Management Overview

May 2023



The Okinawa Electric Power Company, Inc.

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Overview of Okinawa Prefecture



Basic Data

Population:	1,468,804
No. of Households	634,195
Area	2,282 km²
Climate	Subtropical / Oceanic
Location	26°12N 127°41E
Prefectural GDP	¥4,254.6billion
Tourism Revenue	¥292.4billion

- 160 islands scattered over a sea area lying about 1,000 kilometers east and west and about 400 kilometers north and south.
- \bigcirc Okinawa has attracted attention for its advantages and potentials.
 - •Geographical characteristics as being located in the center of East Asia.
 - •The highest birth rate in Japan.
 - •Rich nature and mild climate.
- \diamondsuit Making good use of such advantages and potentials, initiatives are underway
 - •Promotion of tourism.
 - ·Clustering of international logistics industry.

Population, No. of Households as of March 1, 2023 Area as of January 1, 2023 Prefectural GDP as of Estimated results FY 2021 Tourism Revenue as of Estimated results FY 2021

esults FY 2021 (Source: Okinawa Prefecture, Geographical Survey Institute)

Corporate Overview of OEPC

- The Okinawa Electric Power Company (OEPC) supplies electricity to 37 inhabited islands including Okinawa main island.
- OEPC maintains 11 isolated systems that are not connected with the transmission lines of other power companies.
- OEPC has no nuclear and hydroelectric power plants and depends on fossil fuels for its power supply.

Established	May 15, 1072	Security code	9511
Established	May 13, 1972	Service area	Okinawa Prefecture
Capital	¥7,586 million		Steam-power generators 5 locations 1,629 thousand kW (Oil 2 locations 375 thousand kW) (Coal 2 locations 752 thousand kW)
Total assets	¥441.260 billion (Non-consolidated) ¥480.546 billion (Consolidated)	Generating facilities	(LNG 1 locations 502 thousand kW) Gas turbine generators 5 locations 326 thousand kW Internal-combustion power generators
Employees	1,536 (Consolidated : 3,075)		12 locations 208 thousand kW Wind power generators 5 locations 2 thousand kW Total 2,165 thousand kW

(as of March 31, 2023)

Ratings

Rating agency	S&P	Moody's	R&I		
Rating	A+	A1	AA		
Outlook (direction)	Stable	Stable	Stable		

* Ratings on long-term preferred debts as of April 28, 2023

(Unit: million yen, X)

	Co	onsolidated (A)	Non	-consolidated	d (B)	(A) / (B)		
	FY2021 (Results)	FY2022 (Results)	Rate of Change	FY2021 (Results)	FY2022 (Results)	Rate of Change	FY2021 (Results)	FY2022 (Results)	
Sales	176,232	223,517	+26.8%	168,078	213,383	+27.0%	1.05	1.05	
Operating income	2,810	-48,406	_	465	-50,582	_	6.04	_	
Ordinary income	2,717	-48,799	_	500	-50,245	_	5.43	_	
Net income	1,959	-45,457	_	694	-45,934	_	2.82	_	

* Net income attributable to owners of parent.

[Revenue]

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

[Expenditure]

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

[Profit]

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

(Unit: million yen, X)

	С	onsolidated(۹)	Non	-consolidate	d(B)	(A) / (B)		
	FY2022 (Results)	FY2023 (Forecasts)	Rate of Change	FY2022 (Results)	FY2023 (Forecasts)	Rate of Change	FY2022 (Results)	FY2023 (Forecasts)	
Sales	223,517	undecided	_	213,383	undecided	_	1.05	_	
Operating income	-48,406	undecided	_	-50,582	undecided	_	_	_	
Ordinary income	-48,799	undecided	_	-50,245	undecided	-	_	_	
Net income	-45,457	undecided	_	-45,934	undecided	_	_	_	

* Net income attributable to owners of parent.

The forecast for FY2023 is "undecided" because we are in the process of applying for raising regulated electricity rates, and it is difficult to reasonably calculate both sales and profits at this time.

It will be disclosed promptly when the reliable calculation of financial forecast becomes possible.

[Dividends]

The dividends for FY2023 is "undecided" due to the uncertain factors including profits after price revision. It will be disclosed promptly when the dividends forecast, based on the financial outlook and other related factors, becomes possible.

Electric Energy Demand (Results) (1/2)



Monthly Area demand at Transmission End (Preliminary report)

(Million kWh,%)

	Apr	May	Jun	Jul	Aug	Sep	1 st Half	Oct	Nov	Dec	Jan	Feb	Mar	2 nd Half	FY
FY2022	594	648	775	921	929	809	4,676	708	610	587	583	508	566	3,562	8,238
FY2021	563	715	753	862	855	831	4,579	718	574	580	582	535	578	3,566	8,145
Rate of Change	+5.5	-9.3	+2.8	+6.9	+8.7	-2.6	+2.1	-1.4	+6.3	+1.3	+0.1	-5.1	-2.0	-0.1	+1.2

Average te	Average temperature												(°C)		
	Apr	May	Jun	Jul	Aug	Sep	1 st Half	Oct	Nov	Dec	Jan	Feb	Mar	2 nd Half	FY
FY2022	22.7	23.5	27.0	29.4	29.9	28.3	26.8	26.0	23.6	18.6	17.5	19.0	20.0	20.8	23.8
FY2021	21.7	25.8	27.1	28.8	28.7	28.8	26.8	26.0	21.8	18.9	17.7	17.2	20.4	20.3	23.6
Climatological Normals	21.5	24.2	27.2	29.1	29.0	27.9	26.5	25.5	22.5	19.0	17.3	17.5	19.1	20.2	23.3

* Climatological Normals is observed data from 1991 to 2020.

