

FY 2010

# Presentation on Management Plan

April 2, 2010

 Tohoku Electric Power Co., Inc.

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Management principles:

“Prospering together with the community” and “Promotion of creative business management”


- To grow together with the Tohoku region and local communities long into the future
- To proactively adapt to the changing business environment, simultaneously achieve energy security, environmental protection, and economic growth, and improve overall management of the business
- To become an indispensable part of the local community by creating unique values in partnership with it

  
Prospects for the business environment

## &lt;Economic trends&gt;

- Declining population
- Creating a low-carbon society
- Increasingly difficult to procure resources
- A new direction for the global economy

## &lt;Impact on our business&gt;

- 
- Changes in power demand caused by the modal shift of supply and use of energy
  - Higher costs incurred by addressing global warming
  - Business operation based on societal changes in the Tohoku region; Need to work together with the community

### Key measures

**1. Steadily boost nuclear power generation by stronger, unified operations of the whole Group**

**2. Operate facilities by simultaneously achieving energy security, environmental protection and economic growth**

**3. Create electrification market by encouraging customers to be more energy efficient**

**4. Proactively work toward a low-carbon society**

**5. Increase profitability by streamlining and combining resources of the entire Group**

**6. Establish a corporate climate of greater safety and quality of operations**

**7. Secure and develop human resources as a growth engine and build a work environment that encourages creativity**

**8. Strengthen ties with the community through discussions and events**

### Actions on key measures

#### ○ Evolve business operations

We must strengthen, or “evolve”, our core operations by adapting previous measures and operations to the changing environment, strengthening those which are to be continued, and reviewing those which need improvement.

#### ○ Open the future

We must “open” the future through new actions to proactively adapt to the changing business environment, including the trend toward a low-carbon society and possible demand fluctuations.

- The safety and reliability of nuclear power are ensured by putting top priority on safety and improving operational quality, through reviewing and strengthening the business system.
- To secure the future of nuclear power, nuclear power management is strengthened, human resources developed, engineering capabilities secured, and the trust of the local community is gained.

### Earthquake safety

- In conjunction with regular inspections, construction work to raise the seismic margin of supporting structures of piping and circuits, which are important for safety, was implemented at plants. The work was completed at all four units (by September 2009).
- Exhaust stacks continue to be built.
- The reliability of nuclear power plants will continue to be improved.

Approx. number of construction points of piping and circuits

Onagawa 1	3,600
Onagawa 2	900
Onagawa 3	2,100
Higashidori 1	1,900
Total	8,500

### Pluthermal

#### ○ Outline of the pluthermal project

- MOX fuel is being used at Onagawa Unit 3.
- The MOX fuel is identical in appearance and shape to conventional uranium fuel.
- Out of all 560 fuel assemblies, less than 228 MOX fuels are to be used.

#### ○ Schedule

- January 8, 2010 Approval by national government for changes of nuclear reactor installations
- March 18, 2010 Acceptance by local authorities through prior discussions based on the safety agreement
- Pluthermal operations to start by FY 2015

## ○ Creating an electrification market to match the characteristics of the Tohoku region

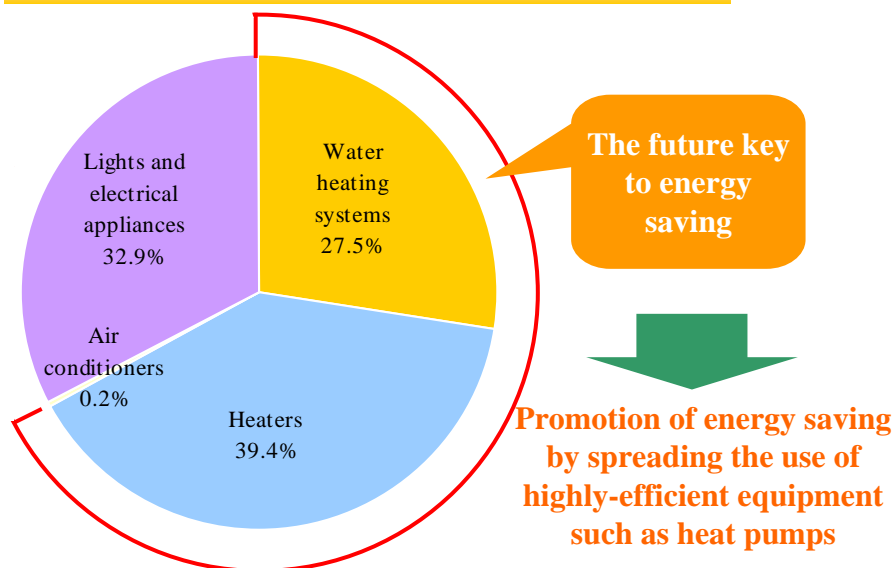
## Residential:

