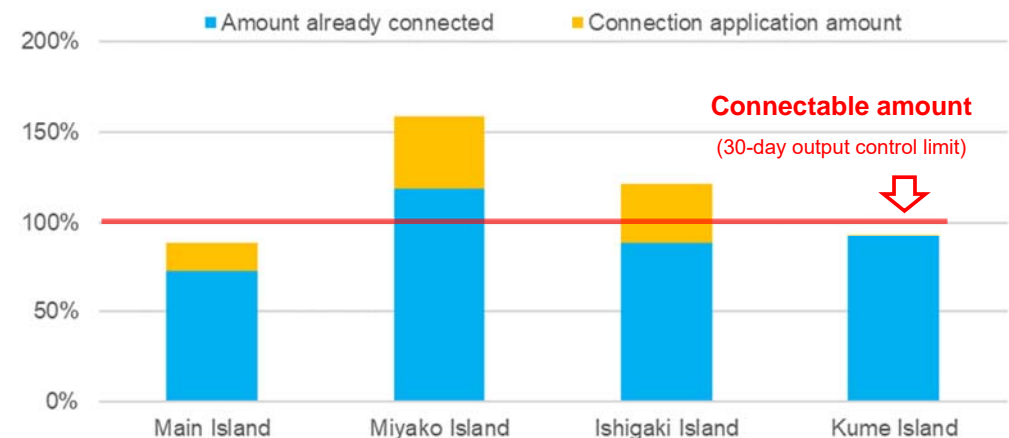
(MW)

|       | 30-day output control limit | Amount already connected | Connection application amount | Total |
|-------|-----------------------------|--------------------------|-------------------------------|-------|
| Solar | 495                         | 358                      | 79                            | 437   |

#### ■ Remort islands

(kW)

|          | 30-day output control limit | Amount already connected | Connection application amount | Total  |
|----------|-----------------------------|--------------------------|-------------------------------|--------|
| Miyako   | 24,101                      | 30,489                   | 10,771                        | 41,260 |
| Ishigaki | 21,991                      | 20,843                   | 6,233                         | 27,076 |
| Kume     | 2,719                       | 2,504                    | 34                            | 2,538  |



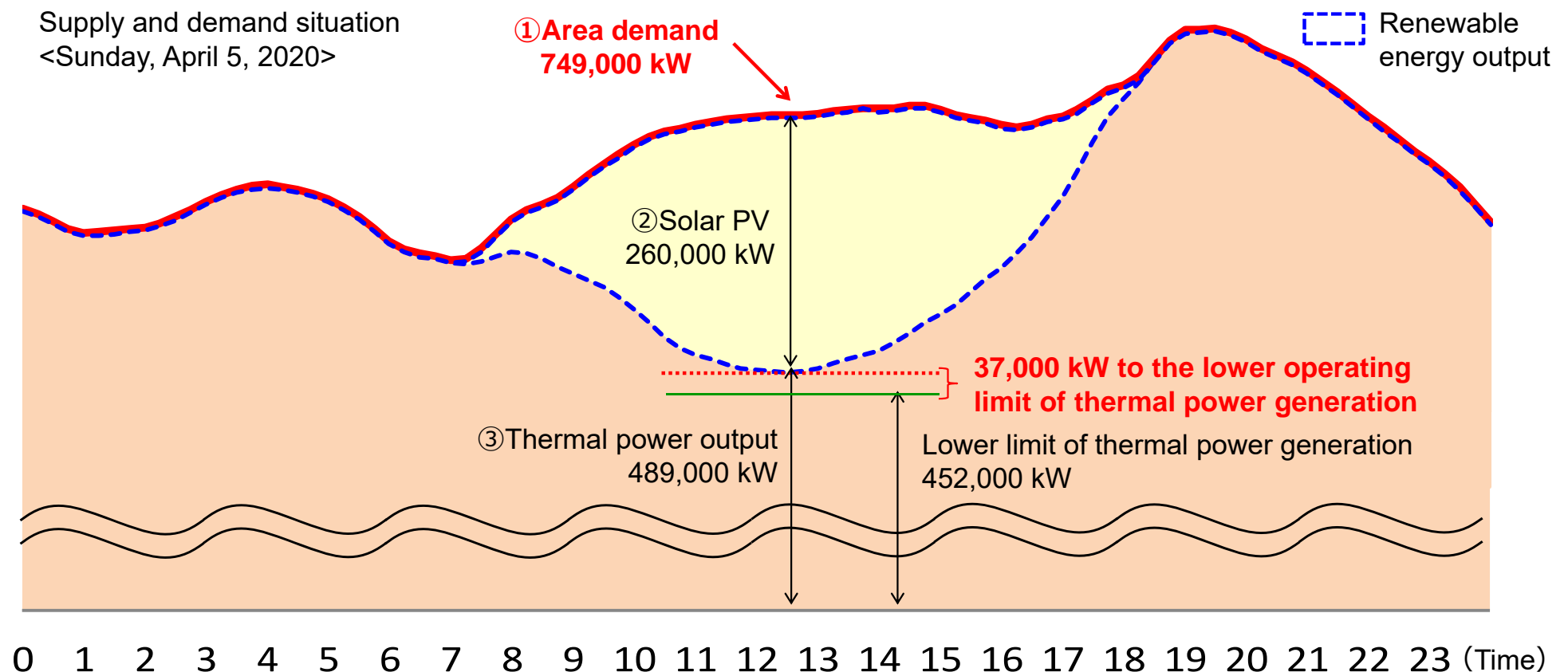
\* The connectable amount (30-day output control limit) and the connected (applied) amount are figures of solar PV generation only for the Main Island, while those of whole renewable energies including wind power for the three remote islands.

\* As of September 30, 2020

# 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.





# Efforts to expand the introduction of renewable energies(1/3)

## 1 Introduction of Tiltable wind power generators

- It's problem that damaging to wind turbines due to strong wind because Okinawa is the area to hit typhoons frequently.
- The introduction of Japan's first tiltable wind power generators has enabled the stable operation of renewable energy and reduced the cost of fuel and repair and maintenance.
- Currently, it has been introduced to 4 remote islands, Aguni, Minami Daito, Tarama and Hateruma.

### <Characteristics and advantages of Tiltable wind power generator>

- Wind power generators can be tilted nearly 90 degrees so that damages by strong winds from typhoons can be avoided by tilting them.
- Wind power generators do not need large-size cranes to construct and can be constructed in moderate hilly areas.
- Wind power generators are retractable so that maintenance work can be carried out on the ground.
- Wind power generators are supported by wires.



▲Aguni tiltable wind power generators when tilted

# Efforts to expand the introduction of renewable energies(2/3)

## 2 Introduction of motor generator (MG set) in Hateruma Island

- Demonstration test of motor generator (MG set) is under way.
- The MG set operates powered by a battery charged with excess electricity from renewable energy sources. The system effectively utilizes surplus electricity from renewable energy sources, which could not be supplied to the grid before and therefore was restricted.
- The system is connected to the commercial grid as a unit with the same functions as a diesel generator. This is a globally unprecedented initiative to expand the introduction of renewable energies.
- The electricity used on Hateruma Island was temporarily\* supplied using 100% renewable energy.

\* 1 hour 47 minutes from 5:35 AM to 7:22 AM on November 27, 2018

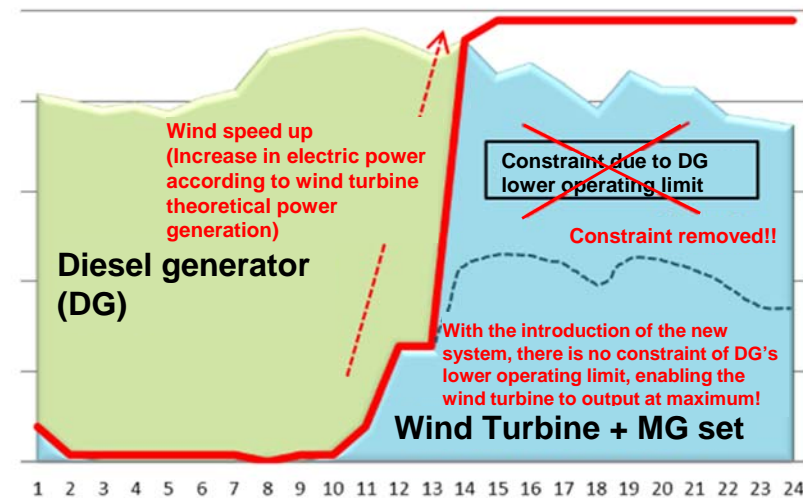
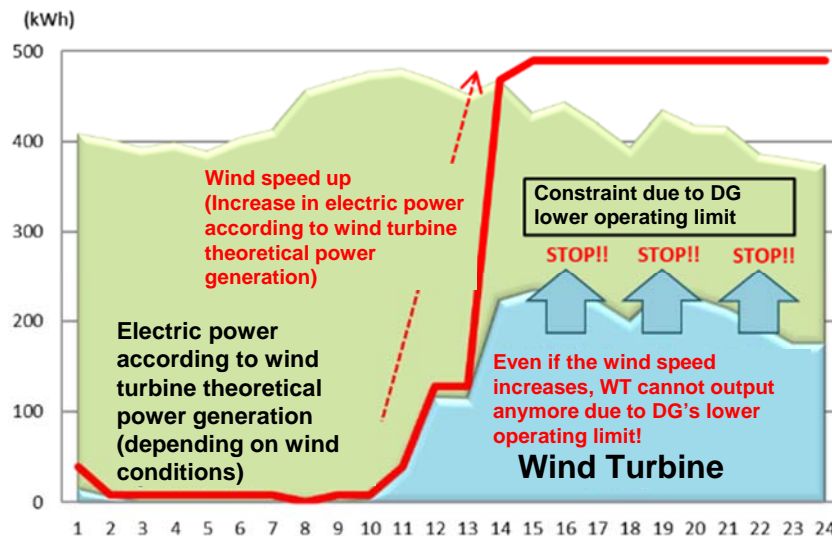
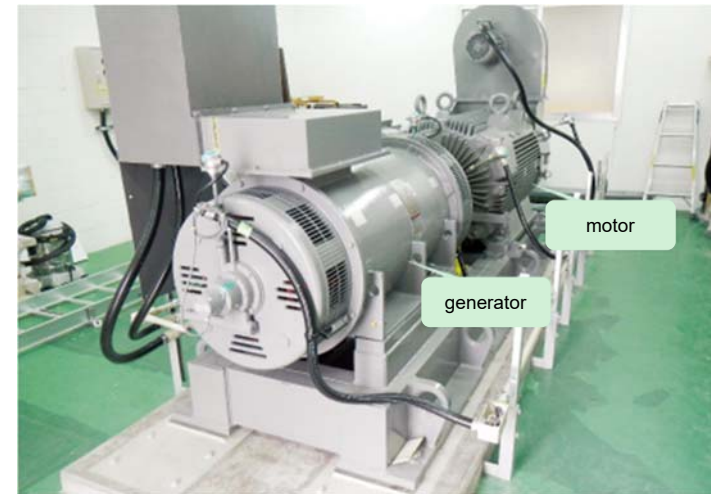


