

# FY2008 Business Management Plan Presentation Materials

March 27, 2008 Masataka Shimizu Executive Vice President Tokyo Electric Power Company



#### Regarding Forward-Looking Statements (Performance Projections)

Certain statements in the following presentation regarding Tokyo Electric Power Company'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 the Company's actual results to differ materially from the forward-looking statements (performance projections) herein.



# FY2008 Business Management Plan and Electricity Supply Plan



1. Win the Trust of Society

#### 2. Compete and Succeed

3. Foster People and Technologies

## Construct Safe, Secure, Disaster-Resistant Nuclear Power Stations 4



### Securing a Stable Supply of Power – Demand and Supply Outlook for summer 2008

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Demand and Supply	y Outlook	[Major Supply Capacity Countermeasures]						
for sum	mer 2008 (Million kW)		Station Name	Output (Million kW)	Fuels	Operational Resumption Date (Start of Trial Operations)		
	FY2008 Summer (August)		Kawasaki Unit 1-2	5	LNG	July, 2008 (October 25, 2007)		
Peak demand (1-day peak demand	Peak demand 61.1		Futtsu Unit 4-1	5.07	LNG	July, 2008 (December 12, 2007)		
at generation end)	01.1	operations				February, 2009 (Currently considering moving the start of trial		
Supply capacity	64.7		Kawasaki Unit 1-1	5	LNG	operations forward about 6 months from initial plan of November 2008)		
Reserve power	3.6		Yokosuka Unit 2 GT	1.44	Light oil and city gas	September 11, 2007		
Including purchased power			Goi Unit 4	2.65	LNG	December 18, 2007		
of new power generation facilities(Ka	is self-generated power, trial operation awasaki Unit 1-1) etc. are not included	Resumption of operations	Yokosuka Unit 7	3.5	Heavy oil and crude oil	Later March, 2008		
			Yokosuka Unit 8	3.5	Heavy oil and crude oil	By summer 2008 (scheduled)		
			KASHIMA KYODO ELECTRIC POWER COMPANY Unit 2	3.5	Blast furnace gas and heavy oil	By summer 2008 (scheduled)		

Resumed operations after decommissioning

 Supply capacity for the next three fiscal years (FY2008-FY2010) does not include the Kashiwazaki-Kariwa Nuclear Power Station because its operating plan has not yet determined.

Although TEPCO's estimated peak demand (1-day peak demand at generation end) for the summer of FY2008 is about 61.1 Million kW, the company estimates that it can secure supply capacity of approximately 64.7 Million kW through measures including starting operations at new generation facilities and resuming operations at thermal stations under the long-term shutdown.

# Implement Thorough Cost Reductions

- ✓ In FY2007, we put together our organization to cost reductions in areas including maintenance and other expenses, expecting to come off to reach the ¥80 billion target (compared with our initial plan).
- ✓ In FY2008, the company will continue implementing drastic and innovative cost reductions. TEPCO group is aiming to reduce costs of more than ¥100 million (compared with our initial FY2007 plan).

#### Study and implement drastic cost reductions

- Pursue more extensive Company-wide cost reductions
- Further study improvements including the implementation of new construction technologies and methods, as well as the optimization, simplification and standardization of tasks
- Prioritize construction works based on facility risk evaluations using accumulated facility data and technical knowledge
- Review business processes based on analysis of Group company cost structures and accelerate specification improvements including rationalization and standardization (see tables on right)





- ✓ TEPCO estimates its FY2007 CO₂ emissions increase by approximately 30% more than initially planned due to the shutdown of the Kashiwazaki-Kariwa Nuclear Power Station.
- ✓ The Group will make maximum efforts to achieve the Management Vision 2010 global environment contribution target of reducing CO₂ emission intensity 20% below FY1990 levels from FY2008-FY2012 (five-year average figure).