- ◆ Promote heat-pump electrification with excellent environment and energy-saving performance
  - ⇒ Intensive campaign for “ecocute” for hot water supply and “heat-pump heating” for room-heating

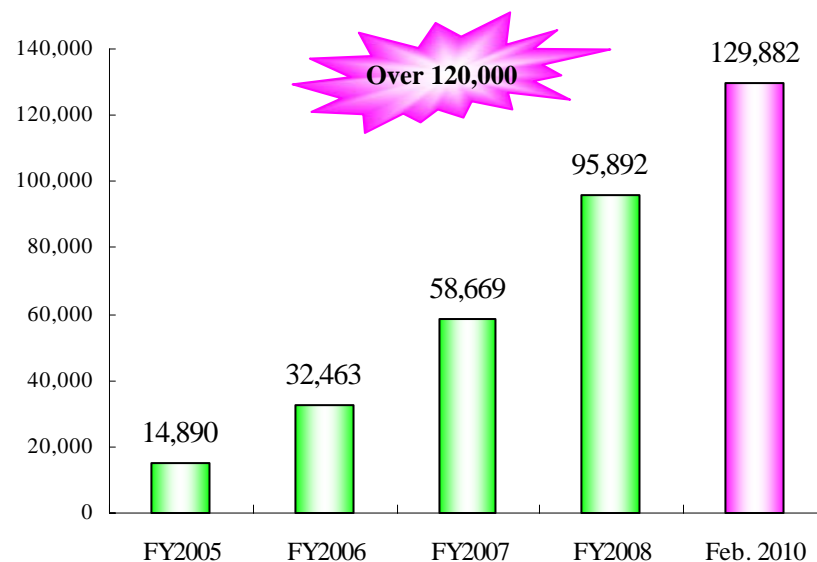
## Commercial:

- ◆ Offer solution services to resolve customers’ problems
  - ⇒ Offer services that meet customers’ needs such as discussions on energy-saving and ESCO businesses
- ◆ Introduce industrial electrification systems based on heat-pump
  - ⇒ Propose highly-efficient multi-air conditioners for buildings in cold regions and heat-pump hot-water supply for commercial use (ecocute), and electric kitchen systems

Breakdown of energy used in households (Tohoku region)



Accumulated number of ecocute



○ **Boosting nuclear power**

- To achieve the long-term goal of nuclear power accounting for 40% of generated electric power, the power source development plan (Namie Odaka and Higashidori Unit 2) is being promoted.
- Improve the capacity factors of existing nuclear power plants by improving seismic margin, promptly preparing for long-term cycle operations, and overhauling the plant operation system.

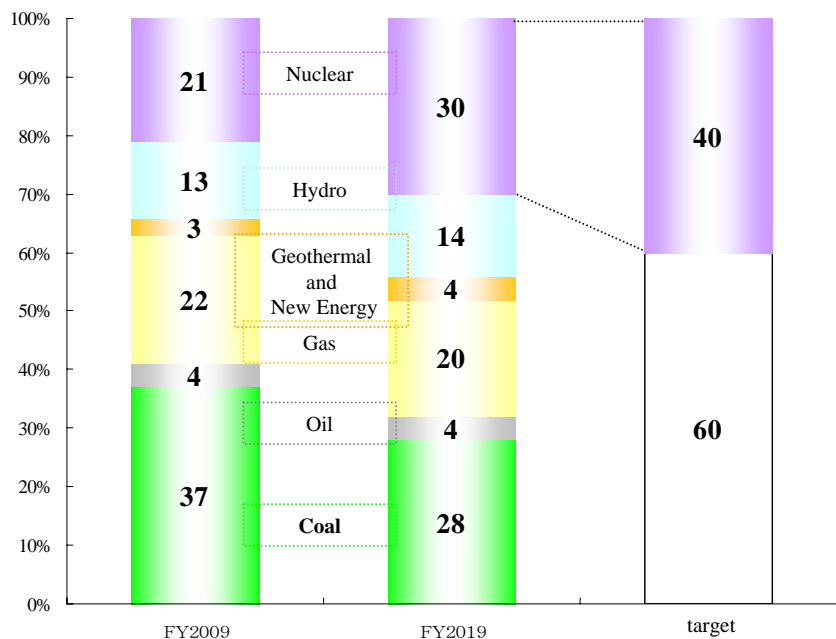
○ **Low-carbon thermal power generation**

- Increase the thermal efficiency of thermal power generation plants by upgrading the advanced combined cycle.
- Increase the efficiency of coal-fired power generation with high economic performance and take measures to reduce CO<sub>2</sub> emissions (R&D on IGCC and CCS).