Electricity Sale	s Volume		(Unit: mi	llion kWh, %)
	FY2021 (Results)	FY2022 (Results)	Change	Rate of Change
Lighting	2,895	2,842	-53	-1.8
Power	4,138	4,231	+93	+2.3
Total	7,033	7,073	+40	+0.6

Power Generated and Received

	(Unit: million kWh)										
		FY2	021	FY2	022		Detect				
		Electricity generated	Com- position ratio	Electricity generated	Com- position ratio	Change	Rate of change				
	Coal	3,114	42.8%	3,239	44.1%	+125	+4.0%				
ဂ္ဂဝ	Oil	1,002	13.8%	989	13.4%	-13	-1.3%				
PC	LNG	1,654	22.7%	1,651	22.5%	-3	-0.2%				
	Total	5,770	79.3%	5,879	80.0%	+109	+1.9%				
Oth	ner	1,506	20.7%	1,469	20.0%	-37	-2.5%				
	Total	7,276	100.0%	7,348	100.0%	+72	+1.0%				

<Lighting>

The demand for Lighting decreased compared with Year-on-Year due to the impact of customer switching to other suppliers, despite the higher temperature in summer compared with previous year.

<Power >

The demand for Power increased compared with Year-on-Year due to recovery from the impact of the novel coronavirus and temperature effects.

<Power Generated and Received>

- Power generated and received was 7,348 million kWh, up 1.0%. *
- Electricity generated of OEPC's Coal-fired thermal power was up 4.0%. *
- Electricity generated of OEPC's Oil-fired thermal power was down 1.3%. *
- Electricity generated of OEPC's LNG-fired thermal was down 0.2%. *

*Comparison with previous year.

Electricity sales volume (FY2023 Outlook)

	FY2022 Results	FY2023 Forecasts	YoY Rate of Change
Lighting	2,842	2,643	-7.0
Power	4,232	4,263	0.7
Total	7,073	6,906	-2.4

Electricity sales volume (Long-term Outlook)

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

* Adjusted for the influence of temperature and leap year.

(Lighting)

The demand for Lighting is expected to be lower than the previous fiscal year owing to reactionary decrease from increased demand due to higher than normal temperature in the previous fiscal year, the impact of customer switching to other suppliers, and other factors (Year-on-year change: -7.0%)

(Power)

The demand for Power is expected to be higher than the previous fiscal year due to increased demand resulting from the recovery from the impact of COVID-19, despite reactionary decrease from increased demand owning to higher than normal temperature in the previous year (Year-on-year change: 0.7%)

(Total)

As explained above, the total electricity sales volume is expected to be 6,906 million kWh, lower than the previous year (Year-on-year change: -2.4%)

(Lighting)

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

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

(Power)

On the assumption that COVID-19 infection converges, while the number of commercial and accommodation facilities is expected to increase due to growth in the number of population and tourists, the demand for Power is expected to be affected by customer switching to other suppliers (Annual average growth adjusted for temperature: -0.2%)

(Total)

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

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

Capital Expenditures Plan

- Capital investment in FY2022 was 38.6 billion yen due to an increase in the development of new power sources and measures to address the aging of power sources.
- Regarding supply facilities, it plans to make appropriate future capital investment to renew aging facilities and upgrade to the next-generation electric power networks.
- In FY2023, the management environment will be extremely difficult, but it is planned to implement capital investment necessary to secure a stable supply of electricity after careful examination.

Trends in the Capital Investment Amount (Ont. Toolininon yer)								
FY		20	20	20	21	20	22	2023
By facilities		Results	(Plan)	Results	(Plan)	Results	(Plan)	(Plan)
Power sources		88	(115)	97	(124)	180	(195)	(187)
oply facilities	Transmission	67	(86)	47	(112)	81	(117)	(91)
	Transformation	63	(76)	69	(74)	35	(45)	(55)
	Distribution	65	(106)	66	(93)	54	(84)	(78)
Sul	Subtotal	196	(267)	183	(279)	171	(247)	(225)
Others		24	(27)	25	(34)	34	(44)	(33)
Total		309	(409)	307	(438)	386	(485)	(445)

Note: The figures may not exactly match the figures because of rounding.

Tranda in the Capital Investment Amount

[Major Projects in Capital Investments in FY 2023]

Power sources:

Makiminato Gas engine Power Plant

Responding to aging of Gushikawa Thermal Power Plant

Supply facilities: Responding to increasing demand

Replacement of aging facilities

Responding to shortened power outage times

(Unit: 100million von)

Responding to supply reliability

Item	Overview and Challenges
Sales	 The population and the number of households will continue increasing, but the number of tourists is recovering. The demand for Electric Power in Okinawa area will increase, but the rate of its increase has been slowing down. The entry of power producer and supplier has advanced competition. Challenges will be sales expansion of electricity and gas.
Profitability	 The fuel price has risen so high that it has exceeded the upper limit of the fuel cost adjustment system, which has reduces the company's profits. The profit and cost structure must be reviewed.
CF	 Capital investment will increase due to the implementation of the Mid-Term Management Plan. No large-scale electric power development is planned for the time being.
Capital composition	 Capital adequacy ratio significantly lower than previous levels due to higher fuel prices. A challenge is to restore financial strength.

