# **Management Reference Materials**

# **May 2016**



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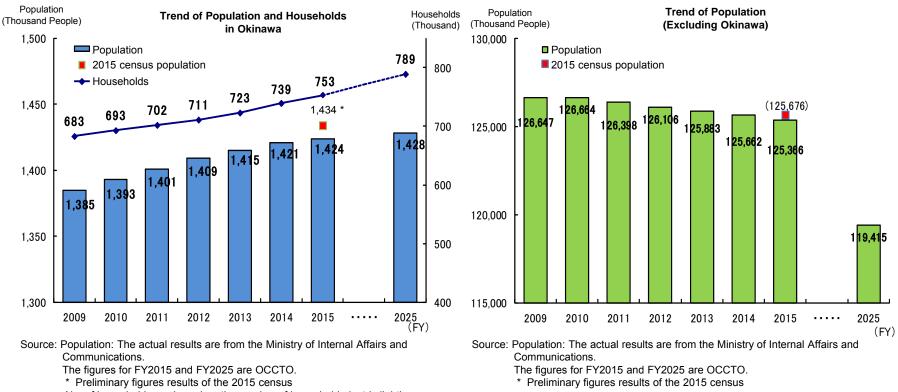
# Characteristics of the Business Bases

Item	Overview	Reference Page
Demand for Electric power	<ul> <li>Increasing demand 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.</li> <li>Potential demand due to large-scale urban development projects</li> </ul>	2~5 6 7
Competition	<ul> <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>New power companies plan to supply electricity, but excess power resources are limited.</li> </ul>	8
Electric Power Generation Facilities	<ul> <li>A high reserve supply capacity is required due to an isolated system</li> <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> </ul>	9~11
Fuel	◆ Having introduced LNG, OEPC now provides total energy services.	12~13
Remote Islands	<ul> <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>	14~16
Renewable Energy	<ul> <li>Reducing fuel consumption and cost is highly effective on remote islands, where fuel unit price is high.</li> <li>Since the system in the main island of Okinawa is small and independent, the limit of connection volume is likely to occur when using renewable energy.</li> </ul>	17~18



# Okinawa Prefecture Demographics (1/2)

Okinawa Prefecture is witnessing an increase in its population, while nationwide population is declining. The prefecture expects the moderate upward trend would continue.



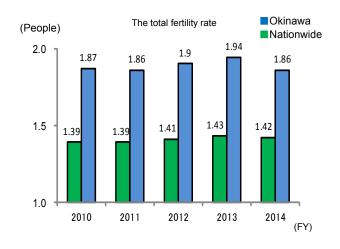
No. of households are based on the number of household electric lighting (actual results and estimate)

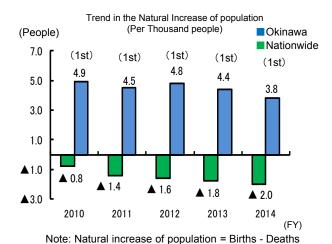
Due to the stability growth of household numbers in association with the increasing population, residential demand increases are expected.



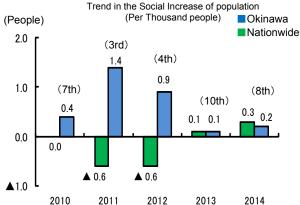
# Okinawa Prefecture Demographics (2/2)

- The total fertility rate of Okinawa Prefecture in FY2014 was 1.86, the highest among all the prefectures in Japan (nationwide: 1.42).
- The population of Okinawa Prefecture in FY2014 is on a favorable trend, with the number of natural population growth per 1,000 people being 3.8 persons, which is the highest nationwide, and the number of social population growth per 1,000 people being 0.2 persons, which is the eighth highest nationwide.
- Growth of population in the prefecture significantly exceeds the national average of -1.7 person, with 4.0 persons per 1,000 people.



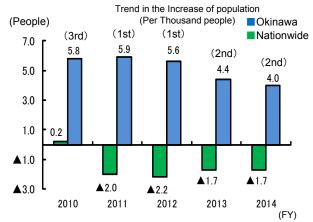


Source:Bureau of Statistics, Ministry of Internal Affairs and Communications



Note:Social increase of population = Incoming population - Outgoing population

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



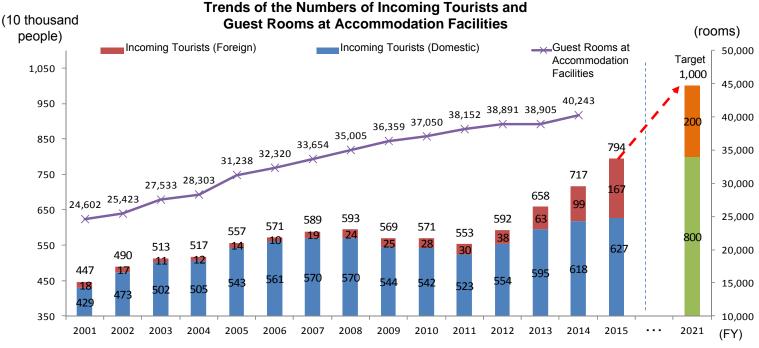
Note: Population increase = natural increase in population + increase/decrease of population in the society



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# Number of incoming tourists (1/2)

- The number of incoming tourists in FY2014: 7.17 million people (Growth rate of 9.0% year-on-year)
- The number of incoming tourists in FY2015: 7.94 million people (Growth rate of 10.7% year-on-year)



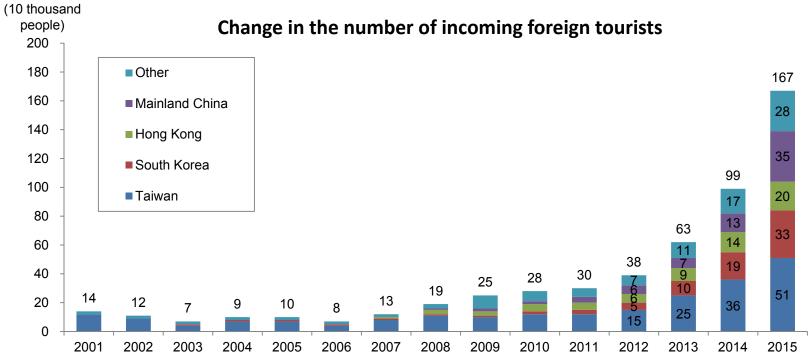
Source: "Tourism Guidebook", "Summary Statistics on Incoming Tourists to Okinawa, FY2015", "2014 Accommodations Fact - finding Survey Result" and "Okinawa Tourism Promotion Roadmap (revised edition, March 2016) published by Okinawa Prefectural Government

With the number of tourism related facilities (hotels, etc.) increasing in association with increased numbers of incoming tourists, increases are forecast for demand.



# Number of incoming tourists (2/2)

- The number of incoming foreign tourists in FY2014: 0.99 million people (Growth rate of 57.1% year-on-year)
- The number of incoming foreign tourists in FY2015: 1.67 million people (Growth rate of 69.4% year-on-year)



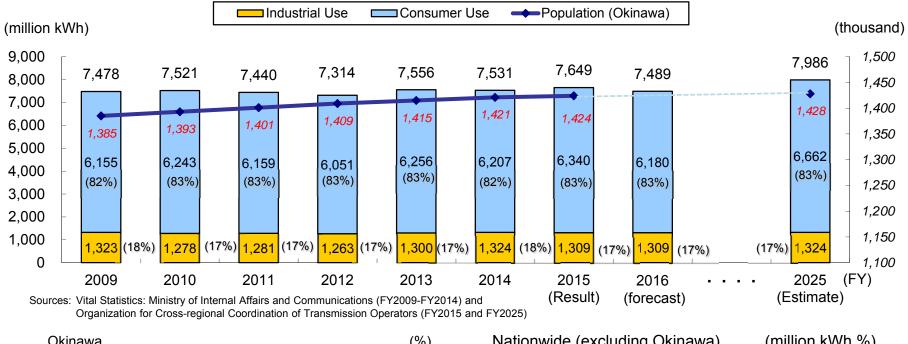
Note: The numbers between 2001 and 2008 are based on the calendar year, and those after 2009 are based on the fiscal year. Source: Tourism Guidebook published by Okinawa Prefectural Government

Tourism still remains strong due to the continuing increase in the number of tourist arrivals from Taiwan, South Korea, mainland China, and Hong Kong.



