# FY2021 3<sup>rd</sup> Quarter Financial Results (April 1 – December 31, 2021)

Tokyo Electric Power Company Holdings, Inc.







# Overview of FY2021 3<sup>rd</sup> Quarter Financial Results

(Released on January 31, 2022)

# **Regarding Forward-Looking Statements**

Certain statements in the following presentation regarding TEPCO Group's business operations may constitute "forward-looking statements." As such, these statements are not historical facts but rather predictions about the future, which inherently involve risks and uncertainties, and these risks and uncertainties could cause TEPCO Group's actual results to differ materially from the forward-looking statements herein.

(Note)

Please note that the following is an accurate and complete translation of the original Japanese version prepared for the convenience of our English-speaking investors. In case of any discrepancy between the translation and the Japanese original, the latter shall prevail.



### < FY2021 3<sup>rd</sup> Quarter Financial Results>

- Operating revenue decreased due to the application for the new accounting standards and other factors.
- Ordinary income and quarterly net income decreased due to a negative turn in the effects of the time-lag from the fuel cost adjustment system at JERA and a decrease in the volume of retail electricity sold despite Group-wide continued efforts to improve profitability.

### < FY2021 Consolidated Performance Forecast >

The previous FY2021 full-year financial forecast was revised to record loss on return of imbalance income and expenditure as extraordinary loss and other factors.



# **1. Consolidated Financial Results**

				(Un	it: Billion kWh)
		FY2021	FY2020	Compa	arison
		Apr-Dec (A)	Apr-Dec (B)	(A)-(B)	(A)/(B) (%)
	Total Electricity Sales Volume	168.4	167.2	1.2	100.7
	Retail Electricity Sales Volume *1	134.6	150.3	-15.7	89.5
	Wholesale Electricity Sales Volume *2	33.7	16.8	16.9	200.3

(Unit: Billion Yen)

	FY2021	FY2021 FY2020		arison
	Apr-Dec (A)	Apr-Dec (B)	(A)-(B)	(A)/(B) (%)
Operating Revenue	3,503.5	4,103.9	-600.3	85.4
Operating Income/Loss	88.0	152.7	-64.6	57.7
Ordinary Income/Loss	72.2	235.5	-163.3	30.7
Extraordinary Income/Loss	-52.8	-95.4	42.6	-
Net Income Attributable to Owners of the Parent	9.8	130.4	-120.6	7.5

※1 Total of EP consolidated (EP/TCS/PinT) and PG (islands, etc.)

2 Total (excluding indirect auctions) of EP consolidated (EP/TCS/PinT), PG (including inter-regional), and RP consolidated (RP/Tokyo Electric Generation)



Area demand (Unit: Billion kWh)					
	FY2021	FY2020	Comp	arison	
	Apr-Dec(A)	Apr-Dec(B)	(A)-(B)	(A)/(B) (%)	
Area demand	192.7	193.6	-0.9	99.6	

### Foreign Exchange Rate/CIF

	FY2021 Apr-Dec(A)	FY2020 Apr-Dec(B)	(A)-(B)
Foreign Exchange rate (Interbank,yen/dollar)	111.1	106.1	5.0
Crude oil price (All Japan CIF,dollar/barrel)	74.0	39.1	34.9

\*Crude oil price for FY2021 Apr-Dec is tentative figure released on January 20, 2022



# 2. Points of Each Companies

<TEPCO Holdings>

Ordinary income increased due to an increase in received dividends from core operating companies, etc.

### <TEPCO Fuel & Power>

Ordinary income decreased due to a negative turn in the effects of the time-lag from the fuel cost adjustment system at JERA.

<TEPCO Power Grid>

> Ordinary income decreased due to an increase in facility costs, etc.

### <TEPCO Energy Partner>

Ordinary income decreased due to a decrease in the volume of retail electricity sold as a result of increased competition and effects of daily temperatures, etc.

<TEPCO Renewable Power>

> Ordinary income decreased due to an increase in prorerty tax, etc.

# 3. Overview of Each Company

			· · · ·	nit: Billion Yen)
	FY2021	FY2020	Compa	arison
	Apr-Dec (A)	Apr-Dec (B)	(A)-(B)	(A)/(B) (%)
Operating Revenue	3,503.5	4,103.9	-600.3	85.4
TEPCO Holdings	365.4	364.7	0.6	100.2
TEPCO Fuel & Power	3.8	5.8	-1.9	66.8
TEPCO Power Grid	1,336.1	1,292.4	43.7	103.4
TEPCO Energy Partner	2,890.9	3,614.3	-723.3	80.0
TEPCO Renewable Power	117.2	109.9	7.2	106.6
Adjustments	-1,210.2	-1,283.5	73.3	-
Ordinary Income/Loss	72.2	235.5	-163.3	30.7
TEPCO Holdings	72.0	7.0	64.9	-
TEPCO Fuel & Power	-9.3	83.4	-92.7	-
TEPCO Power Grid	163.5	183.6	-20.0	89.1
TEPCO Energy Partner	-42.3	7.9	-50.3	-
TEPCO Renewable Power	40.5	44.1	-3.6	91.8
Adjustments	-152.1	-90.6	-61.5	-



# 4. Consolidated Extraordinary Income/Loss

			(Ur	it: Billion Yen)
		2021 Dec (A)	FY2020 Apr-Dec (B)	Comparison (A)-(B)
Extraordinary Income		29.8	-	29.8
Grants-in-Aid from the Nuclear Damage Compensation and Decommissioning Facilities Corporation	<b>※</b> 1	29.8	-	29.8
Extraordinary Loss		82.6	95.4	-12.7
Expenses for Nuclear Damage Compensation	Ж2	66.3	95.4	-29.1
Loss on return of imbalance income and expenditure	Ж3	16.3	-	16.3
Extraordinary Income/Loss		-52.8	-95.4	42.6

X1 Apply for changes in grant amounts based on stipulations on September 30, 2021.