The OEPC Group Vision: Basic Management Stance

What the OEPC Group Aims To Be

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

Basic Management Stance Fulfill social responsibility as a good corporate (4) (1)Strive to provide a stable supply of energy citizen of local communities (5) Nurture and value people (2)Aggressively take on carbon neutrality Achieve sustainable growth through proactive Meet the diverse needs of our customers and (6) (3) business development and continually do our utmost to enhance customer enhancing management efficiency satisfaction

Business Fields

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



Management Goals: Financial Goals and Business Portfolio

- The entire Group will work together to realize what we aim to be, striving to achieve financial goals.
- With the comprehensive energy businesses such as gas supply business, ESP and other at its core, in addition to the electric power business, the entire Group aims to grow by developing and enhancing the construction and real estate, information and communications, and lifestyle and business support businesses.

Financial goals (consolidated)	FY2025	
Ordinary income	12 billion yen or more	
ROE (Return on Equity)	5% or more	
Capital adequacy ratio	Maintaining the 30% mark	

Business Portfolio (2025)



Effective Utilization of Management Results: Concept of Investment and Shareholder Return Policy

Concept of investment

The basic mission of the OEPC Group is to provide stable energy to customers and contribute to the development of local communities and economies in Okinawa.

Investment for stable power supply

With regard to facilities necessary for stable supply, we will steadily implement investments to maintain and build facilities appropriately and efficiently, while reducing the total cost of facilityrelated costs.

Investment for carbon neutrality

In order to achieve carbon neutrality, we will promote realistic and effective investment in cooperation with the national government, prefectural governments and other businesses under policy and financial supports.

Investment in growth sectors

In order to ensure the growth of the entire Group, we conduct appropriate risk management by means of a PDCA cycle based on a regular assessment of the quantity of risks involved, and then make investments for business development.

Basic policy on shareholder return

- For the distribution of profits, our company will maintain a "consolidated dividend on equity ratio (DOE) of at least 2.0%" based on a "stable and continuous dividend" policy.
 - * In determining the actual dividend amount, in addition to the basic policy, the Company comprehensively considers the current management environment, trends in revenue and expenditure, and the balance among stakeholders.
 - * For FY2022, since we expect a very difficult earnings situation, we will forgo the payment of dividends for the interim and the end of the fiscal year.

Direction of Initiatives in the Medium-Term Management Plan: Direction of Initiatives to Realize What the OEPC Group Aims To Be

To realize what the OEPC Group aims to be, under the concept of "Okiden.COM," we will promote the "expansion of the topline," "proactive streamlining" and "challenge to become carbon neutral," to provide customers with energy and new extra value.





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

In December 2020, the Group has set up "Zero Emission Initiatives of OEPC" as a long-term policy in response to the growing social demand for measures to combat global warming. We will work towards achieving net zero CO₂ emissions by 2050, by showing measures as a road map, based on two directions, "make renewable energy as the main power source" and "reduce CO₂ emissions from thermal power sources," and will promote the initiatives by the Group as a whole.

- JUST TRANSITION IN THE OKINAWA AREA

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

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

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

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

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

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

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

Power Source Configuration under the Sixth Basic Energy Plan			Applicable zero emission power sources		
			Nationwide	Okinawa area	
Renewable energy		Approx. 36-38%			
	Hydropower	Approx. 11%	0	×	
Wind		Approx. 5%	0	×	
	Photovoltaic	Approx. 14-16%	0	0	
Geothermal		Approx. 1%	0	×	
	Biomass	Approx. 5%	0	0	
Nuclea	ir	Approx. 20-22%	0	×	
Hydrogen		Approx 1%	0	0	
Ammo	nia	Applox. 170	0	0	
Therr	nal	Approx. 41%			
	LNG	Approx. 20%			
	Coal	Approx. 19%			
	Heavy oil	Approx. 2%			
Total		100%	Approx. 57-61%	Approx. 20-22%	

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

ZERO CHALLENGE

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

In order to achieve a balance between an inclusive decarbonized society and an economic society in the Okinawa area, it is essential that the following business environment be developed,

at a minimum, with sufficient policy and financial support from the government.

- Technology is developed to meet the installation standards for large-scale wind power generation based on extreme wind speeds in the Okinawa area, and the business environment is developed to enable commercial installation.
- The business environment for a fair transition to lowcarbon and decarbonized thermal power generation is established by providing sufficient support for efforts to reduce and decarbonize at existing thermal power plants by co-firing CO₂-free fuels, in order to ensure both the capacity of thermal power plants necessary for a stable supply in the Okinawa area and the reduction of CO₂ emissions.
- In order to maximize the use of renewable energy, the burden on the people is controlled and a good relationship is established with local communities by streamlining environmental regulations and securing suitable land in harmony with local communities.
- To ensure the stable supply of necessary resources and fuels, supply costs for decarbonized fuels and technologies are sufficiently reduced through the integrated promotion of the establishment of hydrogen and ammonia fuel supply chains in cooperation with relevant countries and the securing of suitable lands for CCS, among others.