Numerical Targets of Management Vision 2010

Efficiency Gains Targets

Improve efficiency by at least 20% compared with FY2003 with facility safety and securing quality as major premises

Balance Sheet Improvement Targets

Equity ratio of at least 25%

Business Growth Targets - Expansion of New Electricity Sales Volume

Electricity sales volume of at least 10 billion kWh (cumulative total in FY2004 - FY2010 )

Business Growth Targets - Operating Revenues and Income from Business other than Electric Power

In business other than electric power: operating revenues<sup>(1)</sup> of at least 300 billion yen, operating income <sup>(2)</sup> of at least 50 billion yen

of at least 50 billion yen Note1:Total of all sales vis-a-vis external customers of consolidated subsidiaries and incidental business Note2: Total of all operating income from consolidated subsidiaries and incidental

**Global Environment Contribution Targets** 

Reduce CO<sub>2</sub> emission intensity by 20% compared with FY1990 (average FY2008 - FY2012)

- ✓ TEPCO has not set numerical targets for the FY2008 management plan because of the condition of the Kashiwazaki-Kariwa Nuclear Power Station.
- However, TEPCO will continue making maximum efforts to achieve the numerical targets of Management Vision 2010.



### [Electricity Supply Plan] Demand Outlook

ICPLL									(Billion kWh,	Million kW, %)			
		FY2	006	FY20	007	FY20	800	FY2017	Annual (	growth rate	Cor	nparison with p	previous plan
		(acti	ual)	(estim	ate)	(proje	cted)	(projected)	(FY2	006-17)	(as of FY2016)		2016)
	Lighting	-2.1	(1.4)	4.4	(1.4)	0.3	(2.0)				d)	Current plan	Previous plan
		шуншу	93.2		97.3		97.6	111.7	1.7	(1.5)	lume	210 0	210 Q
	Low voltage nower	-6.7	(0.6)	1.9	(-3.9)	-5.7	(-1.1)				S VO	317.0	517.0
			10.5		10.7		10.1	9.8	-0.6	(-0.7)	Sale	Difference:	
	Other nower	-5.1	(-5.1)	-2.7	(-2.9)	-3.1	(-2.8)				0,	-0.8 billion k	Wh (-0.3%)
			2.2		2.1		2.1	1.5	-3.4	(-3.4)			
-	2-2 Pagulatad sagmant		(1.2)	4.0	(0.7)	-0.3	(1.7)				7	Current plan	Previous plan
	negulaleu segmeni		105.8		110.1		109.7	123.0	1.4	(1.3)	nan	61 70	63.03
	l iheralized segment	1.0	(1.6)	2.8	(2.0)	-0.3	(0.5)				: der	01.77	03.75
			181.8		186.8		186.3	199.3	0.8	(0.8)	Peak	Difference:	
Tota	l electricity sales volume	-0.4	(1.5)	3.2	(1.5)	-0.3	(0.9)					-2.14 million	kW (-3.3%)
TOIL	recencity sales volume		287.6		296.9		296.0	322.3	1.0	(1.0)			
	Peak demand	-3.8	(-0.7)	6.7	(0.2)	-0.8	(1.7)						
(3-da	y average at transmission end)		55.27		58.96		58.47	62.36	1.1	(0.8)			
(1-day	peak demand at generation end)		58.06		61.47		61.10	-		-			

Notes: Upper figures for FY2006, FY2007 and FY2008 indicate percentage change compared to the previous fiscal year. Figures in parentheses are adjusted for the influence of air temperature.

- ✓ TEPCO estimates that electricity sales volume in FY2008 will be 296 billion kWh, down 0.3% from a year earlier (up 0.9% adjusted for the influence of air temperature and the leap year) due to factors including lower demand resulting from the lack of the heat wave of the previous summer and intensified competition from new entrants. Estimated peak demand is 61.10 Million kW (1-day peak demand at generation end).
- ✓ The Company expects electricity sales volume growth to average 1.0% annually from FY2006-17 and peak demand to increase about 1.1% (increases of 1.0% and 0.8%, respectively, adjusted for the influence of air temperature and leap years) due to factors including intensified competition with companies offering other forms of energy and progress in energy conservation.

## [Electricity Supply Plan] Supply Capacity Outlook (policy)



- TEPCO will continue to promote the best mix of power sources over the medium to long term while considering supply stability, economy and environmental concerns, including CO<sub>2</sub> emissions.
- ✓ However, with existing thermal generation facilities now operating at high utilization rate in response to the shutdown of the Kashiwazaki-Kariwa Nuclear Power Station and taking into account the risk of suspension of operations due to facility aging, the company is reviewing measures such as moving forward the start of operations at some new thermal generation facilities.