X2 Increases due to damage from shipping restrictions and extension of the period for calculating reputational damage estimates.

X3 An adjustment will be made by subtracting part of the imbalanced revenue and expenditure seen in January 2021, which was caused by the tight supply-demand situation experienced during the winter of FY2020, from consigned transmission fees after April 2022.



# 5. Consolidated Financial Position

- Total assets balance Increased by 464.5 billion yen due mainly to an increase in cash and deposits.  $\succ$
- Total liabilities balance increased by 401.3 billion yen due mainly to an increase in corporate bonds. >
- Total net assets balance increased by 63.2 billion yen due mainly to an increase in appropriation of net income  $\geq$ attributable to owners of parent.
- Equity ratio worsed by 0.5 points. **Balance Sheet as of December 31,2021 Total Assets** Balance Sheet as of March 31,2021 12,557.7 **Increase in liabilities** Liabilities billion yen +401.3 billion yen 9.351.6 Increase in assets Liabilities Increase in corporate bonds +464.5 billion yen billion yen +435.0 billion yen 8,950.3 - Increase in cash and deposits **Total Assets** + 433.3 billion yen billion yen 12.093.1 Increase in net assets billion yen Net assets + 63.2 billion yen **Net Assets** 3.206.0 Net income attributable to 3,142.8 owners of parent billion yen + 9.8 billion yen billion yen Worsed by Equity Ratio:25.3% Equity Ratio:25.8% 0.5 points TEPCO

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# 6. FY2021 Consolidated Performance Forecast

Performance forecast has been revised as shown below due to the recording of loss on return of imbalance income and expenditure as extraordinary loss and other factors.

(Unit: Billion yen)

	FY2021 Projection (released on Jan. 31, 2022) (A)	FY2021 Projectin (released on Oct. 27, 2021) (B)	(A)-(B)	FY2020 Results
Operating revenue	5,051.0	4,850.0	201.0	5,868.8
O p e r a t i n g income/loss	19.0	21.0	-2.0	143.4
Ordinary income/loss	-16.0	-13.0	-3.0	189.8
Extraordinary income/loss	-16.3	0.0	-16.3	1.3
Net Income Attributable to Owners of Parent	-41.0	-16.0	-25.0	180.8

\*Projections for ordinary income and net income attributable to owners of parent reflect a provisional special contribution of 50.0 billion yen to the NDF for compensation.



(Unit: Billion yen)

		FY2021 Projection (released on Jan. 31, 2022)	FY2021 Projectin (released on Oct. 27,2021)	FY2020 Results
Total Electricity sales volume		227.5	222.0	231.5
	Retail Electricity sales volume	183.9	183.9	204.7
	Wholesale Electricity sales volume	43.6	38.1	26.8
Area demand		266.9	266.3	266.3

	FY2021 Projection (released on Jan. 31, 2022)	FY2021 Projectin (released on Oct. 27,2021)	FY2020 Results
Foreign Exchange rate (Interbank:yen per dollar)	Approx.112	Approx.110	106.1
Crude oil price (All Japan CIF:dollar per barrel)	Approx. 75	Approx.74	43.4



### (Reference) Consolidated Year-on-Year performance comparison ① ~Increases/Decreases chart~



- X1 Retail power sales include the impact of transmission expenses
- ※2 Wholesale power sales exclude the impact of indirect auctions
- ※3 Electricity procurement expenses exclude the impact of indirect auctions, and offset the revenue increase/decrease caused by an increase/decrease in deficit imbalance.
- ×4 Transmission revenue excludes the impact of deficit imbalance but includes transactions within the Group companies

# (Reference) Consolidated Year-on-Year performance comparison 2 ~ Figures~

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(Units: Billion yen)

		FY2021 Apr-Dec (A)	FY2020 Apr-Dec (B)	(A)-(B)
Ordinary In	come	72.2	235.5	-163.3
Power sup transmissio	oly and demand, and on revenue	1,272.8	1,356.4	-83.5
	Retail power sales $\%1$	1,559.1	1,692.8	-133.7
	Wholesale power sales ※2	426.5	191.8	234.6
(-)	Electricity procurement expense ※3	-1,730.1	-1,554.3	-175.8
	Transmission revenue ※4	1,017.3	1,026.0	-8.6
Others		-1,200.5	-1,120.8	-79.7
	Profit of entities accounted for using equity method	18.7	118.0	-99.3
(-)	Depreciation costs	-301.5	-298.5	-3.0
(-)	Facility costs	-188.0	-181.3	-6.6
	Others ※5	-729.6	-758.9	29.2

X1 Retail power sales include the impact of consigned transmission expenses

X2 Wholesale power sales exclude the impact of indirect auctions

3 Electricity procurement expense exclude the impact of indirect auctions, and offset the revenue increase/decrease caused by an increase/decrease in deficit imbalance.

X4 Transmission income includes transactions within the Group but excludes the impact of the deficit imbalance

%5 Consists of primarily personnel costs, taxes and consignment costs. ©Tokyo Electric Power Company Holdings, Inc. All Rights Reserved.





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#### **Profit Structure**

Operating revenue is mainly transmission revenue, and this is fluctuated by area demand. Expenses is mainly for repairs and depreciation costs of transmission and distribution facilities.