Figure. Image of maximizing renewable energy operation by introducing MG set

# Efforts to expand the introduction of renewable energies(3/3)

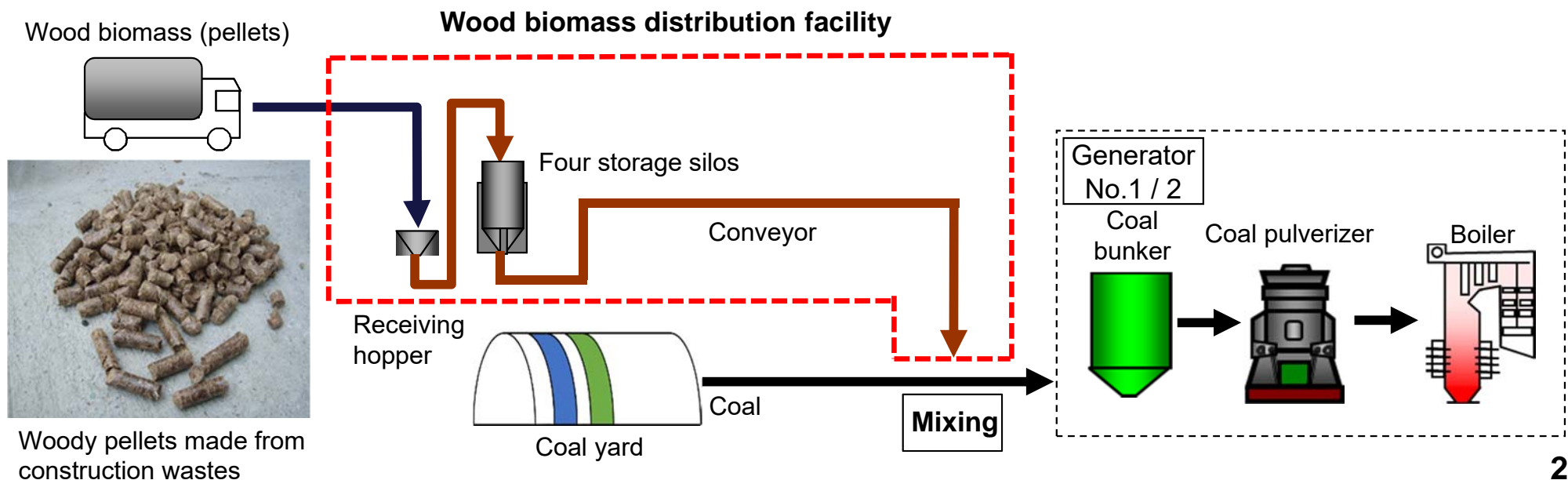
## 3 Efforts to expand the introduction of wood biomass fuels

- OEPC efforts to mix combustion of wood biomass fuels at coal-fired thermal power plants.\*<sup>1</sup>
- In order to promote the use of renewable energy, the decision was made to introduce it at the Kin thermal power plant.\*<sup>2</sup>

\*<sup>1</sup> Gushikawa Thermal Power Plant : from March 2010.

\*<sup>2</sup> Kin Thermal Power Plant : scheduled to start mixed combustion in March 2021.

- ✓ It uses Woody pellets made from construction wastes that have been incinerated in the prefecture.
- ✓ It contributes to the reduction of CO<sub>2</sub> emissions in the prefecture by reducing the consumption of coal as fuel while contributing to the promotion of recycling construction wastes.
- ✓ Wood biomass consumption : approx. 30,000 t/year\*  
CO<sub>2</sub> reduction: approx. 40,000 t/year\*  
(\*Total of Gushikawa and Kin Thermal Power Plants)
- ✓ Amount of possible mixed combustion : approx. 3% (weight ratio)





# 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                          | FY2019 |       |       |       |       |       |       |      |       |       |       |       |       | FY2020 |       |       |       |       |       |          |
|-------------------------------------|--------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|----------|
|                                     | 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      | 3.8    | 3.3   | 3.9   | 4.2   | 2.6   | 8.7   | -5.7  | 1.0  | 0.4   | 2.6   | 0.2   | -6.4  | 1.5   | -16.1  | -6.9  | 2.5   | -2.7  | -8.1  | -11.8 | -7.2     |
| No. of new car sold                 | 3.4    | 6.0   | -11.3 | -6.6  | 8.2   | 12.8  | -17.7 | -5.6 | -4.0  | -7.3  | -0.5  | -15.5 | -3.7  | -39.3  | -54.0 | -32.7 | -18.7 | -14.9 | -11.4 | -28.9    |
| No. of incoming tourists            | 2.2    | 0.5   | 7.2   | 8.8   | -1.9  | 1.0   | 0.2   | 0.5  | 1.0   | -3.4  | -23.5 | -55.2 | -5.3  | -90.9  | -94.7 | -83.4 | -71.2 | -80.1 | -71.9 | -81.8    |
| Value of public works contracts     | -24.3  | 30.4  | -18.1 | 94.2  | -17.8 | -12.5 | 29.8  | 28.2 | 94.7  | 1.3   | -47.5 | -11.7 | 4.3   | 37.2   | -9.5  | 44.5  | -14.1 | 0.3   | 0.7   | 3.8      |
| New residential Construction starts | -1.5   | -38.4 | -20.6 | -16.0 | 25.5  | 10.7  | -16.2 | -0.8 | -17.5 | -37.4 | -19.1 | -18.4 | -12.1 | -2.1   | 44.1  | -44.2 | -36.9 | -41.0 | -63.4 | -32.2    |
| Total unemployment rate             | 2.5    | 2.7   | 3.0   | 2.8   | 2.9   | 3.2   | 2.8   | 2.5  | 2.5   | 3.0   | 3.1   | 2.9   | 2.8   | 3.4    | 3.4   | 3.6   | 3.2   | 3.5   | 3.7   | 3.5      |
| Job Opening Ratio                   | 1.18   | 1.18  | 1.19  | 1.19  | 1.20  | 1.19  | 1.20  | 1.20 | 1.19  | 1.11  | 1.11  | 1.06  | 1.16  | 0.91   | 0.78  | 0.68  | 0.67  | 0.67  | 0.64  | 0.70     |

Note 1: The figures for 'Sales by large-scale retailers' are calculated on an all-store base. The values in September 2020 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.

(Please note that the values for the fiscal year are both raw data.)

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%<br>3,861.2   | 5.4%<br>4,071.0   | 3.2%<br>4,203.2   | 1.5%<br>4,266.4   | 2.0%<br>4,351.4   | 0.1%<br>4,354.0   |
| National GDP    | -0.4%<br>510,704.0 | 1.3%<br>517,223.3 | 0.9%<br>521,962.9 | 1.9%<br>532,033.7 | 0.3%<br>533,408.2 | 0.0%<br>533,541.6 |

Sources: "Prefectural Accounts for FY2017", "Prefectural economic outlook for FY2019" and Cabinet Office "List of Statistical Tables" (Second Preliminary Data for the April-to-June 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.

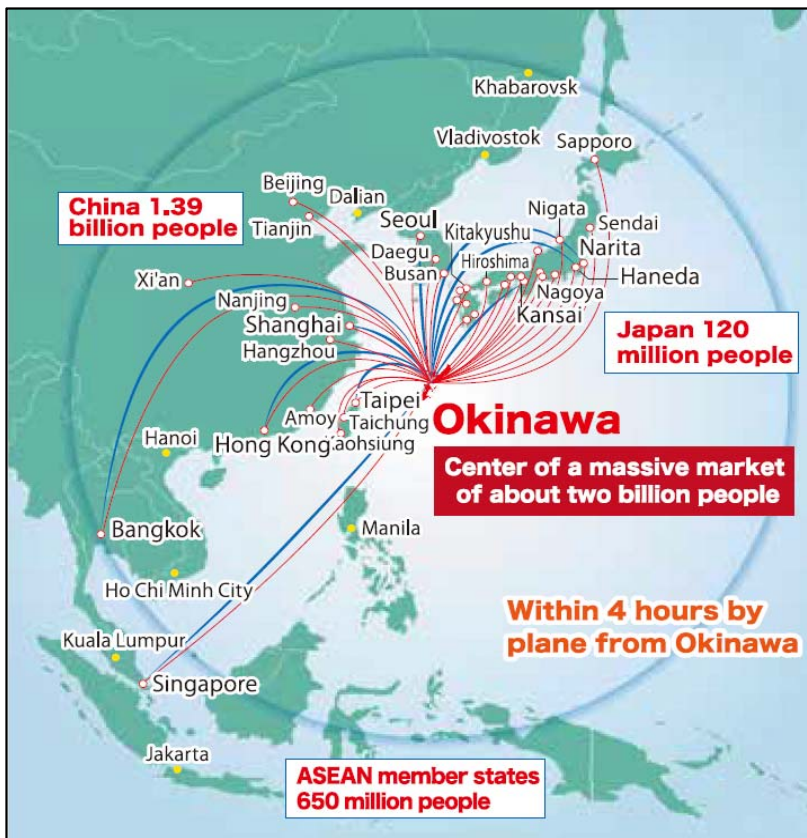
As the plan is scheduled to expire in FY2021, the national and prefectural governments conducted a comprehensive inspection of the implementation status in March 2020, and are currently making efforts to formulate the next promotion plan.