^{*} Since the previous goal set by the government compared to FY2013 was a 26% reduction (a 25.4% reduction from FY2005), with a goal compared to FY2005 also shown, we have set our goal to be a 26% reduction from FY2005, which is higher than the government's. As a measure against global warming, our company started co-firing biomass in the Gushikawa Thermal Power Plant in 2010, and introduced the Yoshinoura Thermal Power Plant (LNG) in 2012, which is the main pillar of the measures. Since believe that our efforts will be properly evaluated, we continue to use FY2005 as the base year.

Initiatives to Achieve Carbon Neutrality: Roadmap

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



Example: Development of the PV-TPO Business "karE-roof"



On April 1, 2021, the Company started the "karE-roof," a service that supplies electricity by installing photovoltaic power generation facilities and storage batteries free of charge (PV-TPO business).



Key Benefits to Customers

Zero yen Free initial installation cost

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

Use of electricity in the event of disasters and other emergencies

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

Reasonable rate plan

Electricity generated by photovoltaic power can be purchased with a reasonable plan.

Example: Development of PV-TPO Business



- We have entered into 21 commercial service contracts with total output of 1,675 kW.
- Of these, we have started operation for 2 contracts with output of 105 kW.

Urasoe Municipal Minatogawa Junior High School

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



- Nago Mirai Building 2. (data center)
- Photovoltaic power generation facilities: 80kW
- CO2 emissions: 129 tons/year



Ryukai Logistics CO.LTD.

- Photovoltaic power generation facilities: 220kW
- CO2 emissions: 356 tons/year



Example: Microgrid Demonstration Project in the Kurima Island Region



- In response to a decision by the Ministry of Economy, Trade and Industry to grant a subsidized project "Regional Microgrid Construction Project," construction work on a demonstration facility for the Kurima microgrid, which was being carried out in collaboration with Nextems Co., Ltd. and Miyakojima Mirai Energy Co., Ltd., was completed and operation was started in January 2022.
- In May 2022, for the first time in Japan, we separated the microgrid target area from the original power transmission and distribution network, and succeeded in supplying electricity using existing power distribution lines using only a combination of photovoltaic power generation installed on the customer side and our company's MG storage batteries.
- By establishing regional microgrids, we will contribute to the realization of decarbonization, strengthening of electric power resilience, and sustainable society, which is increasingly in demand from the society.
 - *1 A regional microgrid is a system that uses regional renewable energy in an area of a certain size.
 - *2 Nextems Co., Ltd. (Urasoe City): In December 2019, the company received the Minister of Economy, Trade and Industry Award, the highest award in the New Energy Foundation's FY2019 New Energy Grand Prize in the Advanced Business Model Category.



Example: Investigation for building a hydrogen-based society



- We conducted the Investigation on the development of a total system for the utilization of regional hydrogen centered on the Yoshinoura Multi Gas Turbine Power Plant in the Okinawa area selected for the Development of Technologies for Realizing a Hydrogen Society/Development of Technology for Utilizing Regional Hydrogen/Investigation of Potential for Hydrogen Production and Utilization, publicly solicited by NEDO*.
- In addition to technical investigation on raw material procurement, and receiving and co-firing facilities for hydrogen co-firing at the Yoshinoura Multi Gas Turbine, we conducted research on the local production of hydrogen and industrial development using by-produced CO2, etc. We will continue our efforts to realize a decarbonized society in the region.
 *New Energy and Industrial Technology Development Organization

Outline of the investigation



Specific details of the investigation

- (1) Hydrogen co-firing in gas turbine power generation facilities
- (2) Local production of hydrogen using LNG reforming and local renewable energy
- (3) Industrial promotion using CO₂ and carbon nanotubes in hydrogen production
- (4) Large-scale hydrogen import bases at power plants
- (5) Investigation of potential hydrogen utilization in the region

Example: Feasibility study project to develop a remote island-type model for hydrogen

production and utilization in the Miyako area

2050 おきでん ZERO CHALLENGE



Targeting the Miyako area, where the introduction of renewable energy and tourism development is under way, we will review a model for local production and local consumption of hydrogen by recirculating and reusing water resources, and through hydrogen production from renewable energy, and on-site utilization of hydrogen. We will extract and summarize issues to future implementation in the society to develop an action plan toward the realization.



* New Energy and Industrial Technology Development Organization

Example: Research project on locally produced and locally consumed ammonia in coal-fired thermal power plants



- We applied for the FY2022 Investigation Project on Okinawa-style Clean Energy Introduction Promotion Investigation Project, which was publicly solicited by the Okinawa General Bureau of Cabinet Office, and the Investigation Project for Local Production and Consumption of Clean Fuel Ammonia in Okinawa was selected. We conducted a study.
- Ammonia co-firing at coal-fired power plants is expected to be an effective means of decarbonizing thermal power plants in Okinawa, where reducing CO_2 emissions is an issue.
- In this investigation, we investigated the feasibility and business profitability of local production for local consumption of clean fuel ammonia, co-firing (local consumption) of ammonia at coal-fired power plants, while contributing to the utilization of renewable energy by ammonia production (local production) using renewable energy derived electricity. We will continue our efforts to realize a decarbonized society in the region.