○ **Renewable energies**

- Tohoku EPCO owns the most hydropower generation facilities in Japan (210 sites), has the largest capacity output of geothermal power generation in Japan (about 250 MW for the entire Group) and the largest interconnected wind power in Japan (about 510 MW), and is also developing mega solar power generation and woody biomass fuel systems. \*Figures in parentheses are actual data for FY 2008.

**Power generated by energy sources and plan for development of power sources**

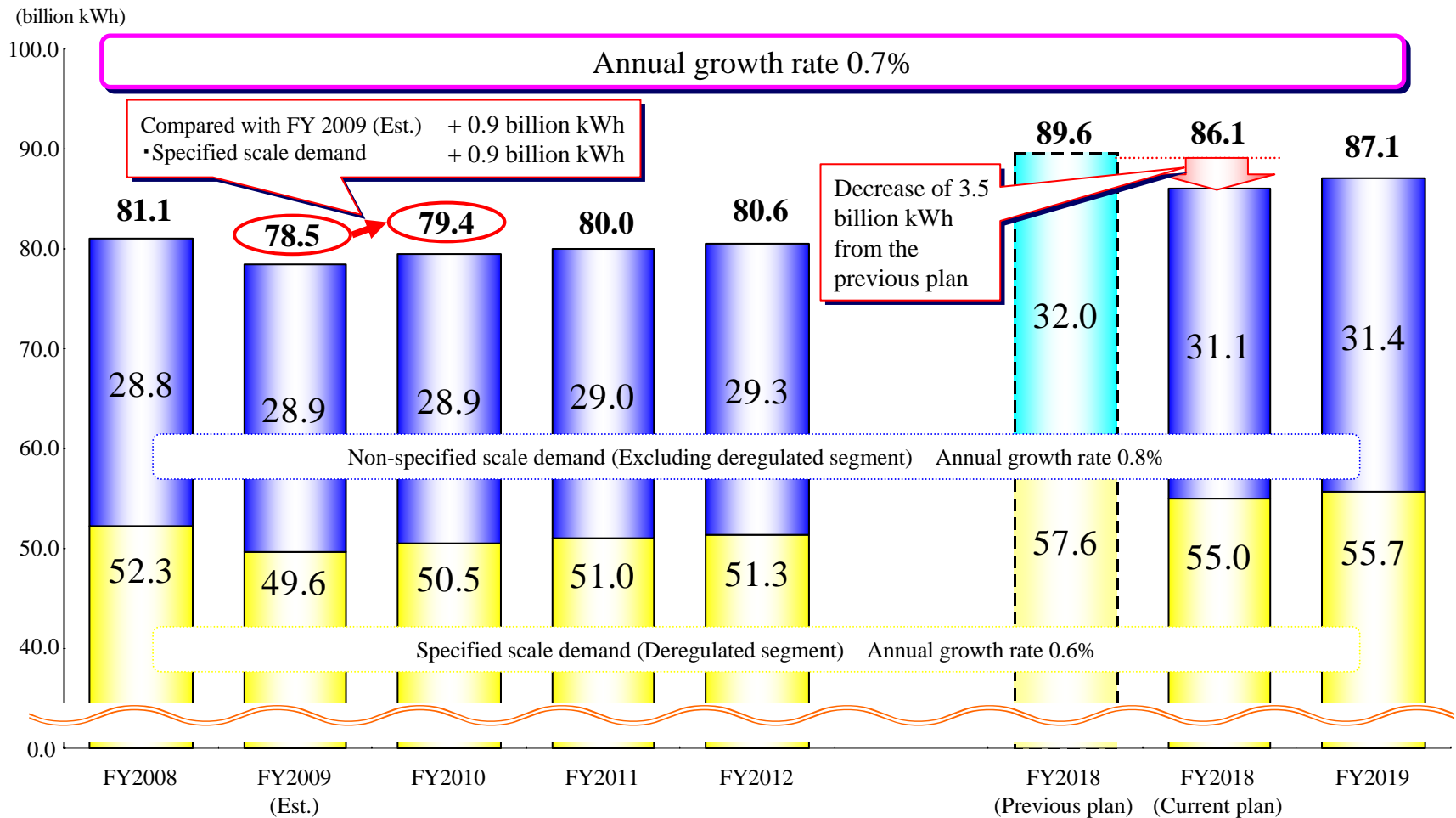


※Including purchased power

Facilities	Location/name	Output (MW)	Start of operation