### [Electricity Supply Plan] Supply Capacity Outlook

		Location/Name	Output/Scale	Start of commercial operation	Start of commercial operation (previous plan)
		Fukushima Daiichi Units 7 and 8	1.38 million kW ea.	October 2014, October 2015	October 2013, October 2014
	Nuclear	Higashidori Units 1 and 2	1.385 million kW ea.	<u>December 2015</u> Fiscal 2018 or later	December 2014 Fiscal 2017 or later
Image: Provide a construction of the system of th	1 million kW	Fiscal 2013	Fiscal 2014 or later		
Electric newsr		Hirono Unit 6	0.6 million kW	Fiscal 2013	Fiscal 2014
development plans		Futtsu Unit 4 group	1.52 million kW	July 2008, <u>Dec. 2009</u> , July 2010	July 2008, July 2009, July 2010
	LNG thermal	Kawasaki Unit 1 group	1.0 million kW	July 2008, <u>Feb. 2009</u>	July 2008, July 2009
		Kawasaki Unit 2 group	1.5 million kW	Fiscal 2013 (Unit2-1) Fiscal 2018 or later (Unit2-2,2-3)	Fiscal 2017 or later
	Hydroplactic	Kazunogawa	0.8 million kW	Fiscal 2018 or later	Fiscal 2017 or later
	TIYUIUEIECIIC	Kannagawa	2.35 million kW	July 2012, <u>Fiscal 2018 or later</u>	July 2012, Fiscal 2017 or later
		Naka-Tokyo Trunk Line, additional line (275 kV)	16.0 km	December 2008	October 2008
	Transmission	Yokohama Kohoku Line, addition (275 kV)	16.8 km	June 2009	June 2009
	mansmission	Higashishinjuku Suidobashi Line, new construction (275 kV)	6.0km	April 2010	-
		Nishi Joubu Trunk Line, new construction (500 kV)	112 km	May 2012	May 2012
Supply facility plans		Keihin Substation, replacement (275 kV)	220 MVA removed 450 MVA installed	June 2010	-
	Transformation	Shin-Furukawa Substation, replacement (500 kV)	1,000 MVA removed 1,500 MVA installed	June 2010	-
		Keihin Substation, replacement (275 kV)	220 MVA removed 450 MVA installed	March 2011	-
		Shin-Fukushima Substation, replacement (500 kV)	1,000 MVA removed 1,500 MVA installed	December 2011	December 2008
	Wide-area	Isogo New Unit 2 (coal thermal, with J-POWER)	0.6 million kW	July 2009	July 2009
Interregional	generation	Ohma (nuclear, with J-POWER)	1.383 million kW	March 2012	March 2012
management	Wide-area	New construction at Higashi-Shimizu FC	0.3 million kW	December 2014 (partial	September 2011 (partial
	interconnection	(by Chubu Electric Power Co., Ltd.)	capacity	operation from March 2006)	operation from March 2006)
Power plants decommission plan	LNG thermal	Yokohama Unit 5 and 6	0.175 million kW 0.35 million kW	Calling off the decommission plan	March 2012

Note: Underlined dates have changed from the previous plan. Red: postponement of theplan, Blue: moving forward the operation plans and others





- TEPCO is steadily implementing measures necessary for ensuring stable supply, public safety and facility soundness.
- ✓ However, because of a severe earnings environment TEPCO will make selective capital expenditures averaging ¥630 billion annually for the three years FY2008-FY2010.\*
  - Generation facilities (approx. ¥210 billion); supply facilities (approx. ¥320 billion): Despite factors including the
    moving forward of the start of operations at new thermal generation facilities (generation) and progress in trunk
    transmission network expansion work (supply), capital expenditures will be reduced ¥10 billion from the previous
    plan in both areas because of such improvements as more efficient facility configuration and rationalization of
    designs and processes.
  - Other business (approx. ¥110 billion): Other capital expenditures, such as for nuclear fuel, are expected to rise ¥10 billion from the previous plan due to factors including higher uranium prices.