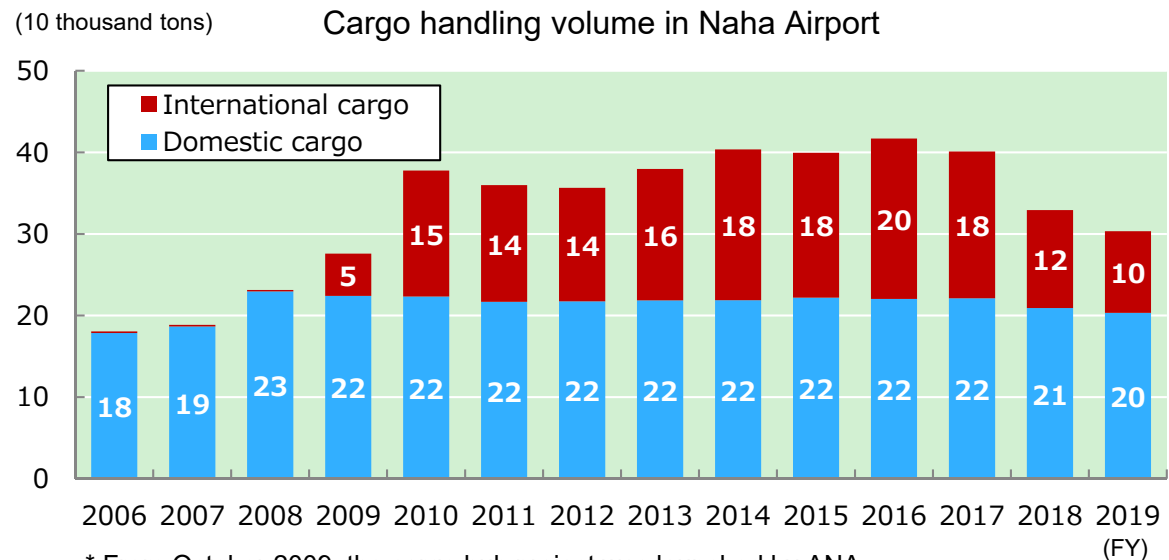
# Q1. Topics of Okinawa's Economy

## 3 Okinawa International Logistics Hub

- Okinawa Prefecture is promoting the establishment of an international logistics hub through accumulating the industries at the areas peripheral to airport and harbor where new business is to be developed through utilizing Okinawa international logistics hub. In addition, Okinawa Prefecture is working hard to attract logistics companies from home and abroad.



- Okinawa Prefecture is located in the center of the huge market of two billion people.
- Travel time required between Okinawa Prefecture and major cities in Japan and Asia is about four hours.
- Utilizing late-night cargo flights through 24-hour operation system at Naha Airport.
- Quick transportation through 24-hour customs clearance system.



Source: A pamphlet titled "Okinawa International Logistics Hub" (prepared by the International Logistics Promotion Division, Department of Commerce, Industry and Labor and available on the website of the Okinawa Prefecture)

# Q1. Topics of Okinawa's Economy

## 4 Aviation Industry Cluster

- Aviation demand in Asia is expected to increase in the future and the total number of aircraft is expected to increase by 2.46x in the next 20 years.
- Okinawa Prefecture, taking advantage of the characteristic of the center of Asia, is engaged in the aviation industry cluster focused on MRO\*.
- MRO Japan started aircraft maintenance business at Naha Airport in January 2019.

\* MRO : Maintenance, Repair, & Overhaul



**MROJapan**

MRO Japan Co., Ltd.

Established on June 2015 (Head Office: Naha City)  
Businesses: Aircraft Maintenance, Repair, & Overhaul

Paid-in Capital: 1 billion yen

Shareholder composition:

ANA Holdings Inc. 45%

JAMCO Corporation. 25%

Mitsubishi Heavy Industries, Ltd. 20%

The Okinawa Development Finance Corporation. 2%

Bank of The Ryukyus, Ltd. 2%

The Bank of Okinawa, Ltd. 2%

The Okinawa Kaiho Bank, Ltd. 2%

[The Okinawa Electric Power Company, Inc. 2%](#)

# 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              | 187,082km <sup>2</sup> |

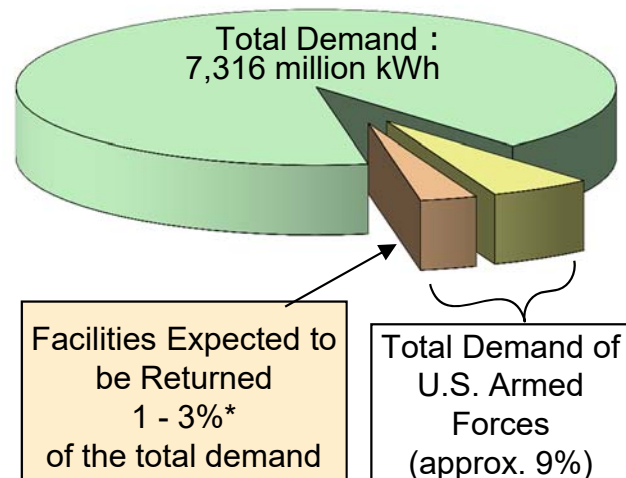
### <Reference>

No. of employees working for the U.S. Armed Forces in Okinawa: 8,936

\*As of the end of March 2019.

Sources : Japan Ministry of Defense "US Forces and SDF Bases in Okinawa March 2020", Military Base Affairs Division, Executive Office of the Governor, Okinawa Prefecture

## The U.S. Armed Forces' share of total electricity demand (FY2019)



\* 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 <sup>2</sup> |
| Okuma Rest Center [ US Air Forces ]           | Kunigamison   | 546千m <sup>2</sup>    |
| Iejima Auxiliary Air Base [ US Marine Corps ] | Ieson   | 8,015千m <sup>2</sup>  |
| Yaedake Communication Site [ US Air Forces ]  | Motobucho, Nago-shi   | 37千m <sup>2</sup>     |
| Camp Schwab [ US Marine Corps ]               | Nago-shi, Ginozason   | 20,626千m <sup>2</sup> |
| Camp Hansen [ US Marine Corps ]               | Nago-shi, Ginozason, Onnason, Kincho                              | 48,728千m <sup>2</sup> |
| Kadena Ammunitions Storage Are [ shared use ] | Onnason, Uruma-shi, Okinawa-shi, Kadenacho, Yomitanson            | 26,585千m <sup>2</sup> |
| Camp Courtney [ US Marine Corps ]             | Uruma-shi   | 1,339千m <sup>2</sup>  |
| Camp Mc Tureous [ US Marine Corps ]           | Uruma-shi   | 379千m <sup>2</sup>    |
| Camp Shields [ shared use ]                   | Okinawa-shi   | 700千m <sup>2</sup>    |
| Torii Station [ US Army ]                     | Yomitanson  | 1,895千m <sup>2</sup>  |
| Kadena Airbase [ shared use ]                 | Okinawa-shi, Kadenacho, Chatancho, Naha-shi                       | 19,855千m <sup>2</sup> |
| White Beach Naval Facility [ shared use ]     | Uruma-shi   | 1,568千m <sup>2</sup>  |
| Camp Kuwae [ shared use ]                     | Chatancho   | 675千m <sup>2</sup>    |
| Camp Zukeran [ shared use ]                   | Uruma-shi, Okinawa-shi, Kitanakagusukuson, Chatancho, Ginowan-shi | 5,450千m <sup>2</sup>  |
| Futenma Airport [ US Marine Corps ]           | Ginowan-shi   | 4,759千m <sup>2</sup>  |
| Makiminato Service Areas [ US Marine Corps ]  | Urasoe-shi  | 2,677千m <sup>2</sup>  |
| Naha port facilities [ shared use ]           | Naha-shi  | 559千m <sup>2</sup>    |

\*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 )