		FY2020	FY2021	comparison
	Apr-Dec	193.6	192.7	-0.9
	Ordinary inc	ome	(1	Inites Dillion Ven
	oralitary mo			Jnits: Billion Yen
FY 2021		FY2020	FY2021	comparison
Apr Doo	Apr-Jun	40.7	34.6	-6.0
Apr-Dec				
163.5	Apr-Sep	123.8	106.6	-17.1
	Apr-Sep Apr-Dec	123.8 183.6	106.6 163.5	-17.1 -20.0

X Transmission revenue excludes impact from imbalanced revenue and expenditure

Ordinary inc	come/loss			
(Units: Billion Ye	Fuel cost a	idjustment		
	amo +91.1 bi	punt llion yen		
FY 2020	+4.2			
Apr-Dec 7.9	Increase in retail and wholesale	Increase in	/	
1.5	power sales <u>※1</u>	electricity procurement		
		expenses ※1	Year-on-Y -50.3	ear
		-53.7	0010	
				FY 2021
				Apr-Dec
				-42.3
			-0.8 Others *2	

X1 Retail and wholesale power sales, and electricity procurement expenses both exclude the impact from indirect auctions. The impact of imbalance on transmission costs has been added to the electricity procurement costs after including the impact excluding the imbalance from retail and wholesale power sales.

X2 Includes the impact of correcting consolidated discrepancies related to the appropriation of renewable energy subsidy estimates in the last year's financial results.

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#### **Profit Structure**

Operating revenue is mainly electricity sales revenue, and this is fluctuated by electricity sales volume. Expenses are mainly power purchasing costs and transmission fees of connected supply.

#### Retail electricity sales volume (EP consolidated)

Apr-Dec	150.2	134.5	-15.7
	FY2020	FY2021	comparison
			(Units: Billion kWh)

### Gas contracts (EP non-consolidated)

As of March 31, 2021	As of December 31, 2021	
Approx. 1.24 million	Approx. 1.28 million	

### Ordinary income

	(L			
	FY2020	FY2021	comparison	
Apr-Jun	11.2	-37.4	-48.7	
Apr-Sep	45.9	5.8	-40.0	
Apr-Dec	7.9	-42.3	-50.3	
Apr-Mar	6.4			

(I Inits: Billion ven)

Ordinary income/loss





### (Reference)Application of new accounting standards

- \* "Accounting standards for revenue recognition" went into effect in FY2021 and some transactions that were posted as revenue (sales) must now be listed in a different category (changes were also made to what can be posted as expenses so there was no impact on revenue and expenditure).
- Surcharges and payments are posted as increases/decreases in recovered debts (liabilities) since they are paid to the GIO.
- Subsidies are posted as decreases in expenses due to revision of the electric operators accounting rules in accordance with the new accounting standards.



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Operating revenue decreased by 756.9 billion yen as a result of the application for new accounting standards (no impact on revenue and expenditures since expenses decreased)





## (Reference) FY2021 Consolidated Performance Forecast (Overview of Each Company)

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				(Units: Billion Yen)
	FY2021 Projection (released on Jan. 31, 2022) (A)	FY2021 Projectin (released on Oct. 27, 2021) (B)	(A)-(B)	FY2020 Results
Operating Revenue	5,051.0	4,850.0	201.0	5,866.8
TEPCO Holdings	625.0	620.0	5.0	624.2
TEPCO Fuel & Power	5.0	5.0	_	8.7
TEPCO Power Grid	1,840.0	1,787.0	53.0	2,003.8
<b>TEPCO Energy Partner</b>	4,186.0	4,040.0	146.0	5,034.3
TEPCO Renewable Power	152.0	151.0	1.0	143.4
Adjustments	-1,757.0	- 1,753.0	-4.0	-1,947.9
Ordinary income/loss	-16.0	-13.0	-3.0	189.8
TEPCO Holdings	54.0	41.0	13.0	-7.9
TEPCO Fuel & Power	-22.0	-22.0	_	69.8
TEPCO Power Grid	130.0	116.0	14.0	169.0
<b>TEPCO Energy Partner</b>	-73.0	-35.0	-38.0	6.4
TEPCO Renewable Power	41.0	40.0	1.0	48.1
Adjustments	-146.0	-153.0	7.0	-95.6

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Supplemental Material



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# FY2021 3<sup>rd</sup> Quarter Financial Results

# **Detailed Information**





# **Consolidated Statements of Income**

			(Unit:	Billion Yen)
	FY2021	FY2020	Comparison	
	Apr-Dec(A)	Apr-Dec(B)	(A)-(B)	(A)/(B) (%)
Operating Revenue	3,503.5	4,103.9	-600.3	85.4
Operating Expenses	3,415.4	3,951.1	-535.6	86.4
Operating Income / Loss	88.0	152.7	-64.6	57.7
Non-operating Revenue	25.3	120.9	-95.5	21.0
Investment Gain under the Equity Method	18.7	118.0	-99.3	15.9
Non-operating Expenses	41.2	38.1	3.0	108.1
Ordinary Income / Loss	72.2	235.5	-163.3	30.7
Reserve for Fluctuation in Water Levels	_	0.0	-0.0	_
Provision or Reversal of Reserve for Preparation of Depreciation of Nuclear Power Construction	0.2	0.3	-0.0	73.1
Extraordinary Income	29.8	_	29.8	_
Extraordinary Loss	82.6	95.4	-12.7	_
Income Tax, etc.	8.8	8.5	0.3	103.7
Net Income Attributable to Non-controlling Interests	0.5	0.6	-0.1	77.2
Net Income Attributable to Owners of Parent	9.8	130.4	-120.6	7.5



			(Unit: Billion Yen)	
Item	FY2010 to FY2020	FY2021 Apr-Dec	Cumulative Amount	
♦ Grants–in-aid from Nuclear Damage Compensation and Decommissioning Facilitation Corporation				
OGrants-in-aid based on Nuclear Damage Compensation and Decommissioning Facilitation Corporation Act	<sup>*1</sup> 7,437.0	29.8	<sup>*2</sup> 7,466.9	
Note: Journal Entry: Grants-in-aid receivable from Nuclear Damage Compensation and Decommissioning Facilitation Corporation is debited on the balance sheet.				