Outline of the investigation

Example: Feasibility study of water heat storage projects contributing to expanded introduction of renewable energy and demand response



- We applied for the FY2023 Investigation Project on Okinawa-style Clean Energy Introduction Promotion Investigation Project, which was publicly solicited by the Okinawa General Bureau of Cabinet Office, and the <u>Feasibility Study of Water Heat Storage Projects Contributing to Expanded Introduction of Renewable Energy and Demand Response</u> was selected.
- In this study, we will investigate the feasibility of a business model where renewable energy conversion and storage systems based on water heat storage are used to effectively utilize surplus renewable energy resulting from the expansion introduction of renewable energy, aiming to balance it with demand response, and the possibility of business expansion that will lead to the securing of adjusting operation.



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Initiatives by Business: Electric Power Business

[Direction of Initiatives]

- Even in a competitive environment, the Group's fundamental mission of providing a stable supply of energy remains unchanged, and we will make every effort to realize it.
- ② We will promote the initiatives for carbon neutrality.
- ③ Based on the concept of "Okiden.COM," we will strive to improve the profitability of our electric power business by thoroughly reducing costs and providing electric power with additional value, while reviewing our business model.
- ④ We will develop the infrastructure to enable each electric power business to operate autonomously and flexibly.



- With the aim of stimulating interest in power transmission and distribution facilities that provide stable supply of electricity, we conducted a demonstration of producing and selling tower cards using NFT technology* as our first such initiative.
- Based on this demonstration, we will continue to consider creating new value of our infrastructure facilities, etc. and providing new services utilizing NFT technology.

*Non-Fungible Token: A technology that uses blockchain technology to prove that data is unique and irreplaceable



Initiatives by Business: Group Businesses

[Direction of Initiatives]

- Based on the concept of "Okiden.COM" we will strive to create new value and enhance competitiveness--Make (Value creation)--through improving work efficiency--Convert (digitalization)--and business collaboration--Optimize (optimization).
- ② We will expand our existing business areas and boldly take on new business areas.



- As a comprehensive energy company that can supply both electricity and gas, we will build an energy center on the premises of the OEPC head office, which will have the advantages of reducing CO_2 emissions, providing a stable supply, and strengthening business continuity plans (BCPs), and we are beginning to supply the main building and other buildings in the complex outside the premises.
- We will develop a comprehensive energy supply business centered on the center.



Advancement and diversification of energy needs

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





- It provides electricity and gas in the forms of, for example, air-conditioning water (cold / hot), hot-water supply and steam.
- * Reliance Energy Okinawa Inc. achieved energy savings of 40% and CO2 savings of 43%, compared to ordinary commercial facilities, in its ESP business at large-scale commercial facilities in the prefecture, and won the Grand Prize for Energy Conservation by the Minister for Economy, Trade and Industry, for the first time in the prefecture.



[Image of energy supply areas]

Group Businesses (Examples of Initiatives: Gas supply business)

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

Pipeline supply

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



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



LNG Supply Center

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



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

Principal customers

Okinawa Gas Co. (Raw materials for city gas) TAKUNAN STEEL CO., LTD Okinawa Watakyu shingu Co. ORION BREWERIES,LTD Chubu Tokushukai Hospital Royal Hotel OKINAWA ZANPAMISAKI Musashino Okinawa Hyatt Regency Seragaki Island, Okinawa

*Customers to whom we supplied over 600t of gas in FY2022



Development of Demand Along the Route by Laying Gas Pipelines

- Gas pipeline will be laid from the Yoshinoura Thermal Power Plant to the head office of the Okinawa Electric Power Company in Urasoe City through the Nishi-Futenma area, where heat demand is expected due to the development of the former military base sites. (FY2023 Supply and use starts to be determined.)
- We will further promote the sale of natural gas in the central part of the main island of Okinawa.

Route for laying Yoshinoura-Makiminato gas pipelines (tentative name)

[Equipment specifications]

Pressure (high pressure specification), diameter (300 mm), conduit extension (about 14 km)



* Source: The material of the Okinawa Revitalization Council Chair and Specialized Committee Meeting (third session) presented on the Cabinet Office website • We will develop the pipeline network, and acquire demand in line with customer's change of fuels and urban development. We will also work with other energy companies to consider supply to ordinary households.

[Reference]

Environmental friendliness of natural gas

Natural gas is a clean energy with <u>low CO_2 </u> emissions among fossil fuels. In addition, it generates less nitrogen compounds (NOx), which cause air pollution, and does not emit any sulfur oxides (SOx).



Source: "Report on Verification of Technology for Assessment of Atmospheric Impact of Thermal Power Plants" (March 1990)/Institute of Applied Energy for CO₂, "Natural Gas Prospects" (1986)/OECD and IEA for SOx and NOx

Resilience of gas pipelines

Most of gas pipelines are buried, so they are not easily affected by rain and wind. High- and medium-pressure gas pipelines have also been confirmed to be highly earthquake-resistant.

- At the time of the Great Hanshin-Awaji Earthquake, a medium-pressure gas pipeline attached to a bridge was deformed when the bridge fell. No gas leakage occurred.
- During the Great East Japan Earthquake, there was no damage to highpressure gas pipelines.