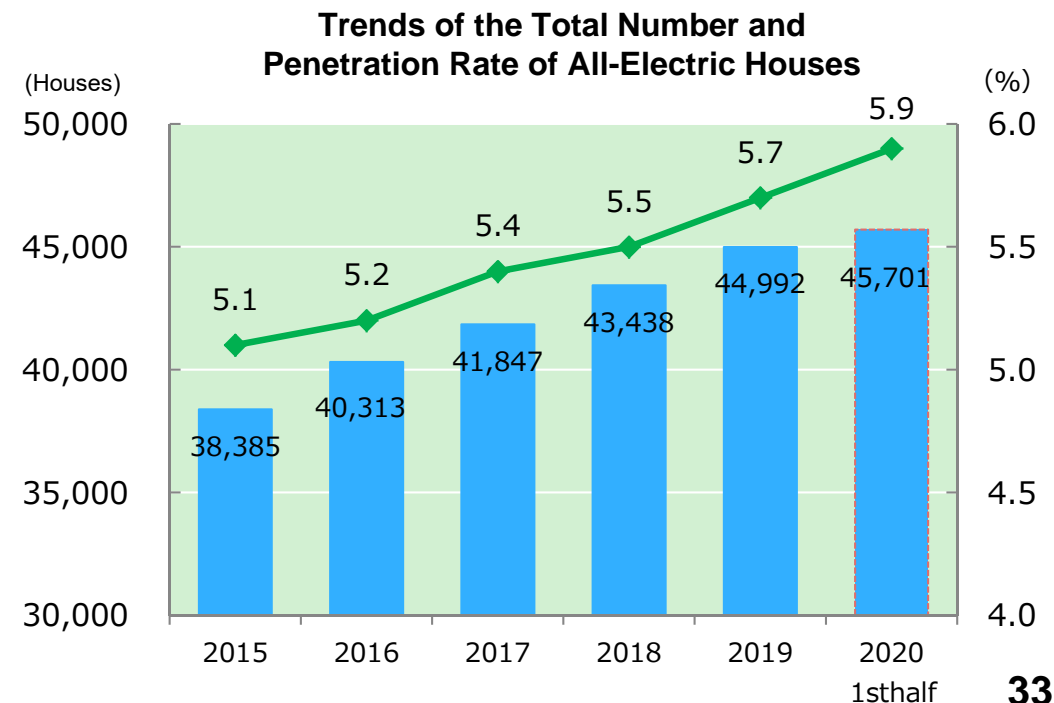
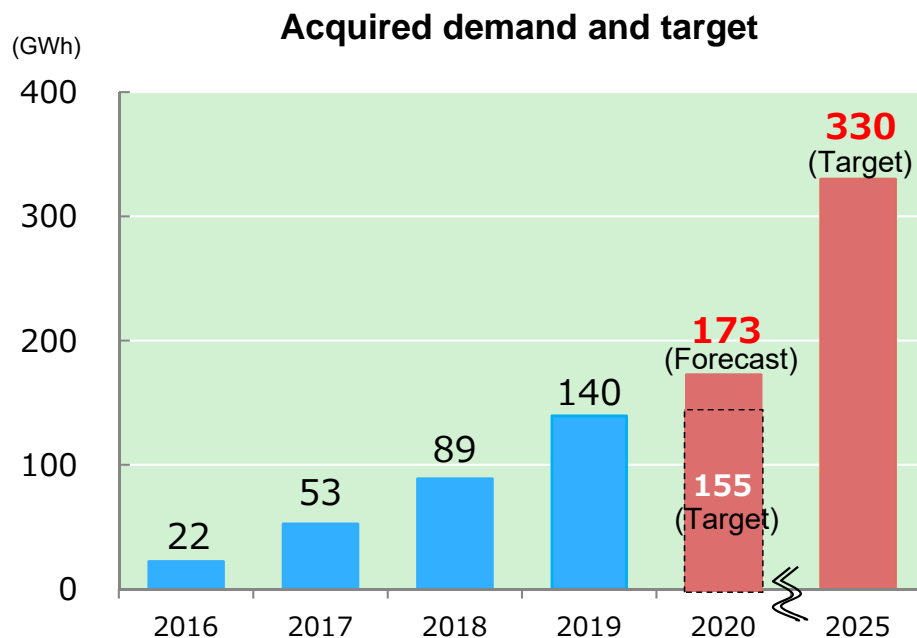
# Q3. What is the Current State of Promotion of Electrification?

## ■ 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) Conducting promotion for solar power facility installers.
- (5) 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.



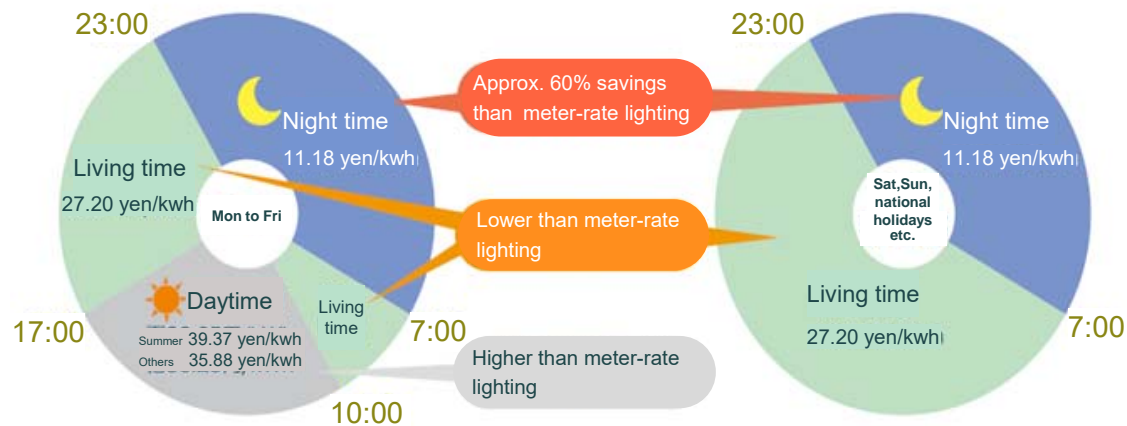


# Q4. What is the enrichment of electricity rate menus?

## The electricity rate menu for all electrification

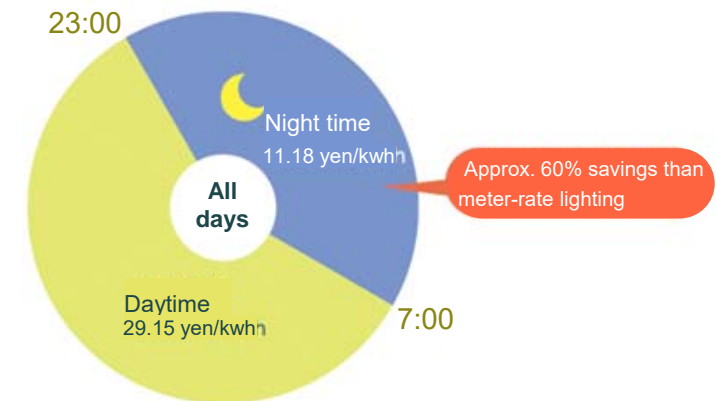
### ◆Ee Home Holiday

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



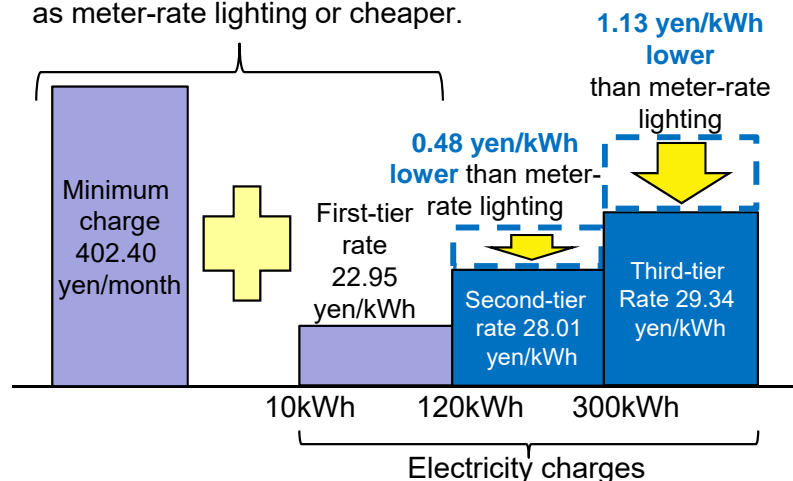
### ◆Ee Home Flat

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



- ✓ 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



|                 |                            | 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.

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

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

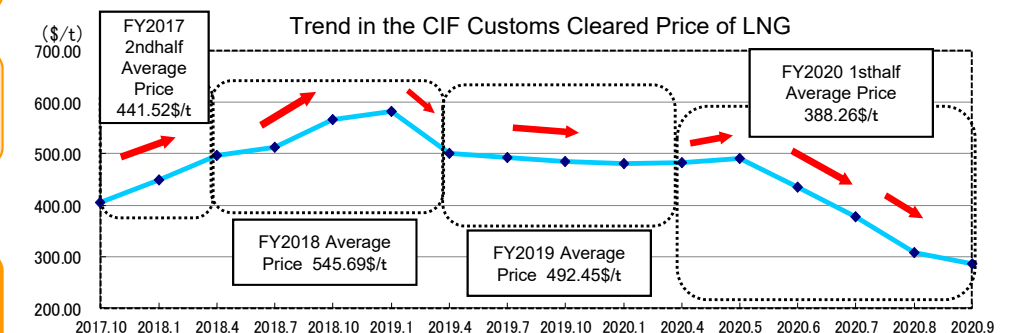
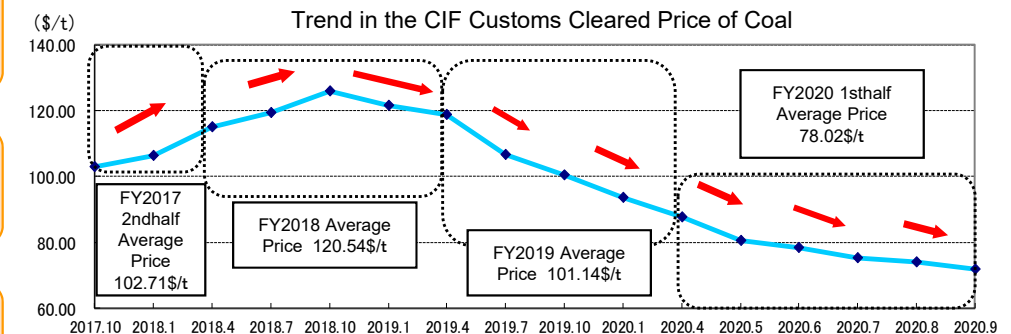
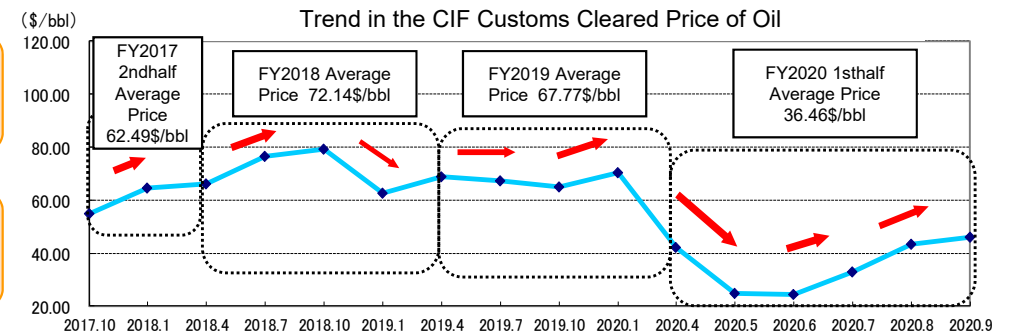
Reduction of fuel costs through measures including purchasing fuel oil on the spot market