\*1 Numbers above are those after deduction of a governmental indemnity of 188.9 billion yen, and Grants-in-aid corresponding to decontamination and other expenses of 4,695.6 billion yen respectively.

\*2 Numbers above are those after deduction of a governmental indemnity of 188.9 billion yen, and Grants-in-aid corresponding to decontamination and other expenses of 4,845.9 billion yen respectively.

#### Expenses for Nuclear Damage Compensation

<ul> <li>Compensation for individual damages</li> <li>Expenses for radiation inspection, Mental distress, Damages caused by voluntary evacuations, and Opportunity losses on salary of workers etc.</li> </ul>	2,076.1	5.1	2,081.2
<ul> <li>Compensation for business damages</li> <li>Opportunity losses on businesses, Damages due to the restriction on shipment, Damages due to groundless rumor and Package compensation etc.</li> </ul>	3,207.8	51.9	3,259.8
<ul> <li>Other expenses</li> <li>Damages due to decline in value of properties, Housing assurance damages and Decontamination costs etc.</li> </ul>	7,036.4	159.5	7,195.9
<ul> <li>Amount of indemnity for nuclear accidents from the Government</li> </ul>	-188.9		-188.9
Grants-in-aid corresponding to decontamination and other expenses	-4,695.6	-150.3	-4,845.9
Total	7,435.7	66.3	7,502.1



# **Consolidated Balance Sheets**

			(Unit: Billion Ye		
	Dec. 31	Mar. 31	Comp	arison	
	2021 (A)	2021 (B)	(A)-(B)	(A)/(B) (%)	
Total Assets	12,557.7	12,093.1	464.5	103.8	
Fixed Assets	10,548.3	10,518.0	30.2	100.3	
Current Assets	2,009.4	1,575.1	434.2	127.6	
Liabilities	9,351.6	8,950.3	401.3	104.5	
Long-term Liability	5,639.9	5,376.4	263.4	104.9	
Current Liability	3,703.0	3,565.4	137.6	103.9	
Reserve for Preparation of the Depreciation of Nuclear Plants Construction	8.6	8.4	0.2	102.7	
Net Assets	3,206.0	3,142.8	63.2	102.0	
Shareholders' Equity	3,133.4	3,121.4	11.9	100.4	
Accumulated Other Comprehensive Income	47.6	3.8	43.8	_	
Share Acquisition Rights	0.0	0.0	-0.0	55.0	
Non-controlling Interests	24.9	17.4	7.4	142.6	

<interest-bearin< th=""><th>g debt outstan</th><th>(Unit Billion Yen)</th></interest-bearin<>	g debt outstan	(Unit Billion Yen)	
	Dec. 31 2021 (A)	Mar. 31 2021 (B)	(A)-(B)
Bonds	3,140.4	2,705.4	435.0
Long-term Debt	188.8	215.9	-27.0
Short-term Debt	2,153.1	1,967.7	185.3
Total	5,482.3	4,889.0	593.2

#### <Reference>

	FY2021 Apr-Dec (A)	FY2020 Apr-Dec (B)	(A)-(B)		
ROA(%)	0.7	1.3	-0.6		
ROE(%)	0.3	4.4	-4.1		
EPS(Yen)	6.12	81.44	-75.32		

ROA: Operating Income / Average Total Assets

ROE: Net Income attributable to owners of parent / Average Equity Capital



# **Key Factors Affecting Performance**

Key Factors Affecting Performa	nce (Results)	<ul> <li>X 1 Total of EP consolidated (EP/TCS/PinT) and PG (islands, etc.)</li> <li>X 2 Total (excluding indirect auctions) of EP consolidated (EP/TCS/PinT), PG (including inter-regional), and RP consolidated (RP/Tokyo Electric Generation)</li> <li>X 3 Crude oil price for FY2021 Apr-Dec is tentative figure released on January 20, 2022</li> </ul>				
	FY2021 Apr-Dec	FY2020 Apr-Dec	[Reference] FY2020			
Total Electricity Sales Volume (Billion kWh)	168.4	167.2	231.5			
Retail Electricity Sales Volume (Billion kWh) <sub>※1</sub>	134.6	150.3	204.7			
Wholesale Electricity Sales Volume ( B i I I i o n k W h ) <sub>※2</sub>	33.7	16.8	26.8			
Gas Sales Volume (Million ton)	1.77	1.40	2.10			
Foreign Exchange Rate (Interbank; yen per dollar)	111.1	106.1	106.1			
Crude Oil Price (All Japan CIF; dollars per barrel) ※3	74.0	39.1	43.4			
Nuclear Power Plant Capacity Utilization Ratio (%)	-	-	-			
<b>Fluctuation of Foreign Exchan</b>	ge Rate>	Fluctuation of A       95     (dollar/barrel)       80     -       65     -       50     -       35     -	II Japan CIF>			
100 Apr May Jun Jul Aug Sep Oct D Electric Power Company Holdings, Inc. All Rights Re	Nov Dec	20 Feb Mar Apr May Jun Jul	Aug Sep Oct Nov Dec			