Source: Interim report of the Study Group on Gas Business toward 2050 (April 2021)

- OEPC established "SeED Okinawa LLC" jointly with five group companies to promote the development of energy business outside the region, by leveraging the knowledge and technologies cultivated with electric business such as the expansion of renewable energy introduction in remote islands, operation of grid stabilization devices, etc. (April 2021)
- As social demands for countermeasures against global warming increase further worldwide, we will contribute to the realization of a low-carbon society and sustainable society, by further spreading renewable energy in the island regions of Asia and the Pacific where we can leverage the strengths of our group.



Development of Lifestyle and Business Support Businesses

- We will develop our lifestyle support business, which utilizes cutting-edge technologies to realize a safe and secure society.
- ✓ Development of Mimamori (caring family monitor) Service
- We established "Okiden C plus C Corporation" to commercialize Mimamori Service which would utilize cutting-edge technology (May 2021).
- It utilizes state-of-the-art IT technology that can analyze indoor Wi-Fi signals using AI without using a camera or microphone, to understand human movements and breathing during sleep.
- In light of the needs confirmed through the Demonstration Project for Establishing a System for Monitoring the Elderly Utilizing IT implemented in 12 municipalities, including Naha City, during FY2022, we are currently working to review the ideal way of monitoring ("Mimamori") in cooperation with local communities, system development, and test operation with local governments.
- In April 2023, we signed a memorandum of understanding for collaboration and cooperation with nami, a Singapore-based startup that develops sensors equipped with Wi-Fi sensing technology.



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





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

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







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

Initiatives for Each Business: Initiatives for the Business Foundation

[Direction of Initiatives]

- ① We will improve efficiency through outsourcing and sharing.
- ② We will aggressively utilize the digital technologies listed in OEPC DX to reduce working hours and promote a variety of working styles through the introduction of new personnel measures.
- ③ We will strive to acquire external revenue by utilizing the knowledge and know-how cultivated within the company.

		Convert Optimize Make	
	2025	2030	
(1) Efficiency	Considering outsourcing and shared services for the entire group		r.
(2) Diverse ways of working	 Restraining working hours by improving the efficiency of work processes, utilizing RPA, and utilizing flextime work and telework Considering the introduction of new personnel measures, such as the utilization of senior employees (reemployment after retirement) and consideration of other measures Developing foundation to promote DX (human resource development, etc.) 	Directing resources to high-value-added areas	
(3) External revenue	Considering the development of healthcare business and other business support busines	ss (RPA, training, etc.)	

- Introduced the "Zero Trust Environment," an information infrastructure that will strengthen our business foundation.
- Through the Zero Trust Environment, we will further improve operational efficiency internally and externally, accelerate the creation of new value-added services, and promote a shift to a challenging mindset and speedy management.

Introduction of Zero Trust Environment, information infrastructure that will strengthen our business foundation

• Zero trust enables comfortable business working and the use of cloud, and is expected to improve operational efficiency and strengthen the business foundation of the entire company.



Use of cloud

- Provide secure, flexible and quick access to cloud services that will be the mainstream in the future
- Facilitate the use of big data in the cloud for advanced use of data



We will take advantage of the cloud characteristics that make it easy to introduce, expand and withdraw, and promote a shift to mindset willing to take on challenges and speedy management.

About the Emergency Management Measures Committee

- We established the "Emergency Management Measures Committee" in April 2022, and considered and implemented emergency measures for revenue and expenditure from all perspectives, based on the premise that stable supply and safety are the top priorities.
- We will continue to work on both aspects of revenue and expenditure to maximize efficiency and take further measures while securing necessary costs for stable supply.

Main Initiatives

Items		Contents			
Cost Side	Reduction of executive compensation	Reduce compensation for full-time directors and executive officers by up to 20%			
	Curb Repair and maintenance costs	 Based on the premise of stable supply, curb repair work based on the results of facility deterioration diagnosis, etc. and extend the inspection cycle Strengthening scrutiny of repair work details and costs even more than before 			
	Digital Transformation	 Strongly promote "Okiden DX" by digitization of internal and external operations, and accelerate "Proactive streamlining" Streamlining business operations through remote monitoring of resident on-site response, etc. 			
	Efficiency improvement through organizational optimization and centralization of operations	 Improved operational efficiency through consolidation of branches and sales offices and centralization of operations dispersed among offices 			
	Reduction of fuel costs	 Review of coal-fired power operations Diversification of contracts, including diversification of coal price fixing periods and purchase of coal at fixed prices based on futures prices, to reduce the impact of market fluctuations. 			
	Others	 Reconsider implementation timing for less urgent system development, etc. Consideration of reducing rent by reviewing the leased area of buildings 			
Finan cial Side	Sale of assets holdings	 Considering securing funds by selling assets holdings (real estate, policy stocks, etc.) Some company housing and welfare facilities have been sold 			
	Utilization of group funds	 Borrowing from affiliated companies to make effective use of group funds 			
	New source of finance	 To improve the financial base by raising new sources of finance, including hybrid corporate bonds 			

Regarding Increase in Electricity Rates

On May 16, 2023, the Company submitted an amended application for approval of a regulated rate increase filed on November 28, 2022, reflecting revised instructions in response to the assessment policy presented by the Ministry of Economy, Trade and Industry following a rate review and other steps (scheduled for implementation on June 1, 2023).