# Demand for Electric power

■ Stable growth is forecasted for demand for electric power, centering on increased demand for consumer use accompanying population increases.



Okinawa	(%)
---------	-----

Annual average	ge growth rate	2004-2014	2014-2025				
Demand for	Consumer Use	0.5 (0.6)	0.6 (0.7)				
Electric power	Industrial Use	0.1 (0.1)	0.0 (0.0)				
To	tal	0.5 (0.5)	0.5 (0.6)				

Note: The figures in the parentheses indicate post temperature correction.

Hationwide (excit	iding Okinawa)	(1111111011110111,70)
2004	2014	2004-2014 Annual average growth rate
858,235	815,467	Δ0.5

Source: The Federation of Electric Power Companies of Japan



# Large-Scale Urban Development Projects

■ In Okinawa Prefecture, a series of large-scale development projects are planned, which take advantage of former base sites. These will generate new energy demand.

	Project	Area	Scheduled open year	Outline
1	around Tedako-uranishi station Smart City development project (Urasoe-shi)	Approx. 20ha	FY2019	➤ Development around Tedako-uranishi monorail station
2	Large-scale MICE project (Yonabaru-cho, Nishihara-cho)	Approx. 14ha	FY2020	<ul> <li>Overall development including Meetings, incentives, conferences, and exhibitions (MICE) facilities and accommodations by the prefecture</li> </ul>
3	Nishi-futenma residential area Former base site utilization project (Ginowan-shi)	Approx. 46ha	Development starts in FY2018	<ul> <li>Planning of "international medical base zone", "residential zone", etc.</li> <li>Ryukyu University Hospital plans to move to the international medical base zone (FY2023).</li> </ul>
4	Urasoe west coast development project (Urasoe-shi)	Approx. 200ha	FY2018	<ul> <li>Development of large-scale commercial complex</li> <li>The project may have the second and third phases in future.</li> </ul>

# Impacts of Full liberalization of the Electricity Retail Market

- The electricity retail market was fully liberalized in April 2016.
- As a voluntary initiative, Okinawa Electric Power began cutting 10,000 kW out of the supply capacity of the Ishikawa thermal power station of Electric Power Development Co., Ltd. for delivery to the market to make it available to new entrants in April 2016.
- Switching: 0 cases (as of May 6, 2016) Source:Organization for Cross-regional Coordination of Transmission Operators, Japan

#### According to news reports,

- O ITOCHU Corporation: ITOCHU Corporation develops a retail electricity business to hotels and supermarkets, and other large industrial consumers.
- O Okinawa Gas New Power Company: Scheduled to start supplying electricity in October 2016 using mainly renewable energy power sources. (This company is a joint venture of eREX Co., Ltd. and Okinawa Gas Co., Ltd.)
- O Okinawa CO2 Reduction Promotion Council:

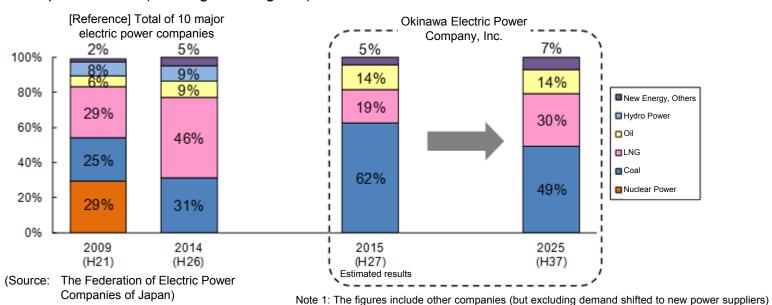
  Plans to sell electricity to households using power supplied from solar power generation facilities.



# 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, our first plant using LNG.

#### Electric Power Composition Ratio(Power generating end)



Note 2: The figures include both the main land and remote islands.



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# Power Generation Facilities (Yoshinoura LNG Thermal Power Plant)

- OEPC constructed its 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.
- Generator No.1 started commercial operation in November 2012 and Generator No.2 started commercial operation in May 2013.
- Yoshinoura Multi Gas Turbine Power Plant started commercial operation in March 2015 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]

[	Tano i ovioi i iaire	_					
Name	Yoshinoura Thermal Power Plant		Yoshinoura Multi-Gas Turbine Power Plant				
Location	Nakag	usuku-son,	Okinawa Prefecture				
Power generation capacity	251,000kW × 2 power ger	erators	35,000 kW × 1 plant				
Fuel	Liquefied natural gas (LNC	<b>3</b> )	LNG, kerosene, bio-ethanol (The normal fuel to be used is LNG.)				
Storage facilities		140,000kl	I × 2 stations				
Start of commercial operation	Generator No.1:Novembe Generator No.2:May 23, 2	<i>'</i>	March 20, 2015				
Fuel procurement	Contractor: Contract period: Contracted quantity: Terms of delivery:	27 years fr Gorgon Pr About 400	ras Co., Ltd.  from FY2012 (main source of supply:  Project in Australia)  0,000 t/year  on ship's arrival (EX-Ship)				







# Power Generation Facilities (Reserve Capacity)

#### Demand-supply balance of maximum electric power (August)

(Unit: Thousand kW, %)

	2015 (Results)	2020	2025
Supply capacity	2,075	2,043	2,103
Peak load	1,395	1,441	1,477
Reserve supply capacity	680	602	626
Reserve supply rate	48.7	41.8	42.4

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: Discrepancies in number calculations are due to round-off errors.

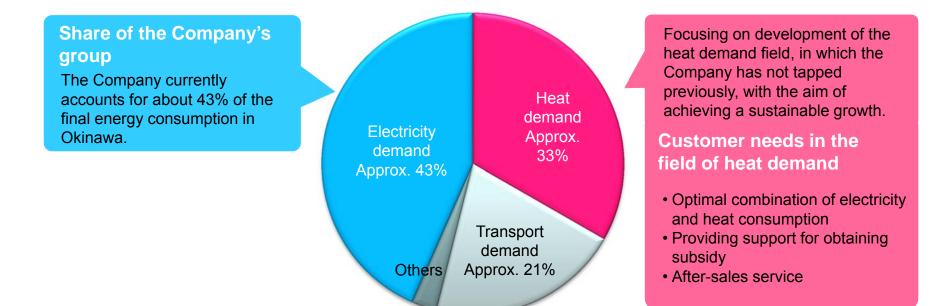
- A high generation reserve margin is necessary because of OEPC's isolated system and the responsibility to provide stable supply as a public utility..
- The equivalent reserve capacity of the largest unit is secured so that it is possible to provide stable supply even if the largest unit breaks down.
- Launching the operation of Yoshinoura Thermal Power Plant would ensure longterm and stable supply.

# Development of Total Energy Services (1/2)

#### Status of final energy usage and customer needs in Okinawa Prefecture

■ Promoting provision of Total Energy Services to customers, including factories, hotels, hospitals and large-scale shopping centers, which have high heat consumption, as the only total energy supplier providing both electricity and gas in Okinawa.