### Seasonal Breakdown of Retail Electricity Sales Volume and Total Power Generated

Retail E	electricity S	ales Volu	ime (EF	<sup>o</sup> consoli	dated)			
					Ur	nit: Billion kWh		
			FY2	2021				
	Apr-Sep	Oct	Nov	Dec	Oct-Dec	Apr-Dec		
Lighting	27.78	4.05	4.45	5.26	13.76	41.54		
Power	63.27	10.01	9.60	10.05	29.67	92.94		
Total	91.05	14.06	14.05	15.32	43.43	134.48		
			FY2	2020			[Ref.] Year-on-ye	ar Comparison
	Apr-Sep	Oct	Nov	Dec	Oct-Dec	Apr-Dec	Oct-Dec	Apr-Dec
Lighting	31.51	4.54	4.59	5.54	14.66	46.17	93.9%	90.0%
Power	71.00	11.26	10.63	11.15	33.04	104.04	89.8%	89.3%
Total	102.51	15.80	15.21	16.68	47.70	150.21	91.0%	89.5%

### **Total Power Generated**

					ι	Jnit: Billion kWh				
		FY2021								
	Apr-Sep	Oct	Nov	Dec	Oct-Dec	Apr-Dec				
Hydroelectric	7.79	1.04	0.83	1.09	2.96	10.75				
Thermal	0.08	0.01	0.01	0.01	0.04	0.12				
Nuclear	-	-	-	-	-	-				
Renewable etc.	0.04	0.00	0.00	0.01	0.02	0.05				
Total	7.91	1.06	0.84	1.11	3.01	10.92				

			[Ref.] Year-on-year Comparison					
	Apr-Sep	Oct	Nov	Dec	Oct-Dec	Apr-Dec	Oct-Dec	Apr-Dec
Hydroelectric	7.66	0.81	0.69	0.91	2.41	10.07	122.9%	106.7%
Thermal	0.08	0.01	0.01	0.01	0.04	0.12	99.7%	97.4%
Nuclear	-	-	-	-	-	-		•
Renewable etc.	0.03	0.00	0.00	0.00	0.01	0.04	128.7%	124.7%
Total	7.78	0.83	0.71	0.93	2.46	10.23	122.5%	106.7%

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\*Total power generated includes part of consolidated subsidiaries.



# **Schedules for Public Bond Redemption**



Note: The amount redeemed for Apr. - Dec. of fiscal 2021 totaled <u>45.0 billion yen</u>.

### TEPCO

# Series of efforts including physical protection



### Improvement action plan for the nuclear material protection incidents Overview of causal analysis and improvement measures

- On September 22, 2021, TEPCO submitted a report summarizing the results of the causal analysis and improvement measures for the unauthorized ID card use and the partial loss of function of nuclear materials protection equipment incidents to Nuclear Regulation Authority.
- Causal factors to the two incidents were identified through causal analysis, and three root causes were extracted. Measures against the three root causes, nuclear security culture, safety culture and individual causal factors were implemented.
- The improvement measures plan is being executed, actively incorporating lessons learned in reviews by other operators, good practices, the Independent Review Committee's proposals on recurrence prevention measures, and opinions and knowledge of external third party experts.



### Improvement action plan for the nuclear material protection incidents Major initiatives so far (1)

### Establishment of an Expert Nuclear Security Assessment Committee

- > To ensure improvement actions permeate the organization, an Expert Nuclear Security Assessment Committee was established on December 7, 2021 where TEPCO's nuclear security initiatives are assessed by external nuclear security experts.
- > The first meeting was held on December 23, 2021 at the Kashiwazaki-Kariwa Nuclear Power Station.

Reorganizing the physical protection division

The division was reorganized to strengthen effectiveness

the technical specifications on December 24, 2021)

the Site Superintendent shall be newly established to

> The Protection Management Group shall be divided into

duties; and, these groups shall be removed from the

supervision of the Security Management Department

chart)

(2) in the right chart)

as physical protection and cyber security (1) in the right

groups in charge of equipment management and security

Preparedness and Safety Department and put under the

as physical protection division managers didn't have an

<Overview of the Expert Nuclear Security Assessment Committee>

#### ○Items to be assessed

- The status of improvement action plan initiatives
- The status of initiatives to cultivate nuclear security culture etc.

#### **O**Frequency

- Assessment of semi-annual self-assessments
- Semi-annual reports and recommendations to the President etc.

#### **Committee members**

- Mr. Isao Itabashi
- Chief of institute, Council for Public Policy ·Mr. Tomonori Iwamoto Secretary-General, Institute of Nuclear Materials Management (INMM) Japan Chapter
- Mr. Yoshihide Kuroki Ms. Naoko Noro
  - Assistant Technical Director, International Capacity-Building Support Office, Integrated Support Center for Nuclear Nonproliferation and Nuclear Security, Japan Atomic Energy Agency

Senior Managing Director, All Japan Security Service Association



1st meeting



Chairman Isao Itabashi giving his opening remarks

#### Measure to address the three root causes



### Improvement action plan for the nuclear material protection incidents Major initiatives so far (2)

#### Dialogue between the field and management

- Management will continually engage in dialogue with the field to personally identify problems and concerns on the field and improve upon them together with the field.
- President Tomoaki Kobayakawa visited the field to talk to station personnel engaging in physical protection work.

#### Creating an environment conducive to tight security

- Special management who have the responsibility to implement tight security and expert instructors who have outside security experience are routinely stationed at the field to strengthen the security structure. They routinely supervise security guards' behavior.
- The Disaster & Industrial Accident Prevention Department General Manager visits the field to check the field with his own eyes and talk directly with security. He swiftly identifies challenges on the field and implements improvements.