\*Capital expenditures for earthquake resistance and disaster prevention improvement works at Kashiwazaki-Kariwa and other nuclear power stations are still under study and therefore not included.

			FY2006	FY2007		FY2008	FY2009	
				(actual)	(estimate)	(previous plan)	(planned)	(planned)
			Hydroelectric	12.5	10.9	( 8.3)	12.7	13.5
ditures		Thermal	72.7	58.0	( 69.5)	82.1	65.9	
			Nuclear	43.4	65.4	( 81.4)	77.8	121.2
			Power sources subtotal	128.7	134.3	( 159.2)	172.6	200.6
pen			Transmission	95.8	154.9	( 162.7)	141.9	165.6
II EX			Transformation	55.6	41.0	( 47.8)	39.4	64.0
apita			Distribution	137.3	127.6	( 136.7)	132.8	123.7
Ű			Supply facilities subtotal	288.9	323.5	( 347.2)	314.1	353.3
		N	luclear fuel and others	78.6	112.2	( 102.4)	115.9	97.5
			Total	496.3	570.0	( 608.8)	602.6	651.4

Note: Capital expenditures for earthquake resistance and disaster prevention improvement works at Kashiwazaki-Kariwa and other nuclear powerstations are still under study and therefore not included.

(Billion yen)



### [Reference]

## The Present Status of the Kashiwazaki-Kariwa Nuclear Power Station and Future Initiatives

- Progress & Key Changes since the 3rd Quarter Announcement on January 30, 2008 -



#### **Facility Inspection**

- The inspections of all seven reactors finished according to the initial schedule with the completion of the Phase 3 inspection of Unit 3 on February 19, 2008. The inspections found no abnormalities affecting facility functions or structures.
- Detailed turbine inspections have been under way for Unit 7 since December 1, 2007. On March 3, 2008, damage was confirmed in one part of the base of a single rotor blade at stage 14 (turbine side) in low-pressure turbine C.

In addition to the damaged rotor blade at stage 14, further detailed inspections including penetrant testing, magnetic particle testing and other nondestructive inspections confirmed indicative patterns on the bases of 17 of the 151 non-damaged rotor blades. TEPCO will therefore expand the scope of detailed inspections. TEPCO will consider inspections of other turbines based on the results of detailed inspections and surveys of damage causes at Unit 7.

#### **Building and Structure Inspection**

- Results of the inspection of the earthquake-resistant wall of the Unit 7 reactor building, except one portion, are as follows.

It was confirmed that the width of the crack believed to have been caused by the earthquake is within permissible limits, and that there is no flaking or peeling.

(Reported March 11, 2008 to the Subcommittee on Anti-quake Structural Designs (Structural Working Group).)

#### Earthquake-Response Analysis

 Earthquake-response analysis has been completed for key equipment in the Unit 7 reactor building. The analysis confirmed that the earthquake response of all equipment was within permissible limits. (Reported February 6, 2008 to the Sub-working Group on Assessment of Facility Integrity (Sekimura Subworking Group).)



#### Status of Inspection and Evaluation Plan Submissions

- TEPCO has submitted separate plans for facilities and for buildings and structures.
- TEPCO is faithfully completing plans for the remaining reactor units and will quickly submit them as soon as they are prepared in order to implement soundness evaluations sequentially.

#### Schedules for inspection and evaluation plan of facility soundness



Note: Schedules are subject to change due to the progress of the inspection and evaluation

# [Facility Soundness Evaluation] Investigation and Analysis Schedule -2

## TEPCO presented an interim report on the Unit 7 Facility Soundness Evaluation to the Sekimura Sub-working Group on March 27, 2008.

#### **Interim Report Positions**

- Facility investigations are progressing, and basic inspections of facilities important to reactor safety including visual inspections and operational trials are essentially complete (excluding leakage trials).
- TEPCO has obtained results from earthquake-response analysis of facilities important to seismic safety that are installed in reactor buildings.

TEPCO has put together a facility soundness interim report based on the results obtained to date. We plan to present an Interim Report to the government taking into account the deliberations of the Sekimura Sub-working Group and other bodies.