With regards to free rates, electricity rates were revised effective on April 1, 2023.

Regarding increase in electricity rates [Submitted an amended application on May 16, 2023, scheduled for implementation on June 1, 2023 ; Implemented for free rates effective on April 1]

• In order to continue the stable supply of electricity, its primary mission, the Company filed an application on November 28, 2022 for approval of an increase in the regulated rates (revision rate: 43.8%) in order to raise all electricity rates, including the regulated rates, from April 2023. Reflecting the revised instructions regarding the assessment policy provided by METI after the rate review, we submitted an amended application on May 16, 2023 with an implementation date of June 1, 2023 (revision rate: 43.4%).

Free rates were revised effective in April 2023^{*}.

- The average model for metered rates (monthly usage of 260 kWh) will increase by approximately 33.3% (39.3% for the approved application) when the fuel cost adjustment amount for June is reflected. After the government's drastic reduction measures, the price increase is approximately 11.4%.
- * The unit prices of free rates that were applicable at the time of the revisions to the rates on April 1 reflect wheeling fees pursuant to the wheeling services provision that was approved on January 27, 2023 in the unit prices announced on November 28, 2022. The unit price of free rates will be revised based on the corrected cost of the regulated sector.



Summary of Amendment to Electricity Rate Increase Application

- In November 2022, we requested a 43.8% price increase for customers in the regulated sector.
- Subsequently, following the Rate System Expert Meeting, the Consumer Commission, public hearings, and the relevant ministerial meeting on price issues, on May 16, 2023, the Ministry of Economy, Trade and Industry (METI) presented its assessment policy regarding application costs and gave us corrective instructions.
- Reflecting this amended instruction, we submitted an amendment on May 16, 2023, requesting a 43.4% price increase for customers in the regulated sector, effective June 1, 2023.
- Based on the average model of households, etc. (monthly usage of 260 kWh), we had requested a 39.3% price increase at the time of application for approval, and in addition to the amended instructions, the price increase will be 33.3% when fuel cost adjustments in June of this year are reflected.
- By reflecting the increase of 8.0 billion yen in transmission and distribution related costs associated with the revision of toll rates in April of this year, together with the 9.7 billion yen reduction based on the amended instructions, the adjusted cost is 215.3 billion yen, a reduction of 1.7 billion yen compared to the cost applied for.



Summary of Adjusted Cost (Comparison with Previous Revision)

- The adjusted cost (FY2023 FY2025) reflects cost reductions of 23.3 billion yen through maximum management efficiency improvements, including the amended instructions, and is lower than the cost of the previous revision (FY 2008) in all items except fuel costs, electricity purchased from other companies, business compensation, and taxes and public charges.
- However, due to higher fuel prices and an increase in the amount of electricity purchased from renewable energy sources, the total amount of adjusted costs increased by 66.8 billion yen compared to the previous revision.



Reference : Comparison of Assumptions and Supply/Demand Plan

- Electricity sales volume has decreased due to switching to other retail electricity providers.
- Exchange rates and fuel prices have been rising, especially coal prices have increased significantly.
- The volume of electricity generated and received has decreased due to the introduction of LNG-fired thermal power generation and an increase in renewable energy sources, resulting in a decrease in the volume of electricity generated by coal machines.



①Previous revision

In calculating the rate of business rewards, bond yields and return on equity for all industries used in the calculation of the rate of business rewards are based on data for the 7-year period from FY2015 to FY2021, and business management risk (beta value) is based on data for the 10-year period from November 1, 2012 to October 31, 2022 The data for the business management risk (beta) is for the 10-year period from November 1, 2012 to October 31, 2022

2Adjusted Cost

Reference: Management efficiency reflected in adjusted costs

- In raising electricity rates, we will work to reduce the burden on customers through greater management efficiency than ever before, taking into account the details of the discussions at the Emergency Management Committee.
- The adjusted cost reflects cost reductions of -23.3 billion yen, which is the sum of -13.6 billion yen in management efficiency improvements incorporated into the application cost and -9.7 billion yen in the amended instructions, for the three-year average from FY2023 to FY2025, thereby minimizing the extent of the price increase.

[Breakdown of Amount Reflecting Efficiency Improvements]

() shows the amount of efficiency improvement by the amendment.

Items Average from FY2023 to FY2025		Main Activities		
Personnel costs	- 2.5 billion yen (- 0.4 billion yen)	 Reduction of executive and employee salaries in accordance with the examination guidelines. Salaries and allowances are not included in the cost. Reduction of welfare expenses by reviewing the employer's share of health insurance premiums, etc. 		
Fuel costs Purchased power costs	- 16.8 billion yen (- 7.1 billion yen)	 Reduction of fuel costs through diversification of procurement methods and suppliers. Reduction of fuel costs through more efficient operation of LNG and coal-fired power generation equipment, taking into account unit power generation costs. Reduction of fuel procurement cost through top runner assessment, etc. 		
Repair and maintenance costs	- 1.3 billion yen (-0.6 billion yen)	 Reduction of cost by careful examination of inspection cycle, design, quantity, unit price. Application of efficiency factor, etc. 		
Depreciation costs	- 0.2 billion yen (- 0.1 billion yen)	 Review of design, specifications, and construction methods, and revision of ordering methods. Reduction of costs by applying efficiency improvement coefficients, etc. 		
Other	- 2.6 billion yen (- 1.6 billion yen)	 Reduction of extension and development-related expenses, contracting expenses, other expenses, and rental expenses through careful scrutiny and selection of expenditure items and review of contract details. Application of efficiency improvement coefficients, etc. 		
Total	- 23.3 billion yen (- 9.7 billion yen)			