President Kobayakawa talking to station personnel



Current security structure

Periodically performs

work on the field

Special management

(Person responsible for security)

> Head of security

Security chie

In-house

security guards

Department General

GM

Member

manager

Measures to foster a strong culture

Site Superintendent Inagaki talking to station personnel



#### Measures to address individual causal factors

Person responsible for security and instructors checking the field



Checking the field and actual equipment to strengthen the security structure



☆The parts written in red was assigned in April, 2021.

Physical

Instructor Coaches/supports security guard

Department General Manager Protection

Headquarters

### Status of NRA additional nuclear material protection inspections

- ✓ The NRA started the Additional Inspection (Phase II) for nuclear material protection on October 20, 2021.
- In the inspection, the NRA confirms the details of the causal analysis of both incidents and how measures are being implemented on the field.
- ✓ We will continue to respond sincerely to NRA inspections and steadily implementing corrective actions.

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March and onwards	
Reports to NRA Inspection items	9/22 Received TE	PCO report	→Progres	ss made in the	inspection v	will be provided	to the Committee as needed	Delibera of r
Items that require additional fact-checking							33	Deliberate on the change of classification
① Identifying the characteristics of TEPCO	Inv	estigate actua	al conditions	to see if proble	ems are is a	company-wide	issues	
② Relationship between Kaizen activities and physical protection measures	١n	vestigate the i	mpact that th	e quality of nu	clear materi	al protection m	leasures	ې د
③ New items that need to be confirmed		Investig	ate alert mec	hanisms	140340			Summarize inspection
Items that need to be analyzed more accurately							>>	pectic
O Physical security culture and safety culture	Organize in	dividual caus	al factors and	d root causes,	analyze and	l assess the cu	Iture as the NRA	n results
Status of improvement action plan and its impact							33	1
O Improvement action plan	Require 1	EPCO to fles	sh out the pla	n, check the in	nplementatio	on status and i	mpact of the plan	

### Schedule for Additional Inspection (Phase II)

(Source) Nuclear Regulation Authority report on October 20, 2021

T=PCC
# Status of general inspections implemented after discovering partially incomplete safety measure renovations

- The reform team established in light of the partially incomplete safety measures renovations is conducting general inspections for not only the incomplete renovations but for the following items identified by the NRA.
  - Partially incomplete testing for the technical standards conformance confirmation of the welds
  - Installation of some fire detectors in areas that do not meet requirements

## [Status of general inspections]

Title		General inspection Status of corrective action works		Pre-service operator inspection	
	Damper installation	Completed	Completed		
	Fire detector installation	Completed	Completed	To be conducted after corrective action works	
Incomplete construction	Protection of the penetration against inundation (portion announced in February 2021)		Completed		
	Protection of the penetration against inundation (portion announced in September 2021)	Being conducted	Being conducted		
	Protection of the penetration against fires				
	Expansion joints replacement	Completed	To be conducted	To be conducted after corrective action works	
Weld adequacy confirmation	Adequacy confirmation (documents)				
	Pipe replacements	Completed			
	Instrumentation replacements				
Fire detector installation	Detectors found in February 2021	Completed	Completed	To be conducted after corrective action works	
	Detectors found March to September 2021	Completed	To be conducted		

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# The Current Status of Fukushima Daiichi Nuclear Power Station and Future Initiatives



# **Current Situation and Status of Units 1 through 4**



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# Milestones and progress in the 5<sup>th</sup> revision of Mid-and-Long-Term Roadmap(December 2019)

Maintain Overall F Dec. 2011	ramew Nov. 2	ork of Decommissioning Schedule 2013	To be dela due to the Dec.	effects of COVID-19 2021 End of 2	$30 \sim 40$ years after cold shutdown
Phase 1		Phase 2		Phase 3-(1)	Phase 3
Period until start of spent fuel removal (within 2 years)		Period until start of fuel debris retrieval (within 10 years)		Period until completion of decommissioning (30-40 years later)	
Major mileston	es				
Contaminated Water management	···· <b>,</b>			Within 2020 Within 2025	Completed Have reduced the amount to approx. 140m <sup>3</sup> /day (FY2020)
Stagnant water	Comple	te stagnant water treatment in buildings <sup>%1</sup>		Within 2020 <sup>×1</sup>	Completed
treatment	Reduce the amount of stagnant water in buildings to about a half of that in the end of 2020		FY2022-2024	Ongoing	
Fuel removal	removal Complete of fuel removal from Unit 1 – 6		Within 2031	Completed removing fuel from Units 3 and 4	
Complete of installation of the large cove Start fuel removal from Unit 1		te of installation of the large cover at Unit 1		Around FY 2023	Working on assembling the temporary gantry
		el removal from Unit 1		FY2027-2028	Same as above
	Start fue	el removal from Unit 2		FY2024-2026	Currently preparing for ground improvement work
Fuel debris retrieval		Start fuel debris retrieval from the first Unit (Start from Unit 2, expanding the scale gradually)		Within 2021 *To be delayed by around a ye due to the effects of COVID-19	ear 9 Conducting performance verification tests for the trial retrieval device
Waste management	Technic and the	al prospects concerning the processing/ disposal ir safety	oolicies	Around FY2021	Completed <sup>×3</sup>
	Eliminat waste <sup>≫</sup>	ting temporary storage areas outside for rubble an	d other	Within FY2028 <sup>%2</sup>	Rubble is being removed based on the storage maintenance plan

X1:Excluding the reactor buildings of Units 1-3, process main buildings, and High temperature incineration building.

※2:Excludes water treatment secondary waste and items that will be reused .

3: Considered finalized as "Technical outlook on methods for treatment and disposal of solid waste, and their safety" was included in the "2021 Technical Strategy for Decommissioning of TEPCO Holdings' Fukushima Daiichi Nuclear Power Station" published by the Nuclear Damage Compensation and Decommissioning Facilitation Corporation (published on October 29, 2021).