[Status of final energy usage in Okinawa]

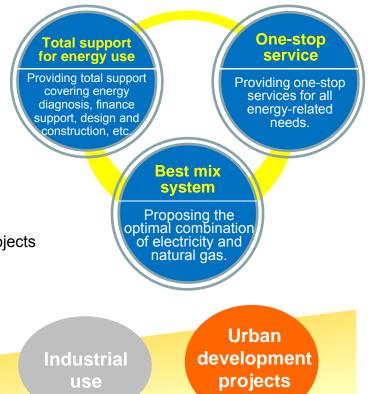


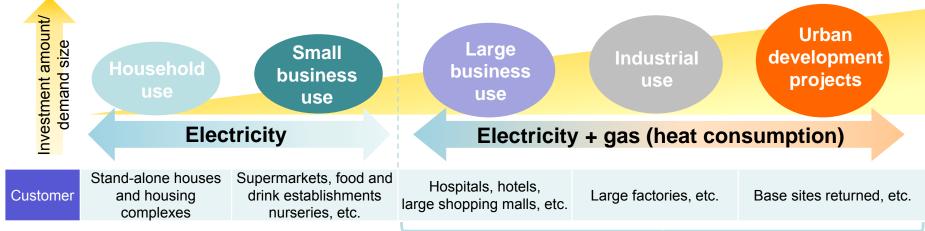
Source:We created based on "Prefecture energy consumption statistics survey" published by Agency for Natural Resources and Energy



# Development of Total Energy Services (2/2)

- The OEPC Group has been promoting the initiatives for the Total Energy Services, focusing on three core services:
  - 1) Total support for energy use,
  - 2) Proposal of best mix system,
  - 3) One-stop services.
- The OEPC Group aims to expand sales of electricity and gas by accurately identifying customer needs and generating synergy effects of electricity and gas.
- Focus on the following initiatives based on the power and gas system reform
  - Promoting ESP business
  - Efforts in the energy sector to the large-scale urban development projects
  - Expand sales by the gas pipeline supply business and LNG supply business by tank lorry





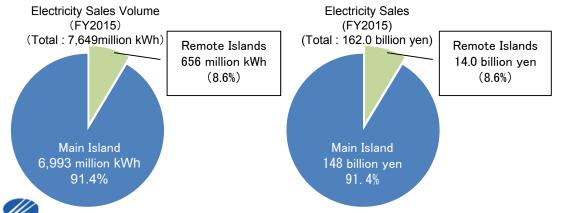


strengthen these domain through total energy services

# 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.





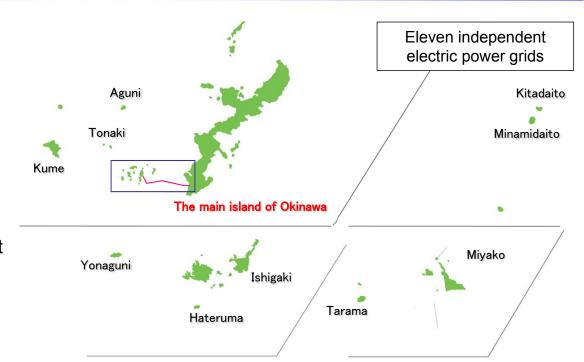
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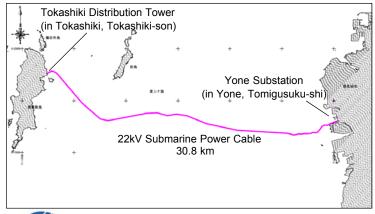
(Efforts to improve remote island income and expenditure)

- Reducing fuel consumption by introducing renewable energies (Retractable wind power generators, etc.)
- Effective utilization of waste oil
- Reducing the fuel consumption rate by introducing high-efficiency units
- Interconnecting Tokashiki Island and Main Island with submarine power cables

# Remote Islands (Submarine Power Cable)

- In March 2016, OEPC started power transmission to remote islands from the main island system by interconnecting the main island and Kerama Islands with an submarine power cable.
- Cable points: Yone, Tomigusuku-shi and Tokashiki, Tokashiki-son
- Transmission voltage: 22kV
- Cable length: 30.8km (Japan's longest cable in 22kV-class)









[Cable laying work with a special barge]

[State of the submarine power cable]

# Remote Islands (Retractable Wind Power Generators)

#### Overview of retractable wind power generators

Major components: manufacturers (countries of manufacture)	Blade and nacelle: Vergnet (France) Tower: Progressive Energy(Japan)
Rated power output	245kW
Wind speed for power rating/start- up/stoppage	13m/s-13.5m/s / 4m/s / 20m/s-22m/s
Number of blades	Two
Diameter of blades	30m~32m
Height of hub	38m

#### ■ Characteristics and advantages

- Wind power generators can be retracted nearly 90 degrees so that damages by strong winds from typhoons can be avoided by retracting them.
- Wind power generators do not need large-size cranes to construct and can be constructed on 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.



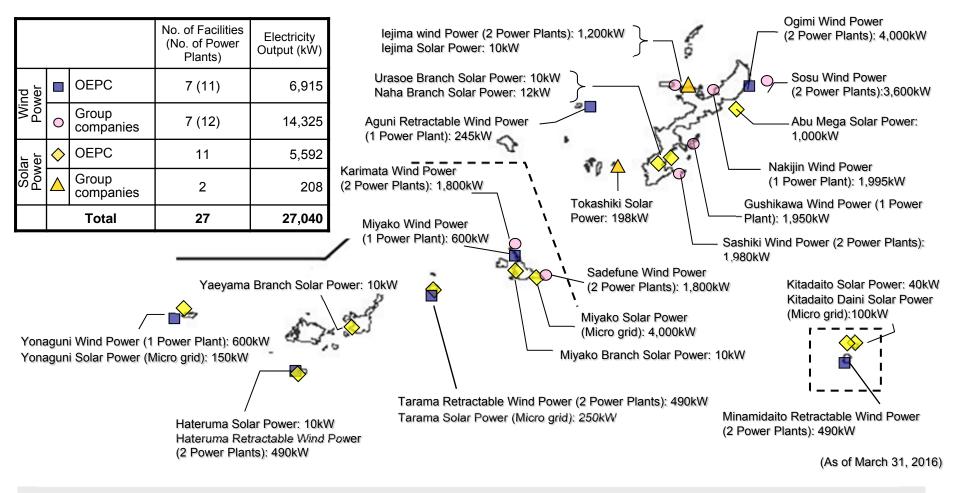




Location	plants
Hateruma	2
Minamidaito	2
Aguni	1
Tarama	2
Total	7

# Status of Wind and Solar Power Electricity Generation Facilities

#### ■ List of OEPC Group's New Energy Facilities



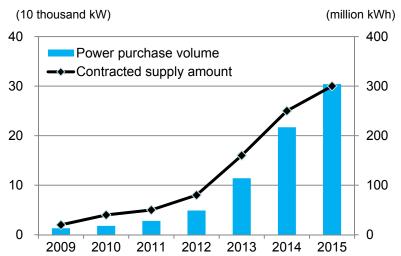
■ OEPC Group has new energy facilities with total output of 27,040kW (wind power: 21,240kW, solar power: 5,800kW). (as of March 31, 2016)



# Connection Volume of Renewable Energies

- Since the system in the main island of Okinawa is small and independent, the limit of connection volume is likely to occur when using renewable energy.
- It has been determined that, in the case where the output control system using communication technology shall become feasible, the output control limit for 30 days, etc.\*¹ shall be 495MW (due to the restriction of lowering cost of generators) on the condition that they shall perform the output control up to 360 hours a year with no compensation.
- As for the possible volume of interconnection on remote islands, we have announced the connection volume as of the end of each month at our website.
- On the condition that stable supply is ensured, OEPC will keep on working for interconnection and further expansion of renewable energy.
- \*1 The connection volume when any additional acceptance becomes impossible, unless the electricity company performs output control beyond the upper limit of (solar power) output control for 360 hours or 30 days.