Project for Mitigating Drastic Changes in Electricity Charges

- With the government's project for mitigating drastic changes in electricity charges, electricity charges are discounted according to the amount of electricity used.
- Discounts on electricity charges due to the project for mitigating drastic changes in electricity charges and others (applicable from the January 2023 usage)
- With the government's project for mitigating drastic changes in electricity charges, discounts of 7 yen per kWh for low voltage and 3.5 yen per kWh for high voltage (3.5 yen per kWh for low voltage and 1.8 yen per kWh for high voltage for the September usage) have been applied from the charge for the January 2023 usage (February bill).
- * In addition, discounts are scheduled to be offered under the Okinawa Electricity Rate Increase Emergency Measures Project by the Cabinet Office and the Okinawa Prefectural Government.

Illustration of the electricity bill for the average model (monthly usage of 260 kWh) for customers who subscribe to a meter-rate lighting plan



> Unit price of support for low voltage by the government: 7 yen/kWh (applicable from the January 2023 usage)

- •The above rates include an amount equivalent to the consumption tax and a surcharge for promoting renewable energy generation (1.4 yen/kWh) for FY2023. *The above image shows the rates for FY2022 with the FY2023 unit price also applied.
- The above rates include fuel cost adjustments based on the average fuel prices from January to March 2023.

*The actual adjusted unit price will vary depending on the average fuel price for each month.

Review of wheeling fees based on the new wheeling fee system

- In April 2023, a new wheeling fee system, the Revenue Cap System, was introduced with the aim to make renewable energy the mainstay and strengthen resilience by helping general electricity transmission and distribution utilities to balance necessary investments with improved cost efficiency.
- As a response to this system, based on the business plan for FY2023 to 2027 that was formulated in accordance with national guidelines, we calculated projected revenue in relation to wheeling services (the "Revenue Projection" hereinbelow), which is the cost required to operate a general electricity transmission and distribution business. And, in light of the results of verification at the Expert Meeting on the Fee System of the Electricity and Gas Market Surveillance Commission, we applied to the Minister of Economy, Trade and Industry for approval and received an approval as applied.
- In addition, we received an approval for the wheeling service provision based on the Revenue Projection to implement new wheeling fees in April 2023.
- We will continue to contribute to the development of local communities by further strengthening stable supply of electricity and working toward carbon neutrality.



* Revenue when unit price for wheeling fees + unit price for remote islands universal service adjustment at the time of submission of the Revenue Projection remain unchanged

Unit price for standard-connection transmission service* (including tax)

		Current revenue unit price	New price	Difference
Extra-high voltage	h Basic charge (Yen/kW)	335.50	469.70	+134.20
	Electricity charge (yen/kWh)	3.26	3.53	+0.27
High voltage	Basic charge (Yen/kW)	489.50	710.60	+221.10
	Electricity charge (yen/kWh)	4.64	4.91	+0.27
Low voltage (Power)	Basic charge (Yen/kW)	720.50	795.30	+74.80
) Electricity charge (yen/kWh)	7.90	8.08	+0.18
Low voltage (Lighting)	Basic charge (Yen/kW)	236.50	303.60	+67.10
	g) Electricity charge (yen/kWh)	10.51	11.83	+1.32

* Includes unit price for remote islands universal service adjustment

• Current revenue unit price: 0.49 yen/kWh (for August 2022)

• New unit price: -0.08 yen/kWh (for May 2023)

Characteristics of the Business Bases

Demand for Energy	 Increasing demand for energy due to population growth. As the proportion of energy for consumer use is high, effects of economic fluctuations are low for demand for Electric power. Potential demand due to large-scale urban development projects.
Competition	 OEPC is outside the framework of wide-area power interchange because it has an isolated system. OEPC has voluntarily released power of 10,000kW supplied by J-Power. Competition is advancing due to the entry of energy suppliers. Biomass power plant by power producer and supplier has started operation.
Power Generation Facilities	 A high reserve supply capacity is required due to an isolated system. Reliant on fossil fuels only due to difficulties to develop nuclear or hydraulic power generation. Coal-fired thermal power generation is indispensable not only for stable supply but also for maintaining electricity rates.
Remote Islands	 OEPC supplies power to 11 isolated systems including those in the main island. The region has a high cost structure because it has small islands and also because the scale of the economy is small. This leads to constant loss recording.
Measures against global warming	 Currently, possible measures are limited due to reasons including the region's geographic characteristics and constraints on the scale of demand. The introduction of renewable energies contributes to reducing fuel consumption and cost on remote islands, where fuel unit price is high. Since the systems of Okinawa area are small and independent, the limit of connection volume is likely to occur when using renewable energies.

This document includes statements concerning future results. Such statements are based on calculations and predictions and contain potential risks and uncertainties. Please be aware that future results may change in accordance with changes in assumptions related to the management environment and the like.

[Enquiries regarding this document]

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