# Fuel Debris Retrieval Schedule and Process Based upon the Mid-to-Long Term Decommissioning Implementation Plan 2021

- On March 25, 2021, the Mid-and-Long Term Decommissioning Action Plan 2021 was published, an updated version of the Mid-and-Long Term Decommissioning Action Plan 2020 given the results of FY2020.
- At Unit 2, the scale of retrieval was gradually expanded from trial retrieval, and the knowledge obtained will be used to further expand the scale of retrieval from Units 1 & 3.



\*These tasks shall be carried out for Unit 3 first and then examined with the intention doing the same for Unit 1



# **Contaminated water measures**

 Progress is being made on the three contaminated water initiatives detailed in the 5<sup>th</sup> revision of the Mid-and-long-term Roadmap (December 2019).

- (1) Initiative to promote contaminated water measures following the three basic policies (1) Remove the contamination source, (2) don't let water near the contamination source, (3) don't let contaminated water leak out
- The strontium treated water treated using equipment other than multi-nuclide removal equipment, is treated again using multi-nuclide removal equipment and stored in welded tanks.
- Groundwater levels around the building have been kept stable at low levels through the use of land-side impermeable walls, subdrains and other multi-layered contaminated water management measures. The amount of contaminated water generated in a rain storm has also been falling as a result of repairs of building roofs and the paving over of the site premises. The amount of contaminated water generated has fallen from approx. 540 m<sup>3</sup> /day (May 2014) from before the measures were implemented to approx. 180 m<sup>3</sup> /day in FY2019 to 140 m<sup>3</sup> /day in FY2020.
- More contaminated water reduction measures will be implemented to reduce levels to below 100 m<sup>3</sup> /day by FY2025.

#### (2) Initiatives for the completion of retained water treatment

- Construction to build another retained water transfer equipment is underway to reduce building retained water levels according to plan. The floors of buildings other than the reactor buildings for Units 1-3, main processing building, and high temperature incinerator building is now consistently exposed.
- In 2020, treatment of retained water in buildings other than the reactor buildings for Units 1-3, main processing building, and high temperature incinerator building was completed. Going forward, water levels in the reactor building will be halved by FY2022 to FY2024 compared to end of FY2020 levels.
- Measures to reduce dose levels in and stabilize the zeolite sandbags that were installed in the basement of the main processing building and high temperature incinerator building immediately after the Accident as part of contaminated water measures, are being discussed.



### TEPCO Holdings' Response Regarding the Handling of ALPS Treated Water - 1 TEPCO Holdings' Approach to the Discharge of ALPS Treated Water

- The "Basic Policy on handling of ALPS treated water at the Tokyo Electric Power Company Holdings' Fukushima Daiichi Nuclear Power Station" (hereinafter government policy) was decided at the 5th Inter-Ministerial Council for Contaminated Water, Treated Water and Decommissioning Issues held on April 13, 2021.
- ✓ TEPCO will work to ensure that responses based on this government policy will be implemented.

<TEPCO Holdings' Approach to the Discharge of ALPS Treated Water>

Basic position	•	In discharging ALPS treated water <sup>*1</sup> into the sea, we will ensure that the discharged water is safe by conforming to safety standards based on laws, and relevant international laws and practices, while conducting radiation impacts assessments on people and the environment <sup>*2</sup> . Thus we will secure the safety of the public, the surrounding environment as well as agricultural, forestry and fishery products.
Strengthening and enhancing the scope of m o n i t o r i n g	•	In discharging ALPS treated water into the sea, we will further expand and strengthen our sea area monitoring efforts to minimize the adverse impacts on reputation. Objectivity and transparency of monitoring will be secured by asking for the cooperation of experts and the people in the agricultural, forestry, and fishery industry.
Preventing leaks from tanks	•	On-site tank that store ALPS treated water will be continuously monitored for leaks and will be maintained and managed appropriately in preparation for natural disasters.
Information dissemination and minimizing rumors	•	To dispel concerns and foster understanding domestically and internationally, we will continuously provide accurate information in a highly transparent manner, regarding the impacts on the environment such as the results of measurements/analysis on the concentration of radioactive materials in the ALPS treated water before discharge; status of the discharge and the results of sea area monitoring; as well as the results of assessment of the radiation impact on the public and the environment. To minimize the adverse impacts on reputation, we will do our utmost in supporting industries that may be subject to potential adverse impacts on reputation at each stage from production, processing, distribution, and consumption (cultivating new markets).
A p p r o p r i a t e c o m p e n s a t i o n	·	If reputational damage is incurred as a result of the discharge of ALPS treated water despite these efforts, we will provide swift and appropriate compensation.
±4 147 / // // // // // //		

•\*1 Water that has been purified and treated in ALPS until levels of radioactive materials excluding tritium is lower than the regulatory standard value for safety.
•\*2 Includes any latent effects the ALPS treated water may have on the marine environment

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TEPCO

### TEPCO's Response on the Handling of ALPS Treated Water – 2 Status of Review Regarding Design and Operation of Necessary Facilities and plan going foward

- In August 2021, TEPCO released status of review regarding the handling of ALPS treated water at the Fukushima Daiichi NPS. In December of the same year, the "Application Documents for Approval to Amend the Implementation Plan for Fukushima Daiichi Nuclear Power Station Specified Nuclear Facilities" that summarized the details was submitted to the NRA.
- To initiate discharge around spring of 2023 as set forth in the Basic Policy, we will proceed with the review by continuing to listen to opinions from people in the region and parties concerned carefully and reflecting them onto facility design and operations as appropriate.