#### [Purchase of solar power]



		2009	2010	2011	2012	2013	2014	2015
No. of	Main Island	5.5	7.5	10.2	13.4	18.8	22.1	23.7
purchases (Thousand cases)	Remote Islands	0.2	0.4	0.8	1.4	2.1	2.5	2.5
	Total	5.8	7.9	11.0	14.8	20.9	24.6	26.2
Contracted	Main Island	2.3	3.3	4.8	6.8	14.3	21.5	26.5
supply amount (10 Thousand	Remote Islands	α	0.2	0.5	0.9	2.0	3.1	3.4
kW)	Total	2.4	3.5	5.3	7.7	16.2	24.6	29.9
Power	Main Island	12.2	16.4	25.6	43.2	99.4	188.9	267.6
purchase volume	Remote Islands	0.4	1.1	2.2	5.8	14.3	28.2	36.7
(Million kWh)	Total	12.6	17.5	27.8	49.0	113.7	217.1	304.3

- \* As each unit is rounded off to the second decimal place, the total amount does not exactly agree to the sum of each amount.
- \* The "Feed-in Tariff System for Renewable Energy" started in July 2012.



# **Q & A**



## 1

#### **Current Status and Future Forecast of Okinawa's Economy**

#### The current state

The prefectural economy has expanded, as a whole, with private consumption and tourism-related businesses staying firm and public investment in construction-related businesses being resilient.

Trends in Main Economic Indicators of Okinawa Prefecture (Year-on-Year Comparison), FY2014-FY2015

(%)

To die at any	FY:								2014						FY2015											
Indicators	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	FY	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	FY
Sales by large-scale retailers	1.8	4.7	4.8	11.1	7.5	10.7	2.1	2.9	1.2	2.3	3.5	-5.3	3.8	13.9	10.2	6.5	2.3	5.9	5.5	13.0	6.4	6.3	11.2	13.0	6.1	8.1
No. of new car sold	-4.6	2.1	8.1	-8.2	-3.6	11.1	-2.3	5.9	21.5	-13.6	-1.4	-1.4	0.8	1.3	-9.1	-10.7	15.5	-2.1	-6.6	-6.1	-13.1	-11.4	-3.8	0.5	-9.6	-4.4
Wholesale shipments of household appliance	-8.7	-15.3	-14.2	-9.6	-16.1	-9.7	-20.8	-26.9	-20.1	-29.1	-29.6	-20.6	-18.5	-2.4	-7.6	13.5	-4.1	-6.6	2.4	13.8	-2.0	7.6	9.8	2.3	-4.1	1.6
Value of public works contracts	41.3	83.2	-2.8	18.5	2.4	35.8	-11.8	-11.9	36.8	-28.4	17.1	151.7	23.3	-47.8	-37.9	74.0	-28.3	0.8	-2.1	74.7	-15.4	-16.8	-15.0	76.4	-24.7	0.2
No. of inbound tourists	9.5	17.5	13.9	12.0	3.9	8.4	7.9	9.9	6.5	7.1	9.5	4.6	9.0	12.3	8.9	9.5	9.2	8.8	10.0	18.9	9.8	11.7	9.7	13.0	7.6	10.7
New residential construction starts	36.2	25.0	34.1	-34.0	-5.3	-35.4	-35.6	-35.8	-4.8	10.9	3.1	-36.4	-12.5	-17.3	12.4	27.7	16.2	19.0	17.4	9.8	7.4	-4.5	15.7	-25.3	8.4	6.9
Total unemployment rate	-1.6	-1.1	0.3	-0.1	0.0	0.8	0.0	0.4	0.0	0.4	1.4	0.3	0.0	-0.8	-0.4	-0.1	-0.5	-1.6	-1.0	0.0	-1.0	0.5	-0.5	-1.9	-1.0	-0.6

Note 1: The figures for 'Sales by large-scale retailers' are calculated from the values given in preliminary figures for March 2016 on an all-store base.

#### ■ Prospect

Regarding the outlook, the prefectural economy is expected to continue to expand, with private consumption, tourism-related businesses, and construction-related businesses all staying firm, etc.



Note 2: The figures for 'Wholesale shipments of household appliance' are an estimate.

Note 3: The figures for 'Total unemployment rates' are raw data, and points of change of Year-on-Year are listed.

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

#### **Economic Growth of Okinawa Prefecture under the Okinawa Promotion Plan**

- The "Okinawa Promotion Plan" was implemented during the period from FY2002 to the end of FY2011. During the period, the prefecture's GDP posted an average increase of roughly 1.9% per annum, outpacing the nationwide average.
- 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 expects the steady growth of its economy and an increase in demand for electric power.

#### Average annual growth rate of the prefecture and gross domestic product

(billion yen)

	FY2002	FY2011	Annual Average Growth Rate FY2002-2011	FY2012	FY2013	FY2014
Prefectural GDP	3,519.4	4,184.7	Approx. 1.9%	-0.2% 4,176.4	4.5% 4,364.7	-1.5% 4,299.5
National GDP	479,870.8	514,695.1	Approx. 0.8%	0.9% 519,547.2	2.0% 529,796.2	-1.0% 524,687.5

Sources: "Prefectural Accounts for FY 2013" and "Economic Outlook for FY 2016", Okinawa Prefecture, "Preliminary Quarterly Estimates of

 $\label{eq:GDP} \textit{GDP"} for Oct. - Dec.\ 2015, Economic\ and\ Social\ Research\ Institute,\ Cabinet\ Office.$ 

Prefectural and National GDPs for FY 2014 are estimates. Figures in parentheses for FY 2012, FY 2013 and FY 2014 are growth rates

on a YoY 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.

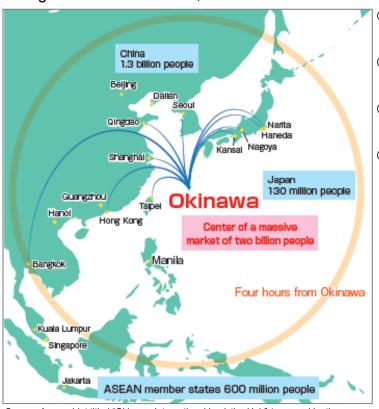
Through the implementation of various measures that are developed based on this plan to take advantage of regional characteristics of Okinawa Prefecture, gross production in Okinawa in FY2020 is estimated to increase about 1.4 times compared with that in FY2010 to 5,100 billion yen.



Note:

#### **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.



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)

- 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.
- O Quick transportation through 24-hour customs clearance system.



\* From October 2009, the cargo hub project was launched by ANA. Source: Land, Infrastructure and Transportation Ministry



## 4 Stages for Establishing Okinawa Prefecture's International Logistics Hub

#### Stage1

- (1) ANA International Cargo Hub(started in October 2009)
- (2) Special International Logistics Zone (Zone for concentration of International Logistics Industry, founded in April 2012)
- (3) Building the Infrastructure for Inbound Businesses (i.e. Logistics Center, etc.)
- (4) Expanding Exports of Local Okinawan Products.

#### Stage2

- (1) Increasing Aerial and Maritime Routes
- (2) Expansion the Special International Logistics Zone

[The initiatives Okinawa Prefecture is currently

addressing]

- (3) Progressing as a Hub for Exporting Domestic Specialty Goods
- (4) Logistics Hub for Forwarders (Freight forwarding business).
- (5) Warehouse for E-commerce and Online Shopping
- (6) Center for Emergency Replacement Parts

#### Stage3

- (1) Become a Hub for Distribution, Storage, Exhibitions, and Third-party logistics.
- (2) Become a Logistics Hub for International Manufacturers
- (3) Add s second Runway to Naha Airport [the end of March 2020].
- (4) Strengthen Networks by Welcoming Aerial and Maritime Businesses



- Linkage between Naha Airport and Naha Port (Sea & Air)
  Developing the transport of "Sea & Air" through creating a
  linkage between maritime transport and air transport whose
  logistics bases are closely located.
  Aiming to accumulate the industries at the areas peripheral to
  airport and harbor through the logistics environment.
- Okinawa aims to create clusters of aircraft maintenancerelated businesses making use of its geographical advantage of being close to other Asian countries.
- MRO Japan Co., Ltd. plans to launch its aircraft maintenance business in Okinawa in the second half of 2017.