Hydro	Moriyoshi	11	May 2011
	Tsugaru	8.5	May 2016
	H1	0.23	Dec. 2013
	H2	4.5	Jul. 2015
Thermal	Sendai Unit 4	446	Jul. 2010
	Niigata Unit 5 Series	109	Jul. 2011
	Aikawa Unit 3	7.5	Jul. 2011
	Shin-Sendai Unit 3 Series	980	Jul. 2016 (half capacity) Jul. 2017 (remaining half)
	Joetsu Unit 1 Series	1,440	FY 2023
	Noshiro Unit 3	600	FY 2025 or later
Nuclear	Namie Odaka	825	FY 2021
	Higashidori Unit 2	1,385	FY 2021 or later
New Energy (Solar)	Hachinohe Solar	1.5	Jan. 2012
	Sendai Solar	2	Jan. 2012
	Haramachi Solar	Approx. 1	By around FY 2013

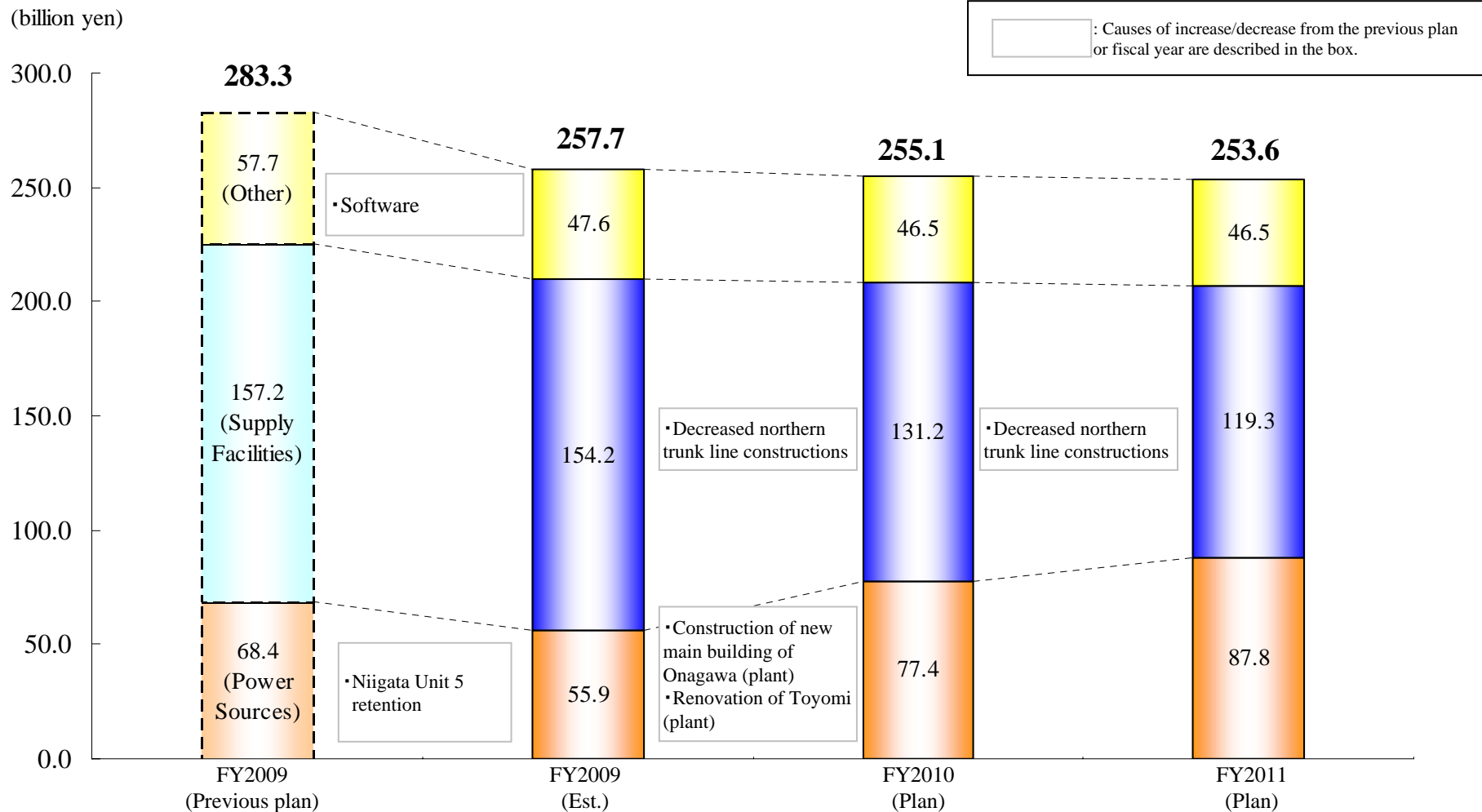
Key: Red text indicate changes from the previous plan.