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

**Achieving stable fuel supply and pursuing cost reductions**

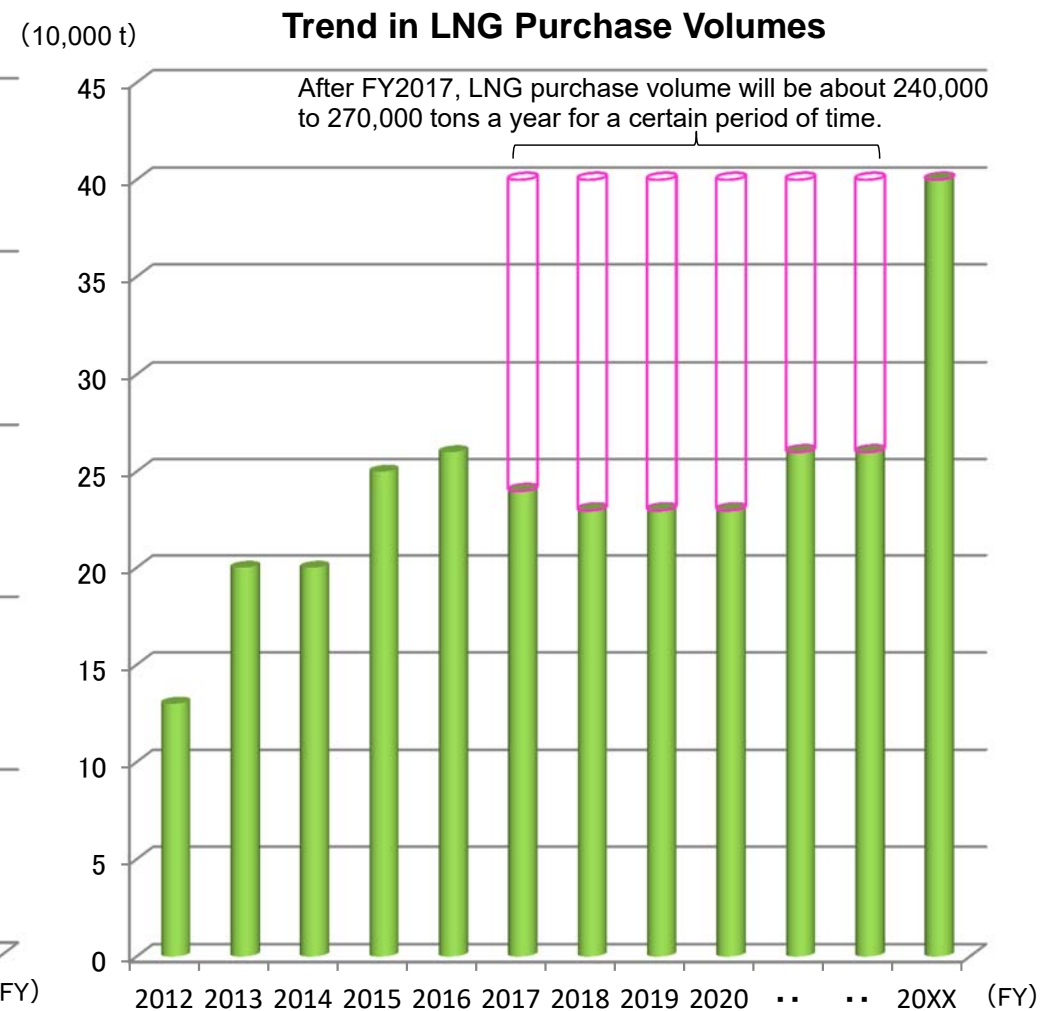
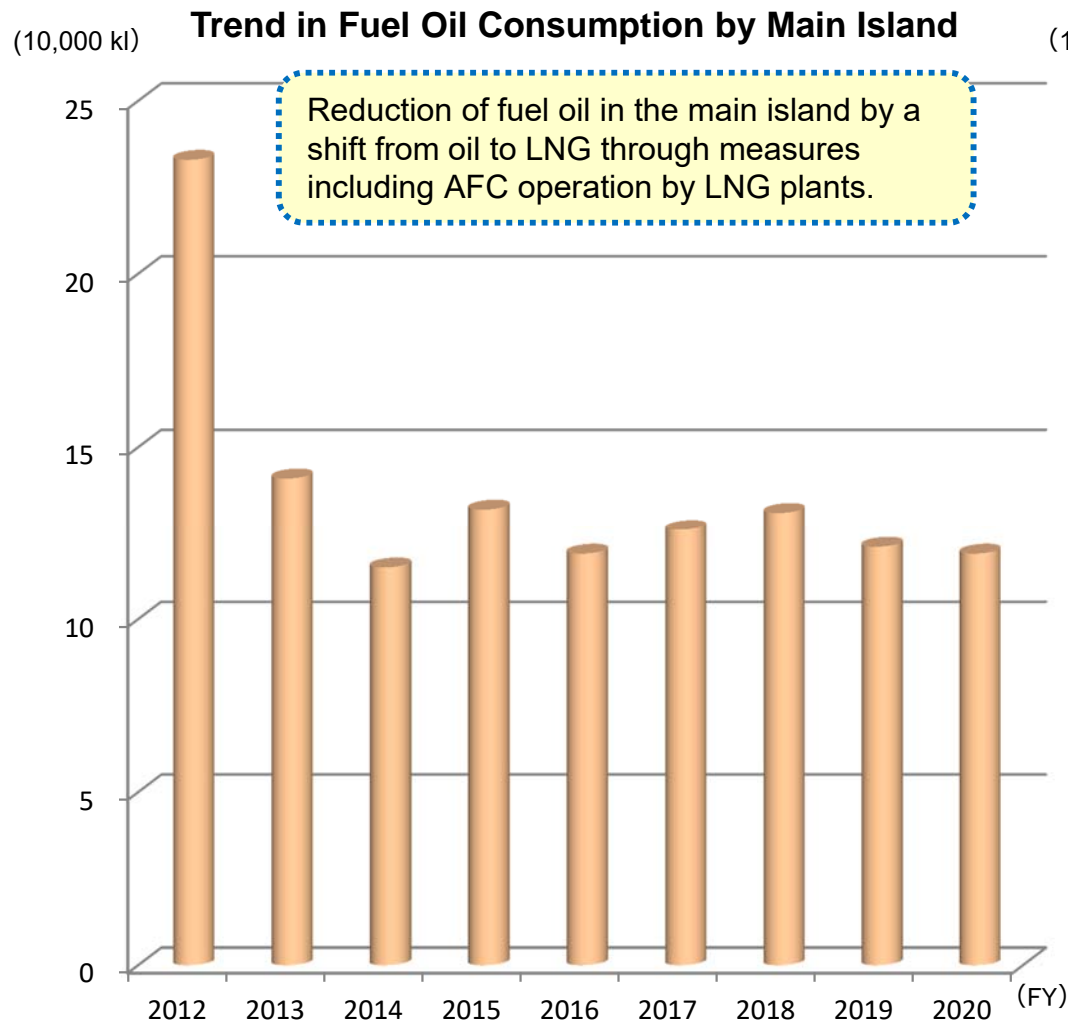


## Q5. What are the efforts to fuel cost reduction?(2/2)

■ 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.



## 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 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.
  - Under such conditions, we have 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”.
  - Also, through CSR reports and environmental action reports, we have been endeavoring to disclose information on environmental, social and governance initiatives(ESG) .
  - In recognition of the fact that our business activities are significantly related to the issue of global environment, we agree 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”.
  - We will continue to enhance information disclosure on climate change, improve corporate value, and contribute to the realization of sustainable society.
  - At present, OEPC are considering about "Governance" and "Risks and Opportunities". Scenario analysis will be progressively disclosed by 2022.



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

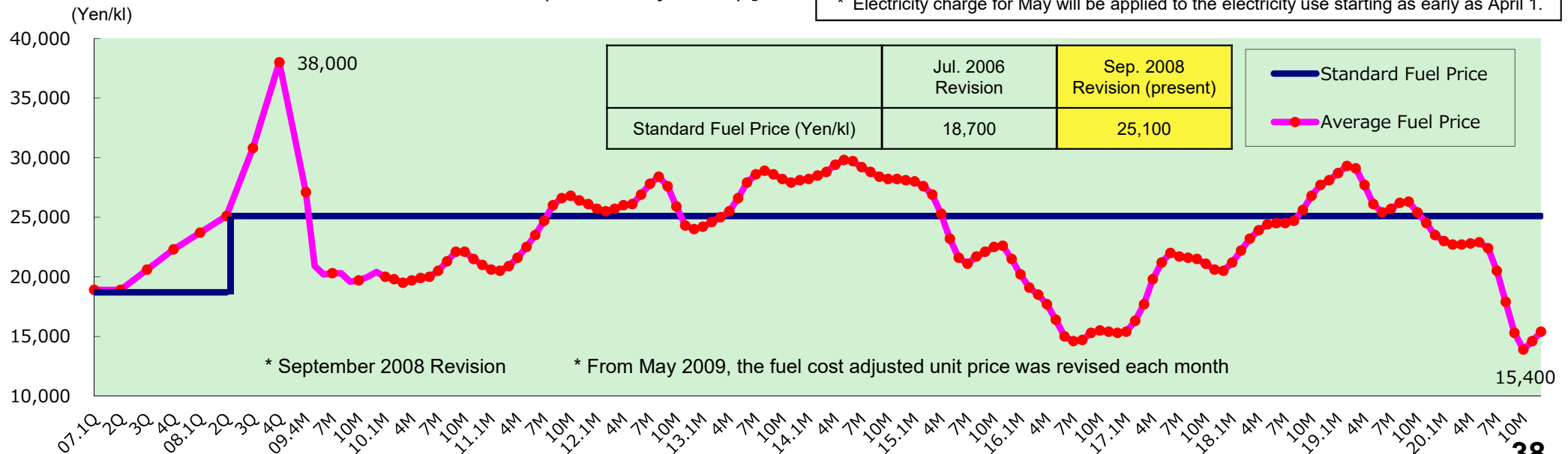
# Q7. The Fuel Cost Adjustment System

- 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 ]