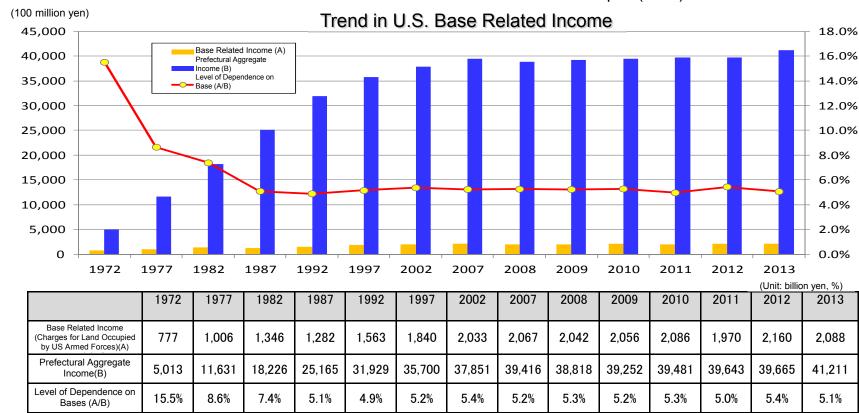


The Okinawa Electric Power Company, Inc.

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

#### 1 U.S. Base Related Income

- U.S. Base related income has become an income source that supports the Okinawa economy.
- However, the level of dependence on the bases has been falling as the prefectural economy expands, and it had fallen to 5.1% in FY2013 from the 15.5% share at the time Okinawa was returned to Japan (1972).



#### Sources:

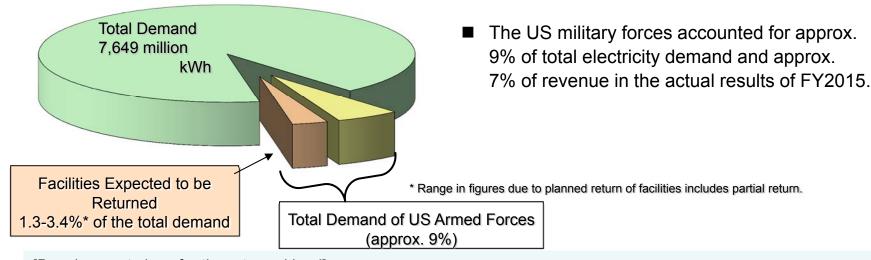
O From 2002: "Prefectural Accounts March 2016" released by the Department of Planning, the Okinawa Prefecture



Until 1997: "US Forces and SDF Bases in Okinawa (Statistics) March 2015", released by the Military Base Affairs Division, Executive Office of the Governor, Okinawa Prefecture

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

## **Electricity Demand from the U.S. Military Bases in Okinawa**



[Development plans for the returned land]

- The site of the Awase Meadows Golf Course, which was used by the US military personnel, was returned to Japan in July 2010. After that, a new town development project was planned, and a resort shopping mall (opened in April 2015), a base for disaster medical care (opened in April 2016), and other facilities have been constructed. A land readjustment project is also in progress to build residential areas.
- In addition, approx. 51 hectares of land that were part of the "West Futenma Housing Area" at Camp Zukeran were returned to Japan on March 31, 2015, and the plans for the military base reuse such as an international medical center, improvement for parks, and others were determined on July 24, 2015.

If the US military facilities are returned, demand is expected to decrease temporarily. However, demand will subsequently increase on the strength of revitalization of the local economy following redevelopment of the US military facilities sites.



# 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		230.984km <sup>2</sup>		
lər	On Base	35,657		
No. of Personnel	Off Base	16,435		
N Pe	Total	52,092		

\* The figures for No. of facilities and Area are as of the end of March 2014. Those for No. of Personnel are as of the end of March 2013.

#### <Reference>

No. of employees working for the U.S. Armed Forces in Okinawa: 8, 868

\* As of the end of March 2014.

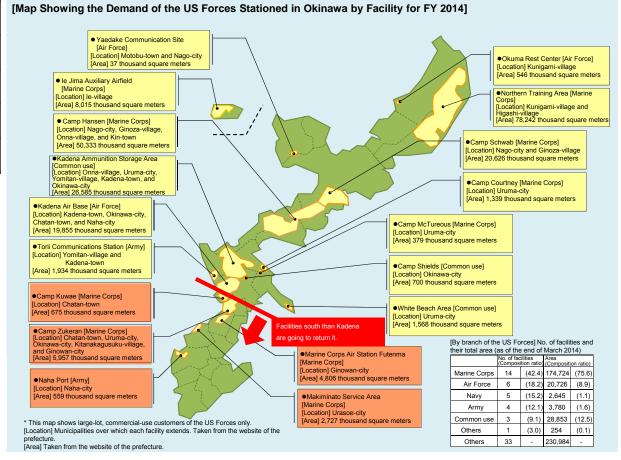
Sources: "No. of US Military Personnel in

Japan, etc.

Living inside/outside of Facilities/Areas by

City/Town/Village", Japan Ministry of Defense "US Forces and SDF Bases in Okinawa March 2015", Military Base Affairs Division, Executive Office of the Governor, Okinawa

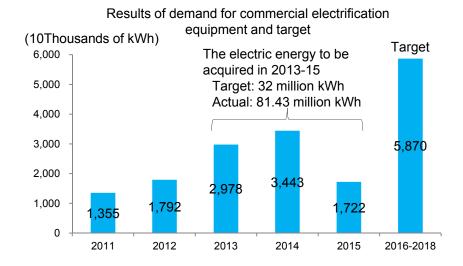
Prefecture





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

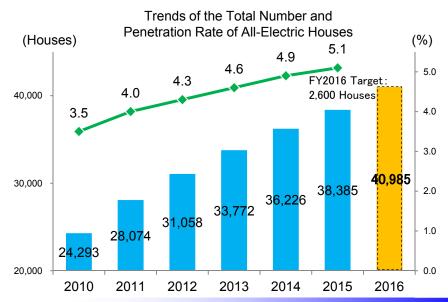
- Approach for sales promotion in the corporate sector
  - (1) Offering customers comprehensive proposals for electrification (air-conditioning systems, kitchens, and water heaters) appropriate for their power usage.
  - (2) Promotion of highly efficient heat-pump appliances (i.e. air-conditioning systems and water heaters)
  - (3) Strengthening of cooperation with sub-users including manufacturers, contractors, design offices, etc.
  - (4) Utilization of public subsidy system, etc.