- **Non-specified scale demand:** Thanks to increase of all-electric housing, demand is expected to grow, although it will be negatively affected by population decrease and energy conservation.
- **Specified scale demand:** Demand is expected to grow in the medium to long term due to the development of industrial clusters, but to be negatively affected by global recession in the short term.





To simultaneously achieve energy security, environmental protection and economic growth, necessary facility measures are incorporated in the plan. Capital investment for FY 2009 to 2011 is around 250 billion yen.



- This medium-term business plan does not include numeric targets as it is difficult to set quantitative goals amid the current business uncertainties with sudden large fluctuations in fuel prices, large-scale decline of power demand caused by global recession, and environmental policies.
- Emphasis is placed on achieving goals for reducing CO<sub>2</sub> emissions and winning new accounts.

#### Ratio of nuclear power generation

- To secure 40% share by nuclear power generation in total generated power in the long term.

#### CO<sub>2</sub> emission reduction goal

- To reduce five-year average end-use CO<sub>2</sub> emissions from FY 2008 to 2012 by 20% from FY 1990 level.

#### Mega solar power generation facilities

- To develop about 10 MW of mega solar power generation facilities by FY 2020.

#### Creation of electrification market

- To create demand of about 2.2 billion kWh (from FY 2010 to 2014).

Shift to electric hot-water supply and heating from gas or oil-based

Major actions:

- ◆ Introduce all-electric housing: Expansion by about 140 thousand houses (from FY 2010 to 2014)
- ◆ Introduce semi-electric housing: Expansion by about 140 thousand houses (from FY 2010 to 2014)
- ◆ Introduce air-conditioning systems: Expansion by about 420 MW (from FY 2010 to 2014)
- ◆ Introduce commercial electric kitchens: Expansion by about 170 MW (from FY 2010 to 2014)

-Toyota Motor Corporation has a vision for creating “three domestic manufacturing hubs.” As one of these manufacturing hubs, the Tohoku region has the potential for developing as: 1) a large production base for small cars and environment-friendly vehicles; and 2) an export hub to Russia and northeastern China.

- Panasonic EV Energy commenced operations in January 2010, and Toyota’s vision of transferring the Tohoku region into its production base has already started.

-Nissan Motor Company is expected to produce its first engine for hybrid cars in the Tohoku region.

【Iwate Pref.】

- ① **Toyota Boshoku Corp.** (Kitakami City)  
<Car Interiors> 1993 commenced operations
- ② **Kanto Auto Works, Ltd.** (Kanegasaki Town)  
<Compact Vehicles>  
1993 commenced operations

【Miyagi Pref.】

- ③ **Aisin Takaoka Co., Ltd.** (Ohira Village)  
<Iron casting for automotive products>  
New construction (in planning stage)
- Central Motor Co., Ltd.** (Ohira Village)  
<Compact Vehicles>  
Jan. 2011 expected to commence operations
- Toyota Boshoku Corp.** (Ohira Village)  
<Car Interiors>  
Jan. 2011 expected to commence operations

【Miyagi Pref.】

- ④ **Toyota Motor Tohoku, Inc.** (Taiwa Town)  
<Engine Parts> 1998 commenced operations  
Factory Expansion (in planning stage)
- Panasonic EV Energy Co., Ltd.** (Taiwa Town)  
<Nickel-hydrogen battery for hybrid cars>  
Jan. 2010 commenced operations
- ⑤ **Keihin Corp.** (Kakuda City)  
<Electronic Control Parts>  
1969 commenced operations

【Fukushima Pref.】

- ⑥ **Denso Higashinohon Corp.** (Tamura City)  
<Car Air Conditioners>  
May 2011 expected to commence operations
- ⑦ **Nissan Motor Co., Ltd.** (Iwaki City)  
<Engine Parts> 1994 commenced operations



※ Sea and Rail Vision

To Russia



Akita Harbor

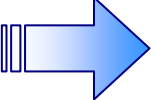
Sakata Harbor

Niigata Harbor

Kamaishi Harbor

Sendai Harbor

To North America



Tohoku Expressway

- : Toyota affiliate
- : Honda affiliate
- : Nissan affiliate

\* Sea and Rail Vision  
This concept envisions connecting Japan and Russia by sea and rail with Akita port as its hub.

\*Data based on news releases

To develop nuclear power sources in northern Tohoku and secure a stable supply of electric power in the Company's service area, new constructions and step-up works for transmission lines and new constructions and step-up/expansion of substations are being implemented as part of the development of 500kV trunk lines.