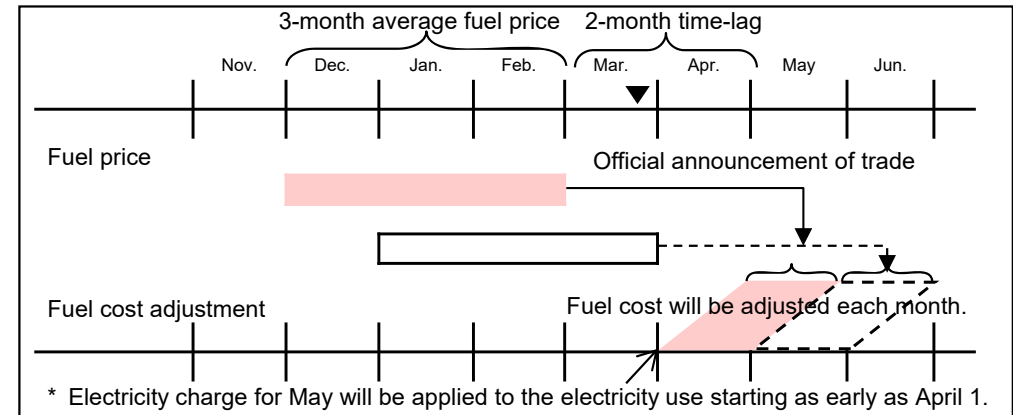
- We will calculate the average fuel price based on the prices of crude oil, coal and LNG on the trade statistics during the period between five months and three months prior to the fuel cost adjustment, and electricity charge will be automatically adjusted each month by comparing the above price with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

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



## [ 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.



# Q8. What is the approval that it's possible to engage in electricity transmission and distribution on concurrent?

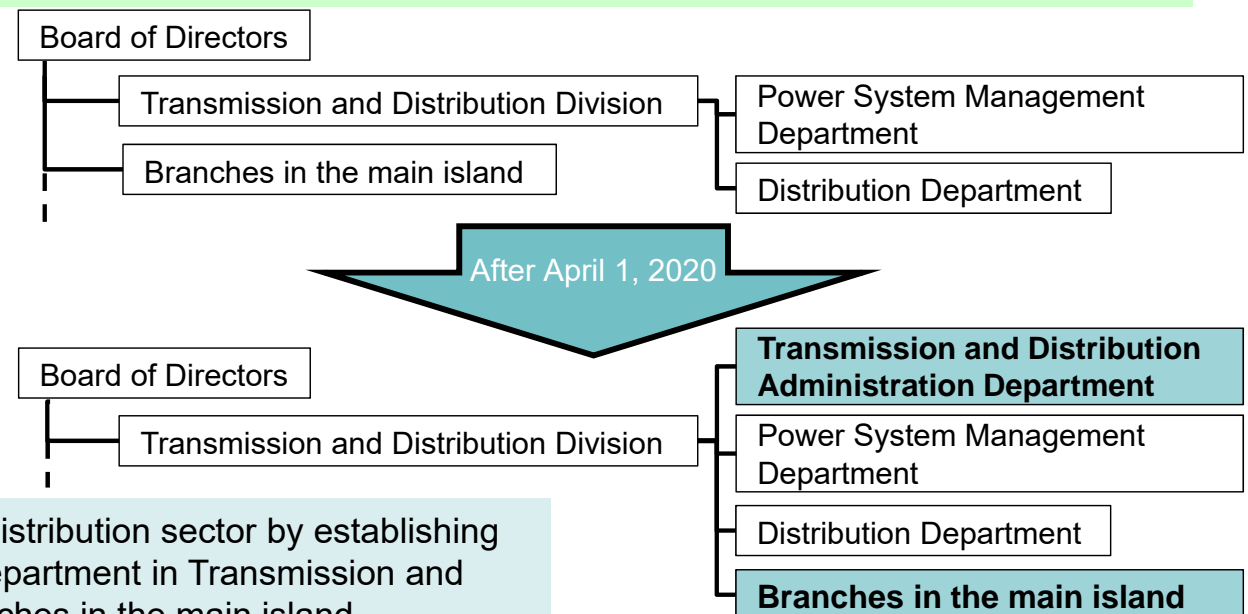
- After April 2020 when the amended Electricity Business Act comes into effect, the general electricity transmission and distribution utilities must not engage in electricity retail or electricity generation on concurrent business. (Restrictions on Concurrent Business)
- As an exception to the restriction 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.



## Q9. 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<br>(2) Exemption from the Oil and Coal Tax for LNG  |
| Period    | April 1, 1982 - March 31, 2022<br>* Extended for 2 years from April 1, 2020     | (1) October 1, 2003 – March 31, 2022<br>* Extended for 2 years from April 1, 2020<br>(2) April 1, 2012 – March 31, 2022<br>* 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)<br>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".

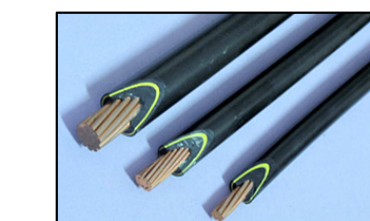
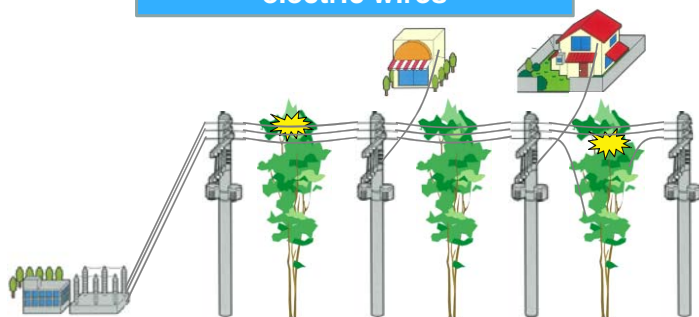
### Value of Tax Alleviation Due to the Special Measures

- The value of the alleviation measures in FY2019 : about 3.4 billion yen.
- The value of the alleviation measures for FY2020 : expected to be 3.4 billion yen.

# Q10. 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



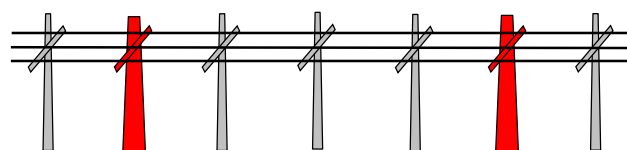
Abrasion-resistant electric wires

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

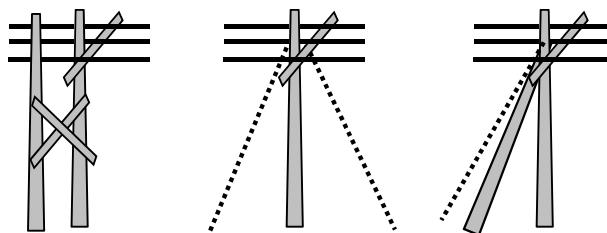
## Design standard for transmission towers

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.

## The measures to prevent the continuous collapse of utility poles



Utility poles to reinforce



Strengthened utility pole

Reinforcing wire

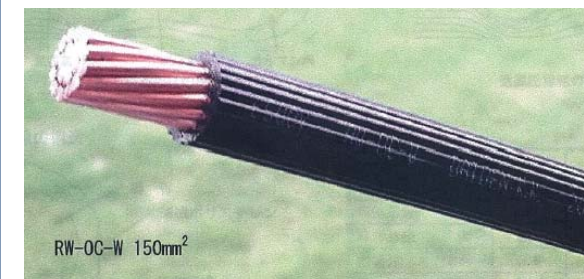
Reinforcing wire / pole

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

## 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.

## Use of electric wires to reduce wind pressure



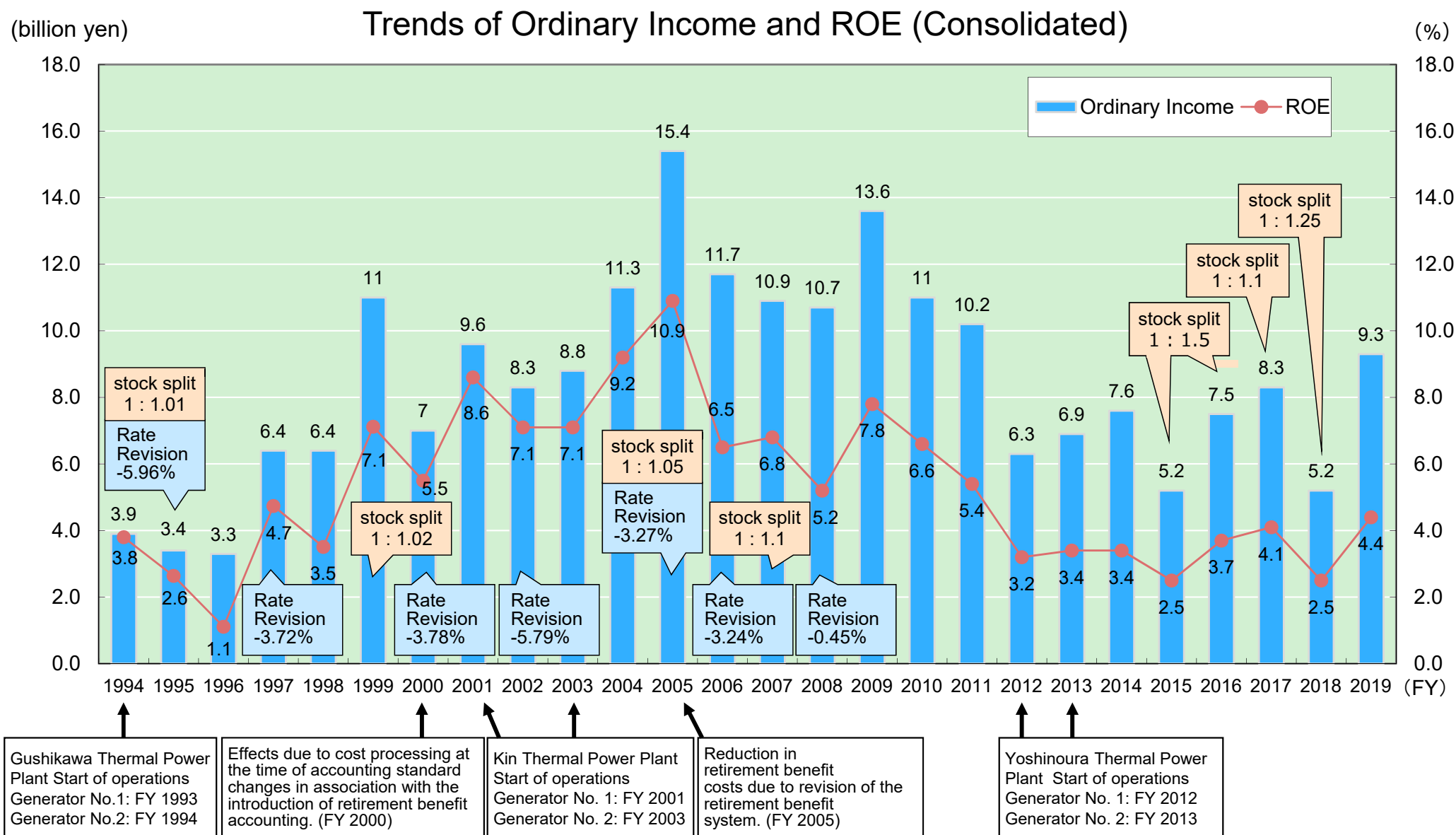
Electric wire that reduces wind pressure