- Approach for the promotion and growth in the household sector
  - (1) Launching effective promotion activities to seek safety, comfortability, cleanness and economic efficiency of all electrification housing brand.
  - (2) Strengthening cooperation with sub-users
- The ratio of all-electric houses to newly built houses in FY2015

Stand-alone houses: 41.8%

Complex:1.4%





## Q4. What are the efforts to fuel cost reduction?

#### ■ Efforts to reduce fuel costs

Diversifying fuel supply sources through spot purchase of fuel and fuel cost reductions

Stable procurement through long-term LNG supply contracts

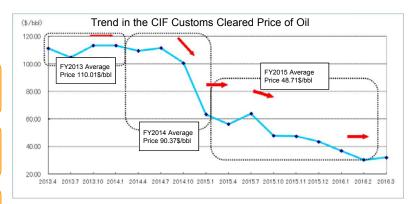
Long-term contracts on coal and transport ships

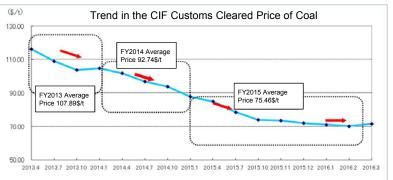
shift to short-distance sources

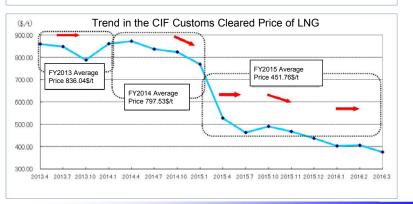
Efficient use of the "Shinryo-maru" and COA (contract of affreightment)

Expansion of the introduction of sub-bituminous coal, which has a low environmental burden

Achieving stable fuel supply and pursuing cost reductions









# Q5. What are the efforts to reduce CO2 emissions?

- Introducing hydro or nuclear power is difficult in Okinawa Prefecture due to reasons including the region's geological and geographic characteristics and constraints on the scale of demand ⇒ Dependency on fossil fuels (oil, coal, etc.)
- OEPC belongs to the Electricity Business Council for a Low-Carbon Society and commits itself to CO<sub>2</sub> emissions reductions to meet the targets of the Action Plan of the Society.



- Stable operation of Yoshinoura Thermal Power Plants, which are fueled by LNG with low CO<sub>2</sub> emissions (Plant No.1 starts operations in November 2012, and No. 2 in May 2013).
- Use of renewable energy harnessing solar power, wind power and small hydro power generation
- Application of mixed combustion of woody biomass fuel to Gushikawa (coal-fired) Thermal Power Plant
- Implementation of operation tests toward stable operation of solar and wind power generation
- Maintenance of heat efficiency of thermal power plants
- Provision of energy-saving and CO<sub>2</sub> saving services (introduction of eco-friendly household bookkeeping and proposal of EcoCute and other electric appliances)
- Collection of information about carbon capture and storage (CCS) technologies

(References) Actual CO<sub>2</sub> emission coefficient for FY2014: 0.816kg-CO<sub>2</sub>/kWh
Actual CO<sub>2</sub> emission coefficient for FY2015: 0.81kg-CO<sub>2</sub>/kWh (provisional figure)

\* The Japanese Government aims to realize energy mix by taking advantage of sophisticated methods of energy supply structures (procurement of electricity sources by retail electricity suppliers) and energy-saving methods (improvement of efficiency of thermal power generation).



# Q6. What are the CO<sub>2</sub> Emission Volumes by Fuel Type?

■ LNG (Liquefied Natural Gas) produces less carbon dioxide, a major cause of global warming, than coal or oil.

Chart: Comparison of CO<sub>2</sub> Emission Volumes by Fuel Type

	*1 CO <sub>2</sub> Emission			*2			
Fuel Type	Volume Per Unit Heat Value [g-CO <sub>2</sub> /MJ]	vs. Coal	vs. Oil	CO <sub>2</sub> Emission Volume Per kWh [kg-CO <sub>2</sub> /kWh]	vs. Coal	vs. Oil	
Coal	90.6	1.00	1.27	0.84	1.00	1.20	
Oil *3	71.5	0.79	1.00	0.70	0.83	1.00	
LNG	49.5	0.55	0.69	0.37	0.44	0.53	

<sup>\*1</sup> The values from the Law Concerning the Promotion of the Measures to Cope with Global Warming were used as the CO<sub>2</sub> emission factors to calculate g-CO<sub>2</sub>/MJ.

<sup>\*3</sup> Oil comparisons were based on type C heavy oil.



<sup>\*2</sup> Thermal Efficiency at Generation End are calculated based on OEPC's actual data for FY2014.

# Q7. The Fuel Cost Adjustment System(1/2)

#### **Summary of the 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.

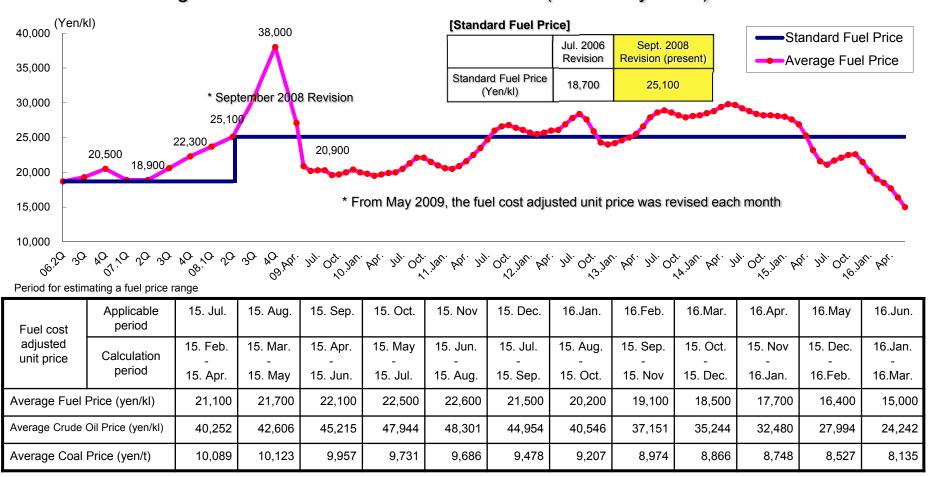
#### Conceptual drawing of the fuel cost adjustment system

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. 3-month average fuel 2-month time-lag Jan. Feb. Nov. Dec. Mar. Apr. May Jun. Fuel price Official announcement of trade Fuel cost will be adjusted Fuel cost adjustment each month. \* Electricity charge for May will be applied to the electricity use starting as early as April 1.



# Q7. The Fuel Cost Adjustment System(2/2)

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



#### [Method of calculating Average Fuel Price]

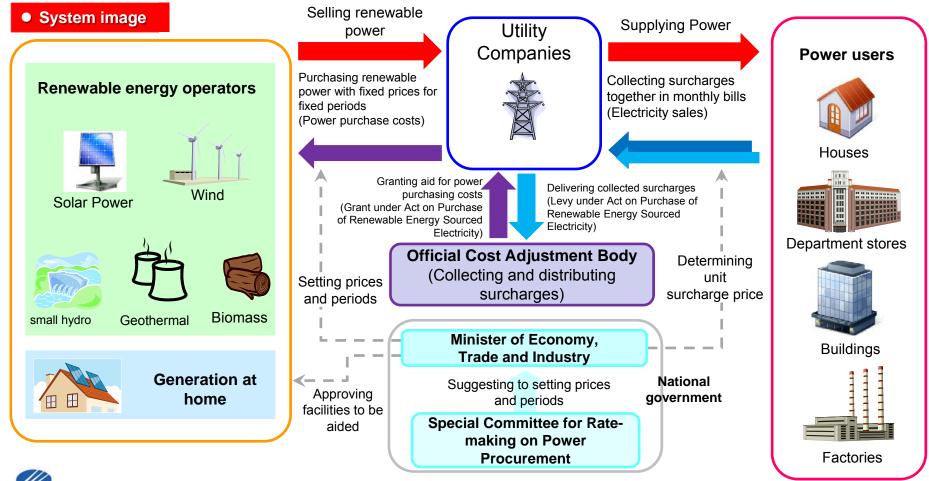
Average Fuel Price =  $A \times \alpha + B \times \beta$  A: Average crude oil price per kiloliter in each quarter B: Average coal price per ton in each quarter

<sup>\*</sup> α and β are coefficients in Provisions of supply to calculate the average fuel price. (Reference α: 0.2410, β: 1.1282 Provisions of supply Sept. 2008 effective)



# Q8. Feed-in Tariff System of renewable Energy

- The feed-in tariff system of renewable energies was enforced in July 2012
- In this scheme, electric utilities are obliged to purchase electricity generated from renewable energy sources at a fixed price for a specified period set by the government, and purchase cost of electricity will be paid by electricity customers as surcharge together with electricity charge.