Facilities	Name of construction	Work period		Outline of facilities
		Commencement	Start of operation	
Transmission	Installation of Towada Trunk Line	Aug. 2006	Sep. 2013	500 kV 114 km double circuit line
	Installation of Kitakami Trunk Line	Aug. 2006	Oct. 2013	500 kV 184 km double circuit line
	Upgrade of Aoba Trunk Line	Apr. 2009	Jun. 2010	500 kV (←275 kV) 57 km double circuit line
	Upgrade of Miyagi Chuo Branch Line	Apr. 2009	Jun. 2010	500 kV (←275 kV) 0.5 km double circuit line
Transformation	Upgrade/capacity expansion of Kamikita Substation	Aug. 2005	Sep. 2013	500/275 kV 1,300,000 kVA 2 units
	Installation of Miyagi Chuo Substation	Feb. 2007	Jun. 2010	500/275 kV 1,500,000 kVA 1 unit
	Upgrade/capacity expansion of Miyagi Substation	Feb. 2007	Oct. 2013	500/275 kV 1,000,000 kVA 1 unit
	Upgrade/capacity expansion of Iwate Substation	Aug. 2007	Oct. 2013	500/275 kV 1,000,000 kVA 1 unit
	Capacity expansion of Shinchi Substation	Aug. 2010	Jun. 2012	500/154 kV 300,000 kVA 1 unit

Key: Red text indicate changes from the previous plan.

\* For step-up/expansion construction of Kamikita Substation, the addition of transformers and step-up of the Mutsu trunk line were completed and operation started in November 2009, and pullout construction in conjunction with the addition of the Towada trunk line is scheduled to be completed and operation will start in September 2013.