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

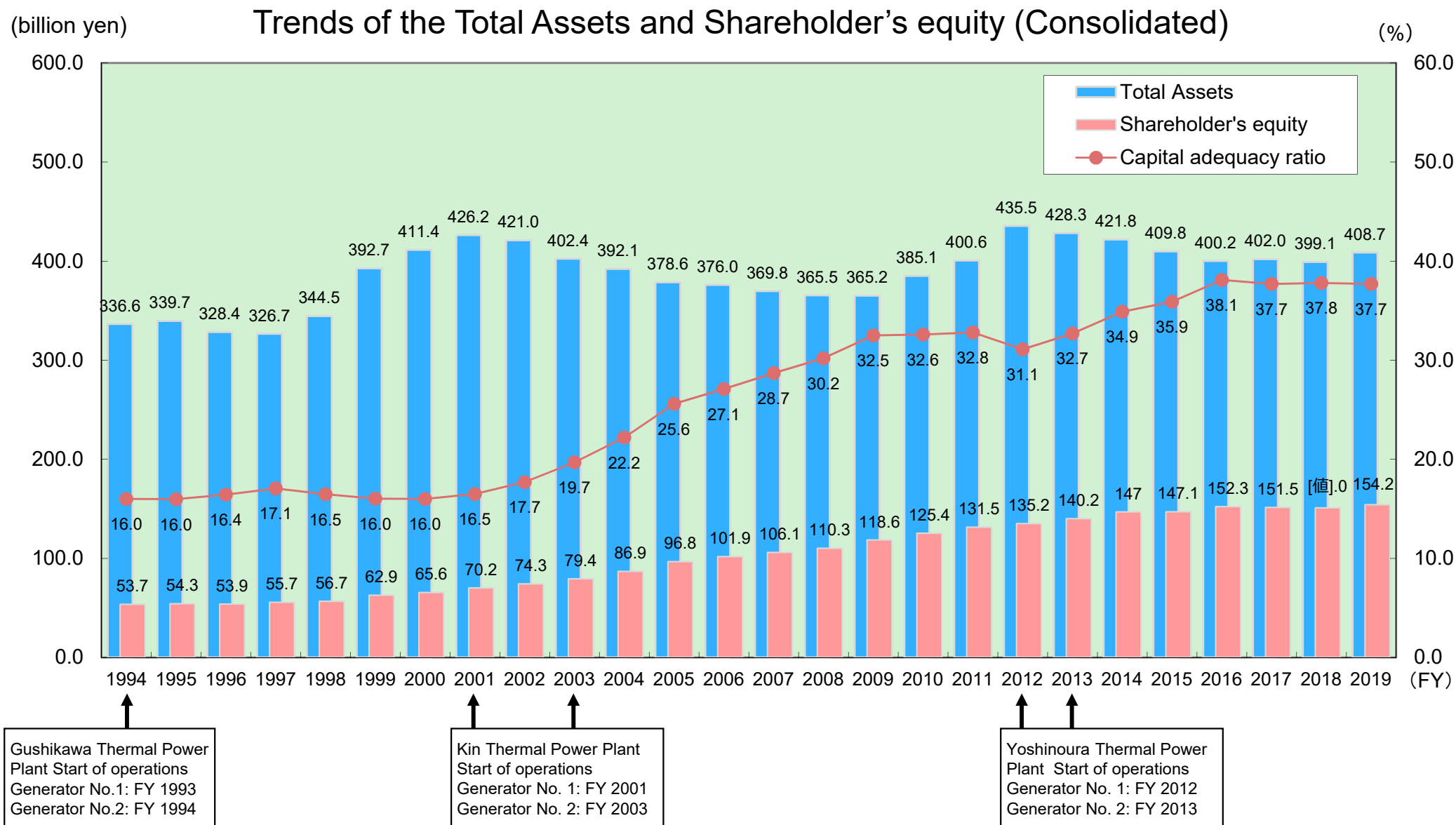
## Public relations activities

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.

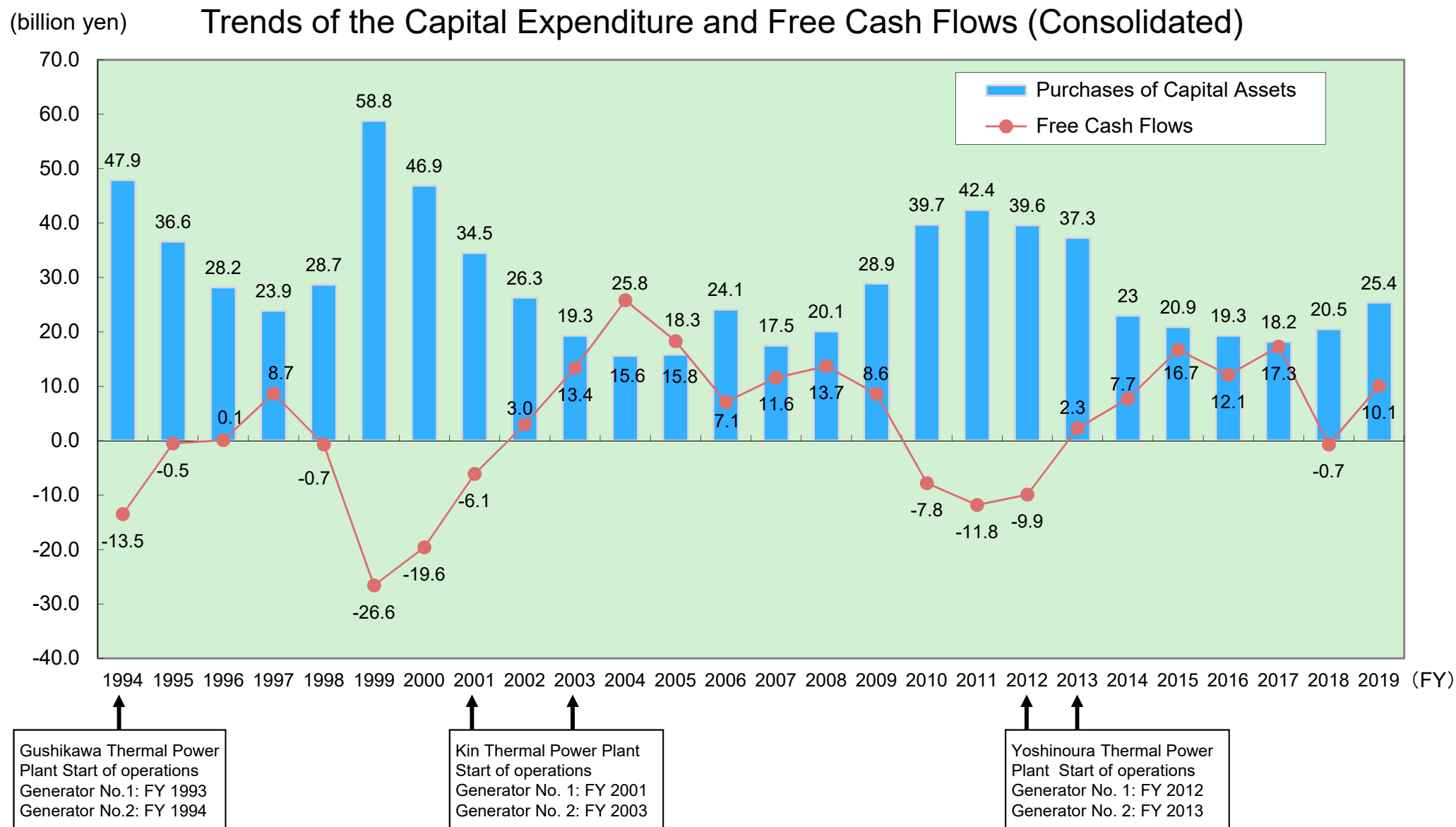
# Reference 1: Trends of Ordinary Income and ROE