# Q9. Electricity System Reform

- O In April 2013, the Cabinet decided to approve the Policy on Electricity System Reform that set the direction for the full retail competition and the unbundling the transmission / distribution sector.
- O Based on this policy, the Cabinet decided to approve the Bill for the Act for Partial Revision of the Electricity Business Act in November 2013. The Policy also mentions that the reform focusing on these three pillars will be implemented by dividing it into three phases, while thoroughly studying the challenges to be overcome at each phase and taking necessary measures based on the results of the study, so as to advance the reform effectively. This act also sets forth that "measures based on the special nature of the electric power business in the Okinawa region" will be implemented for Okinawa.
- O The full retail Competition is scheduled to be implemented in all of Japan including Okinawa Prefecture in accordance with the "Act for Partial Revision of the Electricity Business Act, etc." (enacted in June 2014) which related to the second stage of the Electricity System Reform.
- O As a voluntary action, OEPC started to voluntarily release power of 10,000kW supplied from Ishikawa Coal-Fired Thermal Power Plant of J-Power in April 2016 for the purpose of cooperating establishment of a competitive environment in Okinawa area.
- O The OEPC is exempt from the treatment of the legal unbundling which aims at further securing of neutrality of the transmission/ distribution sector. Specifically, if the OEPC is approved as the "Approved general power transmission and distribution operator" which can operate power retail business and power generation business in accordance with the "Act for Partial Revision of the Electricity Business Act, etc." which passed through the House of Councillors and was enacted as of June 17, 2015, we can continue maintaining the integrated system for power transmission and distribution.

# Purpose of electricity system reform 1. Securing a stable

- Securing a stable supply
- 2. Suppressing electricity rates to the maximum extent possible
- Expanding choices for consumers and business opportunities

# Main system reforms Expanding nationwide system operation Full retail liberalization Neutralizing the power transmission/distribution sector

#### Reform program

Details	Implementation date	Bill submission date
[1st stage] Establishment of the Organization for Cross-regional Coordination of Transmission Operators	Established on April 1, 2015	Passed on Nov. 13, 2013
[2nd stage] Full retail competition	Implemented on April 1, 2016	Passed on Jun. 11, 2014
[3rd stage] Further securing of neutrality of the transmission/distribution sector (legal unbundling) and full liberalization of retail electricity rates	To be implemented on Apr. 1, 2020	Passed on Jun. 17, 2015



# Q10. What are the Special Tax Measures?

#### **Currently Applied Special Tax Measures**

 Preferential Measure for Standard Taxable Values Relating to Fixed Property Tax

Basic Law: Supplementary Provisions of the Local Tax Law (Article 15.5)

Details: Alleviation to 2/3 of Standard Taxable Values

Period: April 1, 1982 – March 31, 2020

(Extended for 5 years from April 1, 2015)

Exemption from the Oil and Coal Tax Relating to Specific Coal, etc. (Coal and LNG) Used for Power Generation in Okinawa

Basic Law: Special Measures Law for the Promotion of Okinawa (Article 65.2), Special Taxation Measures Law (Article 90.4.3.1)

Details: (1) Exemption from the Oil and Coal Tax for coal

(2) Exemption from the Oil and Coal Tax for LNG

Period: (1) October 1, 2003 – March 31, 2020 (Extended for 5 years from April 1, 2015)

(2) April 1, 2012 – March 31, 2020 (Extended for 5 years from April 1, 2015)

#### **Need for Special Treatment**

Special treatment is necessary for industrial development and improving the living standards of people in Okinawa Prefecture given that there has been no changes to the conditions of remote islands such as bearing of deficit arising from structural disadvantage.

#### 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 FY2015 was about 3.6 billion yen.
- The value of the alleviation measures for FY2016 is expected to be 4.0 billion yen.

The amount of reduction based on the special measures is reflected in electricity charge.



# Q11. Response to the Corporate Governance Code

#### 1. Action to comply with all the principles of Japan's Corporate Governance Code

Basic Policy on Corporate Governance, consisting of the following five items, has been established.

- (1) Securing the rights and equal treatment of shareholders
- (2) Appropriate cooperation with stakeholders
- (3) Ensuring appropriate information disclosure and transparency
- (4) Responsibilities of the board
- (5) Dialogue with shareholders, etc.

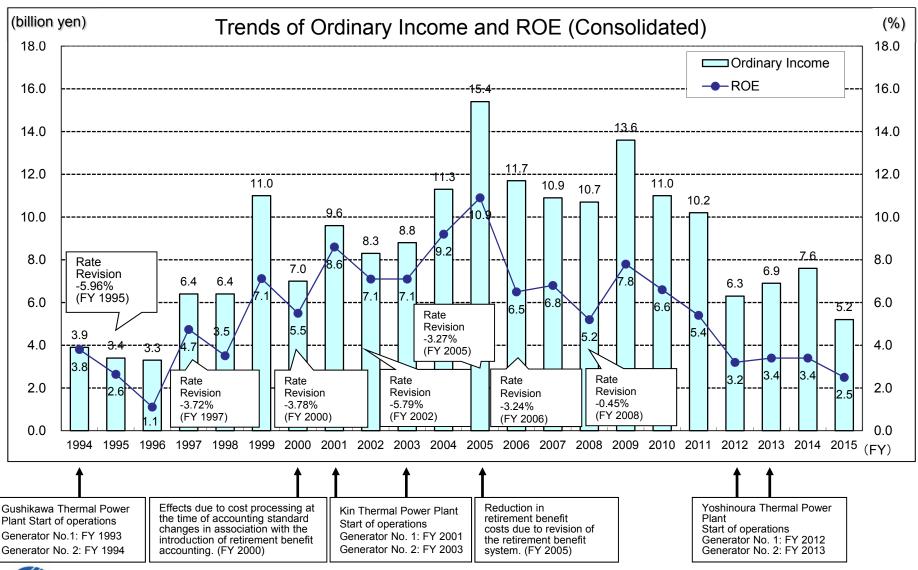
Five principles (four items) of the 73 principles of the Code were reported as "Explain" in the Corporate Governance Report submitted at the end of November 2015.

#### 2. Progress of compliance with the five principles (four items) reported as "Explain"

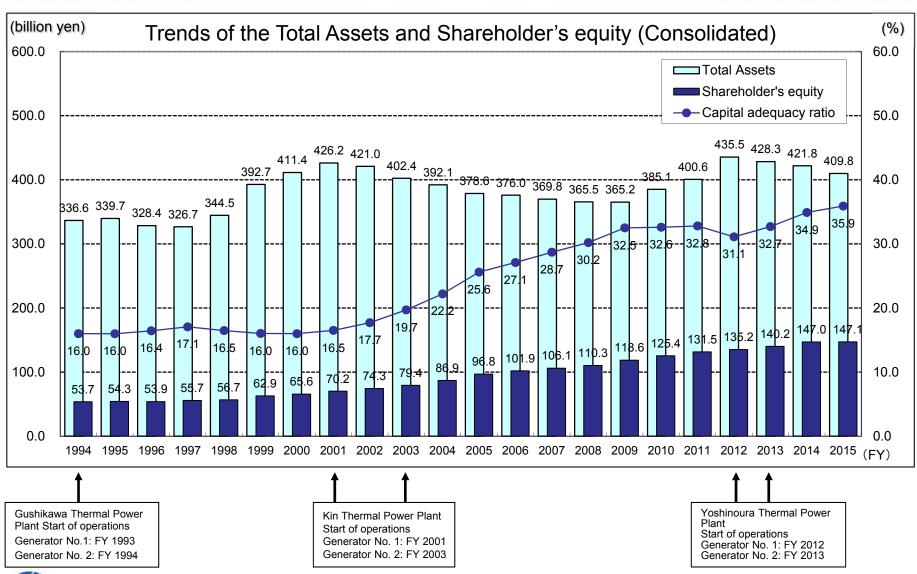
- (1) Providing English translations of convening notices of general shareholders' meetings (Supplementary Principle 1.2.4)
  - => To provide English translations of part of the convening notices starting from the annual general meeting of shareholders to be held on June 29, 2016.
- (2) Including incentives in the remuneration of management (Principle 4.2, Supplementary Principle 4.2.1)
  - => To work on this principle as an issue for examination in FY2016 and after.
- (3) Analyzing and evaluating the effectiveness of the board as a whole (Supplementary Principle 4.11.3)
  - => Conducted a questionnaire survey in April 2016, reported the survey result to the Board, and disclosed its outline in the Corporate Governance Report.
- (4) Establishing and disclosing business strategy and business plan (Principle 5.2)
  - => Disclosed the Okinawa Electric Group's Medium- to Long-term Growth Strategy on April 28, 2016.