## Construction of the northern trunk lines

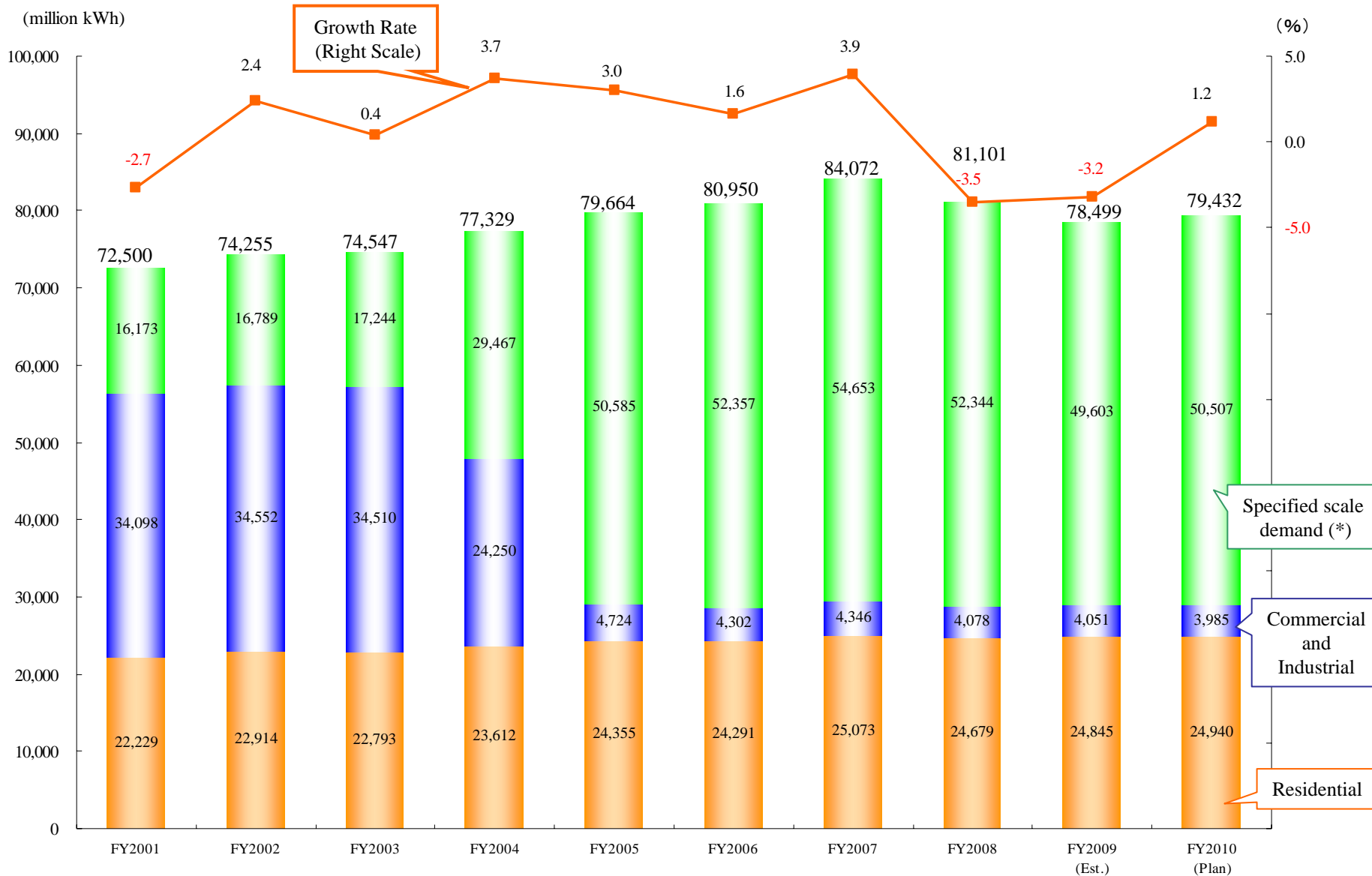


Kitakami trunk lines: Nylon ropes are stretched by helicopter



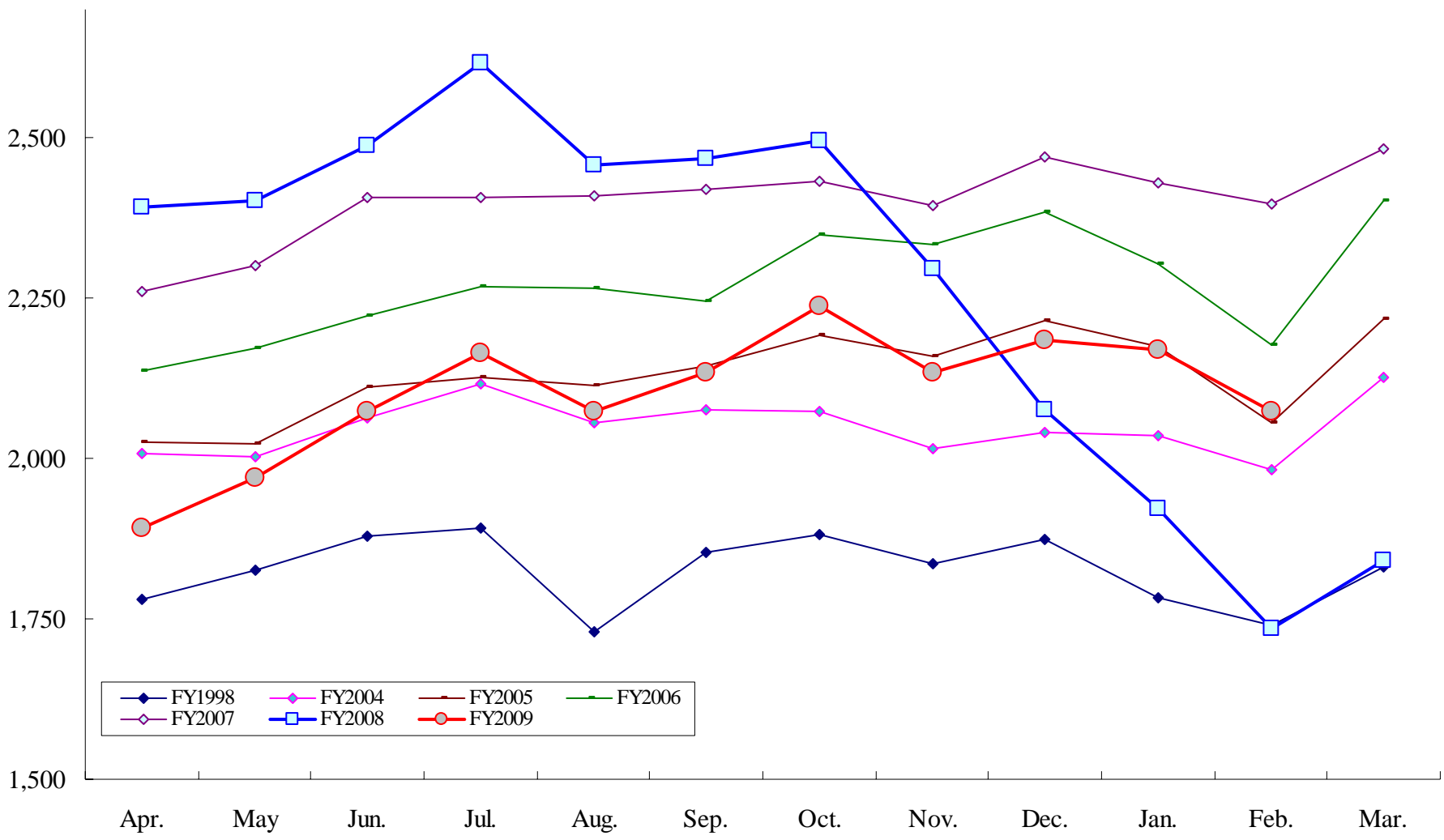
Installing 500kV equipment at Iwate Substation