# **Other Initiatives**



## New services to realize a carbon neutral society (Initiative of demand side)

- A new service "Ene-Kari Plus" and a new rates plan "Living Smart Plan" that propose a new way of living by introducing solar panels, storage batteries, and Ohisama Eco Cute to homes in order to realize a carbon neutral society in the household sector, were launched (TEPCO Energy Partners will start receiving applications in the Kanto region on February 1, 2022.)
- The goal is to secure over 820,000 additional electrification contracts (over 320,000 contracts for the Living Smart Plan) by FY2030. We will continue to actively promote carbon neutrality through the development of new services.

The new way of living brought to you by TEPCO Energy Partners -Generate, store and use electricity using solar power-



<tepco holdings=""></tepco>			
October 29, 2021	Mitsubishi Motors announced its participation in the demonstration test to be conducted at the Oyama Post Office and Numazu Post Office by TEPCO Holdings together with Japan Post Holdings and Japan Post Service to contribute to carbon neutrality. Demonstration tests, where data on the driving data and battery levels of the electrical vehicles (EVs) the postal service uses for collection and distribution will be gathered and analyzed, are being conducted to improve the performance of all commercial EVs in addition to the postal service's EVs. (Demonstration tests started at the Oyama Post Office on November 10, 2021 and at the Numazu Post Office on November 18, 2021)		
November 1, 2021	In Numazu City, Shizuoka Prefecture, launched on a trial basis a service called "Green Charge Sharing" (tentative name), where quick chargers charged using renewable energy sources are shared among multiple corporate EV users, for corporate customers looking to introduce electric vehicles.		
December 3, 2021	Launched BonQuish, a service where breakfast dishes that use domestic fishery products are delivered to homes, together with Family Network Systems Co., Ltd. to increase the amount of fish consumer in Japan.		
December 14, 2021	Jointly established the Tokyo Electric Power Company Timeless Capital No.2 Investment Business Limited Liability Partnership to buy out small and medium-sized companies in water-related industries for investment purposes with Tokyo Electric Power Timeless Capital, Inc. (TTLC) as the operator (established on December 6, 2021).		
December 21, 2021	Signed a Memorandum on Mutually Cooperating on Carbon-neutral Technology with the Electricity Generation Authority of Thailand to further strengthen the collaborative relationship for mutual cooperation in carbon-neutral technologies (signed December 20, 2021).		
January 7, 2022	Started a development and technical demonstration of a new catalyst for manufacturing ammonia as part of efforts to build a fuel ammonia supply chain, with Chiyoda Corporation and JERA given the adoption of the project as part of the Green Innovation Fund's commissioned and subsidized projects of the New Energy and Industrial Technology Development Organization (NEDO).		

### <TEPCO Power Grid>

- November 1, 2021 Obtained priority negotiation rights for the maintenance and operation of transmission lines for the Triton Knoll Wind Farm (capacity: 860,000 kW), about 32km off the coast of Lincolnshire to the east of England in the UK, jointly with Equitix, Ltd. a UK infrastructure fund (obtained October 28, 2021).
- November 25, 2021 Signed an agreement on Information Gathering and Confirmation Survey on the Electricity Sector for Low-carbonization (decarbonization) in Indonesia jointly with TEPCO HD, JERA, Tokyo Electric Power Service Co., Ltd. and Japan International Cooperation Agency (JICA).

artner>
Launched "Hamakko Electricity," an electricity rate plan for businesses in Yokohama City that uses environmental value derived from biomass power generation at incineration plants owned by Yokohama City and environmental value derived from post-FIT solar power generation in residential homes procured by TEPCO Energy Partners, with the aim of contributing to the promotion of environmental measures in Yokohama City (started sales on November 1, 2021).
Launched a Partner Introduction Service for corporate customers as an add-on to other special services to provide additional support to business owners as part two of the TEPCO Management Support service launched in August 2021 to solve the problems facing business owners severely impacted by slow sales, costs of implementing infection prevention measures, increase in purchase prices, and labor shortages due to restrictions placed on the movement of people in COVID-19 response.
In the FY2021 assessment of the new Energy Conservation Communication Ranking System (trial) launched by METI's Agency for Natural Resources and Energy Obtained, obtained four stars for the city gas retail operator division and a full five starts for the retail electricity operator division as a company that is actively disseminating information on energy conservation.
Conducted a demonstration test where organic waste emitted and incinerated in office buildings is turned into fuel at the Shinjuku Center Building together with Tokyo Tatemono Co. ,Ltd., Meiji Yasuda Life Insurance Company, Japan Prime Realty Investment Corporation, Sompo Japan, and Sustainable Energy Development, to build a circulating society (conducted from December 15 to 17, 2021).

### <TEPCO Renewable Power>

December 1, 2021 Started demonstration operation (1 unit at 3,600 kW output) of the TetraSpar Demonstrator at the Marine Energy Test Cetre near Stavanger in Norway owned jointly with the Royal Dutch Shell plc (headquartered in the Netherlands), RWE Renewables GmbH (headquartered in Germany), Stiesdal Offshore Technologies A/S (headquartered in Denmark) through the operating company TetraSpar Demonstrator ApS (headquartered in Denmark) (started on November 29, 2021).
 January 21, 2022 Together with TEPCO HD, applied to the Technological Development Project to Reduce the Cost of Manufacturing and Installing the Foundation of Floating-type Wind Farms [Large Spar Floating-type], part of the Green Innovation Fund's "Project for Realizing Cost Reductions in Offshore Wind Power Generation" hosted by the New Energy and Industrial Technology Development Organization (NEDO) and was selected.