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



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



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



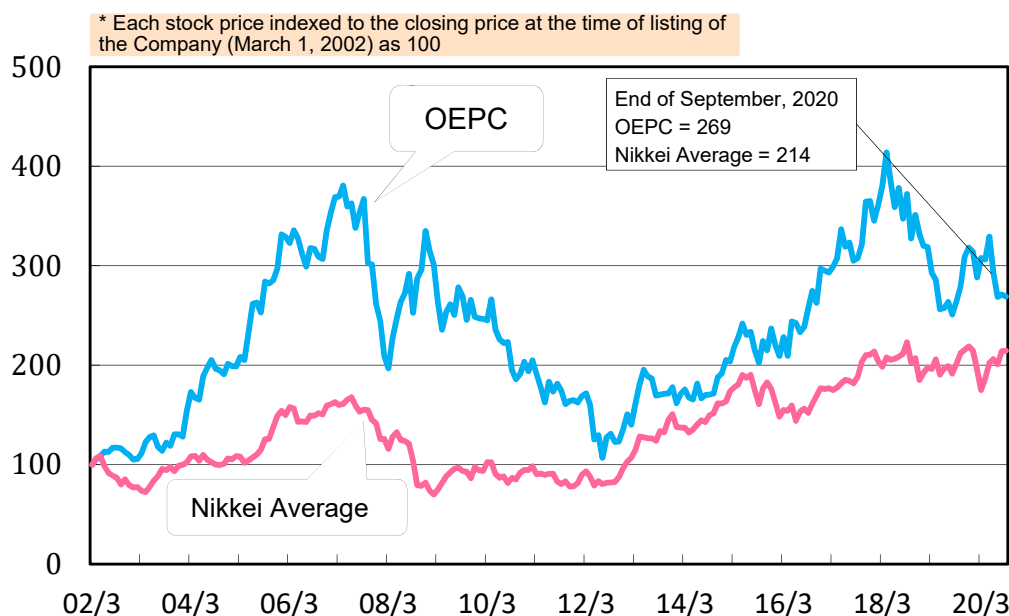
# Reference 4: Change in Okinawa Electric Power's Stock Price

Recent stock price changes: from January 6, 2020 to September 30, 2020

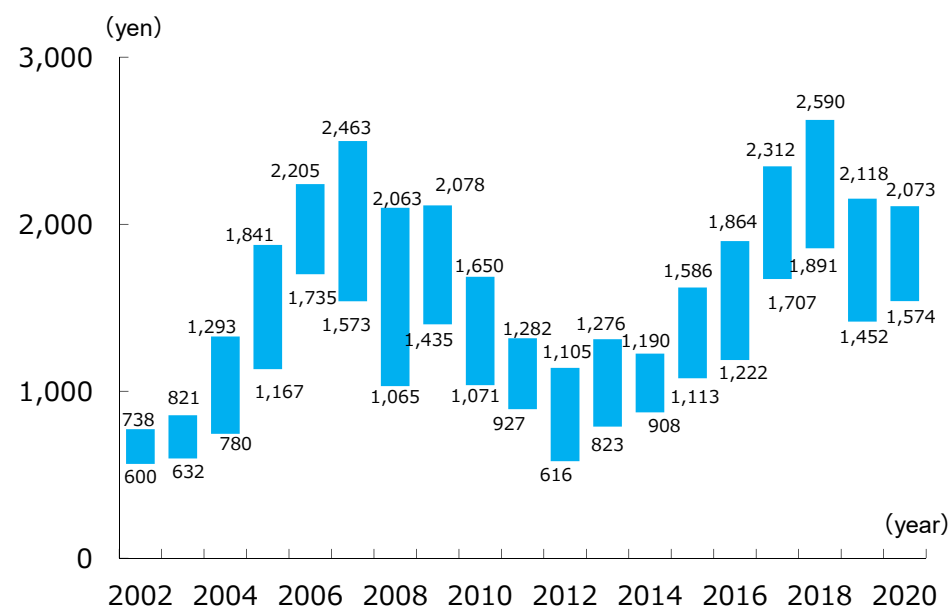
|  | Okinawa Electric Power Company, Inc.    | Nikkei Average                          |
|--|---|---|
| Stock price as of January 6, 2020 (closing price)    | 1,917 yen                               | 23,204 yen                              |
| All-time high (closing price)                        | 2,031 yen ( +6.0% ) as of May. 12, 2020 | 24,083 yen (+3.8%) as of Jan. 20, 2020  |
| All-time low (closing price)                         | 1,625 yen (-15.2%) as of Mar. 16, 2020  | 16,552 yen (-28.7%) as of Mar. 19, 2020 |
| Stock price as of September 30, 2020 (closing price) | 1,648 yen (-14.0%)                      | 23,185 yen (-0.1%)                      |

(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

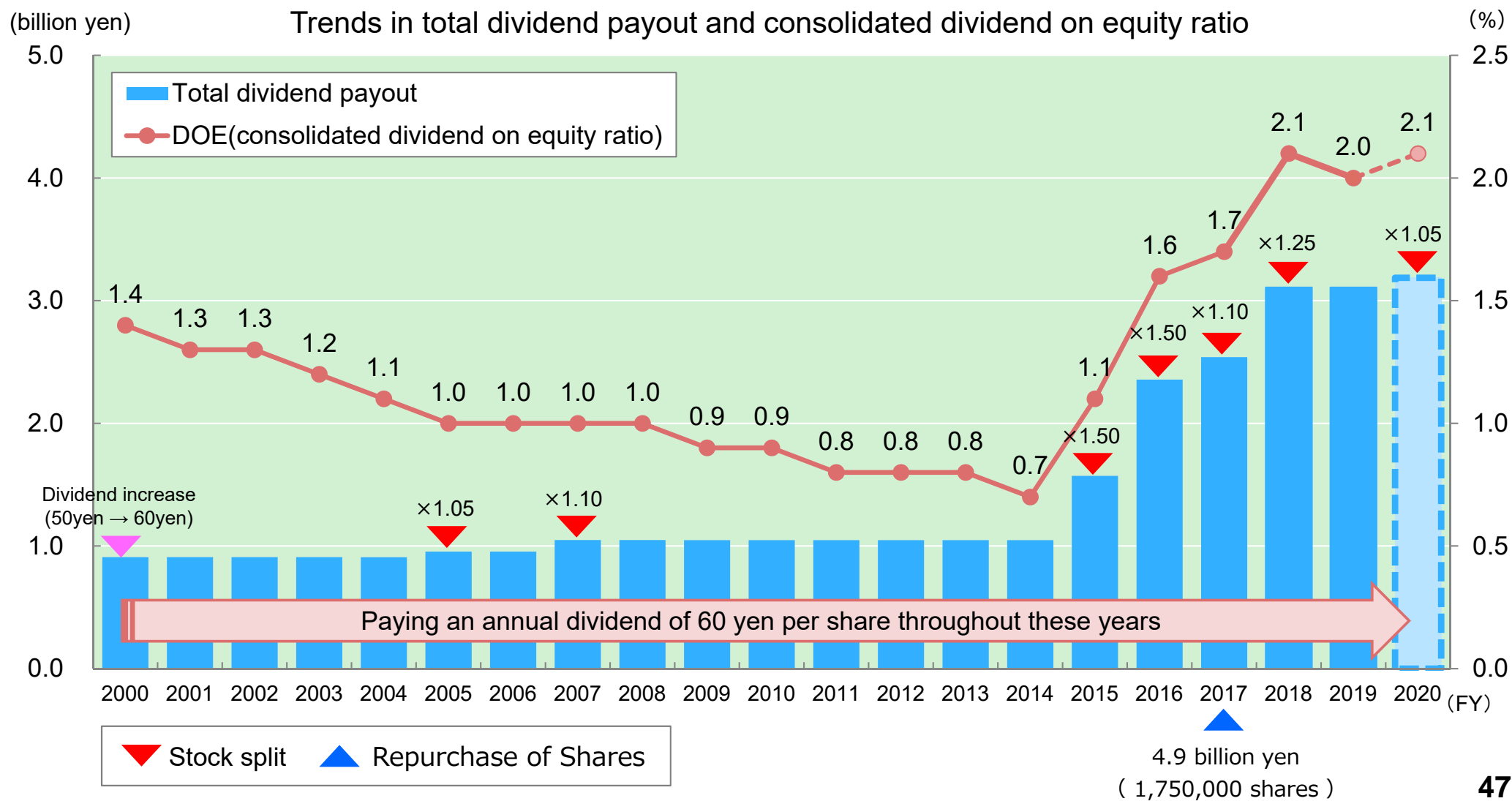
| FY  |             | 2010     | 2011     | 2012    | 2013    | 2014    | 2015    | 2016    | 2017     | 2018    | 2019     |
|---|-------------|----------|----------|---------|---------|---------|---------|---------|----------|---------|----------|
| Net income <sup>*1</sup>                          | Million yen | 8,047    | 6,956    | 4,318   | 4,731   | 4,943   | 3,647   | 5,517   | 6,273    | 3,751   | 6,705    |
| Earnings per Share <sup>*1</sup>                  | yen         | 460.58   | 398.15   | 247.20  | 270.80  | 282.99  | 139.22  | 140.41  | 147.00   | 72.38   | 129.39   |
| (Post-adjustment after stock split) <sup>*2</sup> |             | (141.79) | (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) <sup>*2</sup> |             | (18)     | (18)     | (18)    | (18)    | (18)    | (28)    | (42)    | (46)     | (57)    | (57)     |
| Payout Ratio <sup>*1</sup>                        | %           | 13.0     | 15.1     | 24.3    | 22.2    | 21.2    | 43.1    | 42.7    | 40.8     | 82.9    | 46.4     |
| Dividend Yield                                    | %           | 1.58     | 1.75     | 1.87    | 1.72    | 1.38    | 1.98    | 2.27    | 1.96     | 3.18    | 3.03     |
| Price Book-value Ratio <sup>*1</sup>              | x           | 0.53     | 0.45     | 0.41    | 0.44    | 0.52    | 0.54    | 0.68    | 0.84     | 0.65    | 0.67     |
| Price Earning Ratio <sup>*1</sup>                 | x           | 8.3      | 8.6      | 13.0    | 12.9    | 15.4    | 21.8    | 18.8    | 20.8     | 26.0    | 15.3     |


\*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】**

Budget & Finance Group, Accounting & Finance Department  
Okinawa Electric Power Company, Inc.

TEL : +81-98-877-2341 FAX : +81-98-879-1317

Email : [ir@okiden.co.jp](mailto:ir@okiden.co.jp)