# Reference 1: Trends of Ordinary Income and ROE

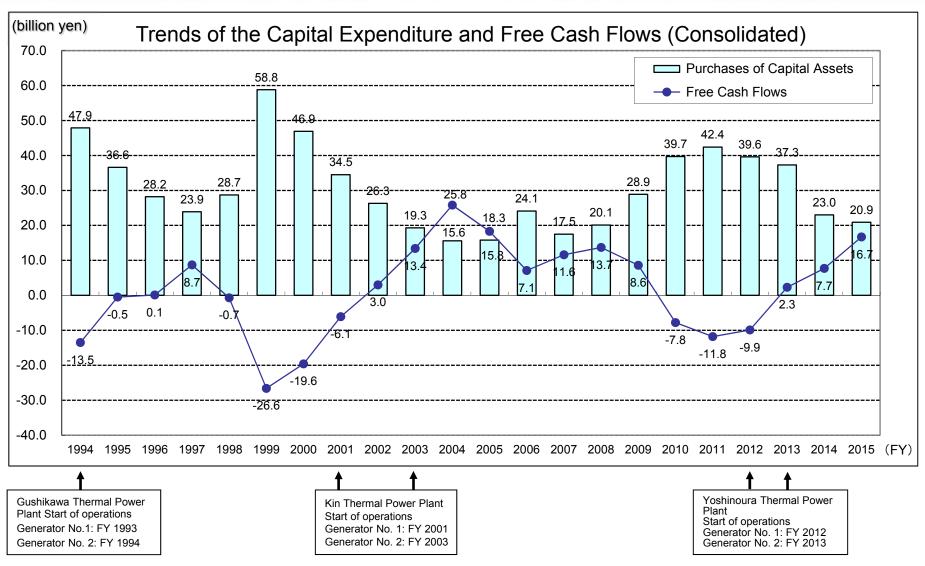


# Reference 2: Trends of the Total Assets and Shareholder's equity





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





<sup>\*</sup> 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 5, 2015 to March 31, 2016

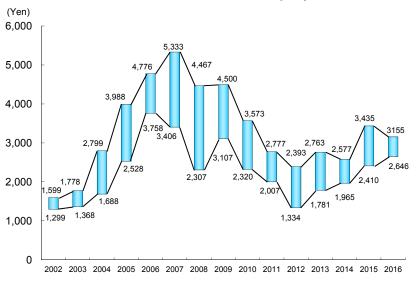
	Okinawa Electric Power Company, Inc.	Nikkei Average	
Stock price as of January 5, 2015 (closing price)	2,526 yen	17,409 yen	
All-time high (closing price)	3,405 yen (+34.8%) as of June 2, 2015	20,842 yen (+19.7%) as of July 21, 2015	
All-time low (closing price)	2,450 yen (-3.0%) as of January 6, 2015	14,953yen (-14.1%) as of February 12, 2016	
Stock price as of March 31, 2016 (closing price)	3,030 yen (+19.9%)	16,759 yen (-3.7%)	

(Note) The Company implemented a stock split of 1 to 1.5 effective June 1, 2015 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 5, 2015.

## 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 three times in the indicated period (Record date :End of March 2005, End of March 2007 and End of May 2015), and adjustment has been made for the figures before the end of May 2015.



# Reference 5: Earnings Per Share and Payout Ratio

#### Earnings per Share and Payout Ratio

FY		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Net income	Million yen	6,398	6,590	3,635	7,293	6,872	5,050	3,098	3,917	3,960	2,931
Earnings per Share	yen	402.25	376.84	207.89	417.26	393.36	289.08	177.35	224.21	226.72	111.88
Dividend per Share (Post-adjustment after stock split)	yen	60 (36)	60 (36)	60 (40)	60 (-)						
Payout Ratio	%	14.9	15.9	28.9	14.4	15.3	20.8	33.8	26.8	26.5	53.6
Dividend Yield	%	0.82	1.53	1.15	1.23	1.58	1.75	1.87	1.72	1.38	1.98
Price Book-value Ratio	х	1.18	0.66	0.87	0.76	0.56	0.49	0.45	0.48	0.57	0.59
Price Earning Ratio	х	18.3	10.4	25.2	11.7	9.7	11.8	18.1	15.6	19.2	27.1

<sup>\*</sup> Net Income and EPS is on a non-consolidated basis

Date	Issued number of shares of common stock	
1992.02.10	14,728,132	Listed
1995.11.20	14,875,413	Split 1:1.01
1999.05.25	15,172,921	Split 1:1.02
2005.05.20	15,931,567	Split 1:1.05
2007.04.01	17,524,723	Split 1:1.1
2015.06.01	26,287,084	Split 1:1.5



# Reference 6: Stock Split

#### 1. Purpose of stock split

Returning the profits to our shareholders and improving the liquidity of shares in OEPC

#### 2. Method of stock split

A 1.50-for-1 stock split

#### 3. Number of shares increasing as a result of the stock split

Total number of issued shares prior to the stock split	26,287,084 shares
Number of shares increasing as a result of the stock split	13,143,542 shares
Total number of issued shares after the stock split	39,430,626 shares

#### 4. Stock Split Calendar

the stock split

Record date:	May 31, 2016
Effective date:	June 1 2016

Total number of authorized shares after

#### <Reference: Trend in Stock Splits>

Date	Issued number of shares of common stock	Ratio			
Feb 10, 1992	14,728,132	Listed			
Nov. 20, 1995	14,875,413	1:1.01			
May 25, 1999	15,172,921	1:1.02			
May 20, 2005	15,931,567	1:1.05			
Apr. 1, 2007	17,524,723	1:1.10			
Jun. 1, 2015	26,287,084	1:1.50			
Jun. 1, 2016	39,430,626	1:1.50			

#### 5. Others

(1) Amendment of Articles of Incorporation

Total number of authorized shares: 45,000,000 to 67,500,000 shares

(2) Expected dividend for March 2017 End of 2nd quarter 30 yen per share End of term 30 yen per share

As the annual dividend of 60 yen is maintained, the total dividend will be practically increased.

67,500,000 shares



# Reference

- http://www.okiden.co.jp/english/index.html
   (The Okinawa Electric Power Company Incorporated)
- http://www.pref.okinawa.jp/english/index.html (Okinawa Prefecture)
- <a href="http://www.fepc.or.jp/english/index.html">http://www.fepc.or.jp/english/index.html</a> (The Federation of Electric Power Companies of Japan)
- http://criepi.denken.or.jp/en/ (Central Research Institute of Electric Power Industry)

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.

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