#### **Interim Report Summary**

- Facility inspections so far have determined abnormalities in 34 cases.
- Of these, 10 were related to facilities important to nuclear reactor safety, but 7 of them were judged to have not been caused by the earthquake, and detailed study will be done of the remaining 3 to determine factors including reasons and particulars.
- Earthquake-response analysis to date has shown all facilities were within permissible limits.

#### **Future Plans**

- TEPCO will steadily continue with unfinished inspection items and earthquake-response analysis and, when completed, will conduct a final comprehensive evaluation.
- For facilities damaged by the earthquake TEPCO will take steps including replacing damaged parts and studying the causes of the damage.

#### Carthquake-Resistance Improvement Initiatives Determination of Ground Movement Standard (Ss) -1

Evaluation of the faults: on page19

Based on the results of geological surveys and other information, TEPCO evaluated active faults in the vicinity and reported its findings to the Subcommittee on Anti-quake Structural Designs (Joint Working Group) on March 27, 2008.

- TEPCO reevaluated active land and offshore faults based on geological surveys using the latest techniques.

- Reevaluated the length of active faults
- Took into account linkage in an area where faults have simultaneous movement
- The Company investigated and confirmed that the faults identified within the site at the time of construction approval (Beta fault and F-3 fault) did not move during the earthquake and are not active faults.

The results of these geological surveys and evaluations are properly reflected to ground movement standard (Ss)

Operational Focus		2007					2008			
		Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. or later
	Active offeners faults		Su	rvey						
Geological surveys	Active offshore faults		E				Evaluation			Government deliberation
	Active land faults									
and evaluation				Surv						
							E	Evaluatio	n	Government deliberation
Determination of ground movement										
standards (Ss)								Stud	dy	Government deliberation

- Based on the approved ground movement standard (Ss), we plan to conduct seismic safety evaluations of facilities where earthquake safety is important.
- Separate from the determination of ground movement standard (Ss), we plan to conduct additional geological surveys to confirm that tectonic activity in the vicinity of generation facilities will not cause problems on site (surveys are scheduled to be implemented by June).

on site (surveys are scheduled to be implemented by June). The Tokyo Electric Power Company, Inc. All Rights Reserved ©2008

#### [Earthquake-Resistance Improvement Initiatives] Determination of Ground Movement Standard (Ss) -2

$\sim$	Cur	ront Evaluati	on	2003 Eva	Justion	Evaluation for LIn	it 6/7 Approval	
	Cull		011	2003 LVd	luation			
	Approx . Length (km)	Activity	Possible Simultaneous Movement	Approx . Length (km)	Activity	Approx. Length (km)	Activity	
Sado Island Platform East	37	Yes		39	No	4 (max. 5)	No	
F-B Fault	27 (max. 30)	Yes		20	No	7 (max. 8)	No	
F-D Fault	25	Yes	Length	21.5	No	9 (max. 10)	No	
Takada-oki Fault	23	Yes	Approx.48km	18.5	Yes	29	Yes	
Kakuda/Yahiko Fault	54	Yes		-	-	-		
Kehinomiya Fault	22	Yes	Length	-	-	17.5	Yes	
Kamitomioka Fault	Included in Kataga	i fault evaluation	Approx.90km	-	-	2	Yes	
Katagai Fault	16	Yes		-	-	10	Yes	

Not included in study area because outside the 30km radius

Results of Active Fault Evaluation Based on New Earthquake-Resistance Study Guidelines Active Offshore Faults

- The Sado Island Platform East Border South fault, F-B fault, F-D fault and Takada-oki fault have different underground structures so they are evaluated as separate faults.

However, for extra safety an earthquake resistance evaluation covering simultaneous movement of the F-D fault and Takada-oki fault is being taken into account in uncertainty investigations.

Active Land Faults

- The Kakuda/Yahiko fault, Kehinomiya fault and Katagai fault have different underground structures so they are evaluated as separate faults.

However, for extra safety earthquake resistance evaluations covering simultaneous movement of these faults is being taken into account in uncertainty investigations.



[Reference] Governmental Inspection and Investigation System

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