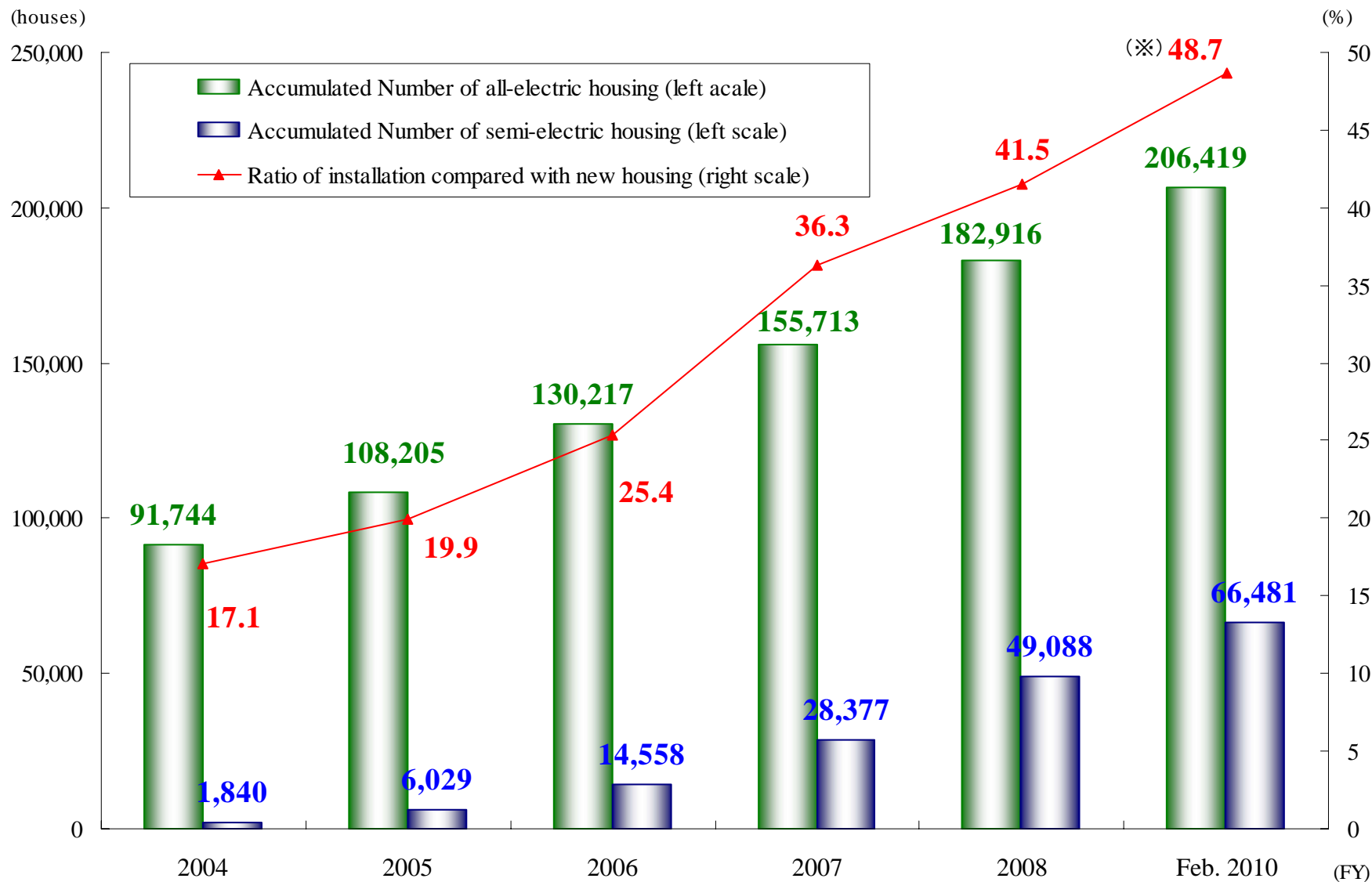
- Various new technologies and construction methods are being introduced and design specifications are being streamlined.



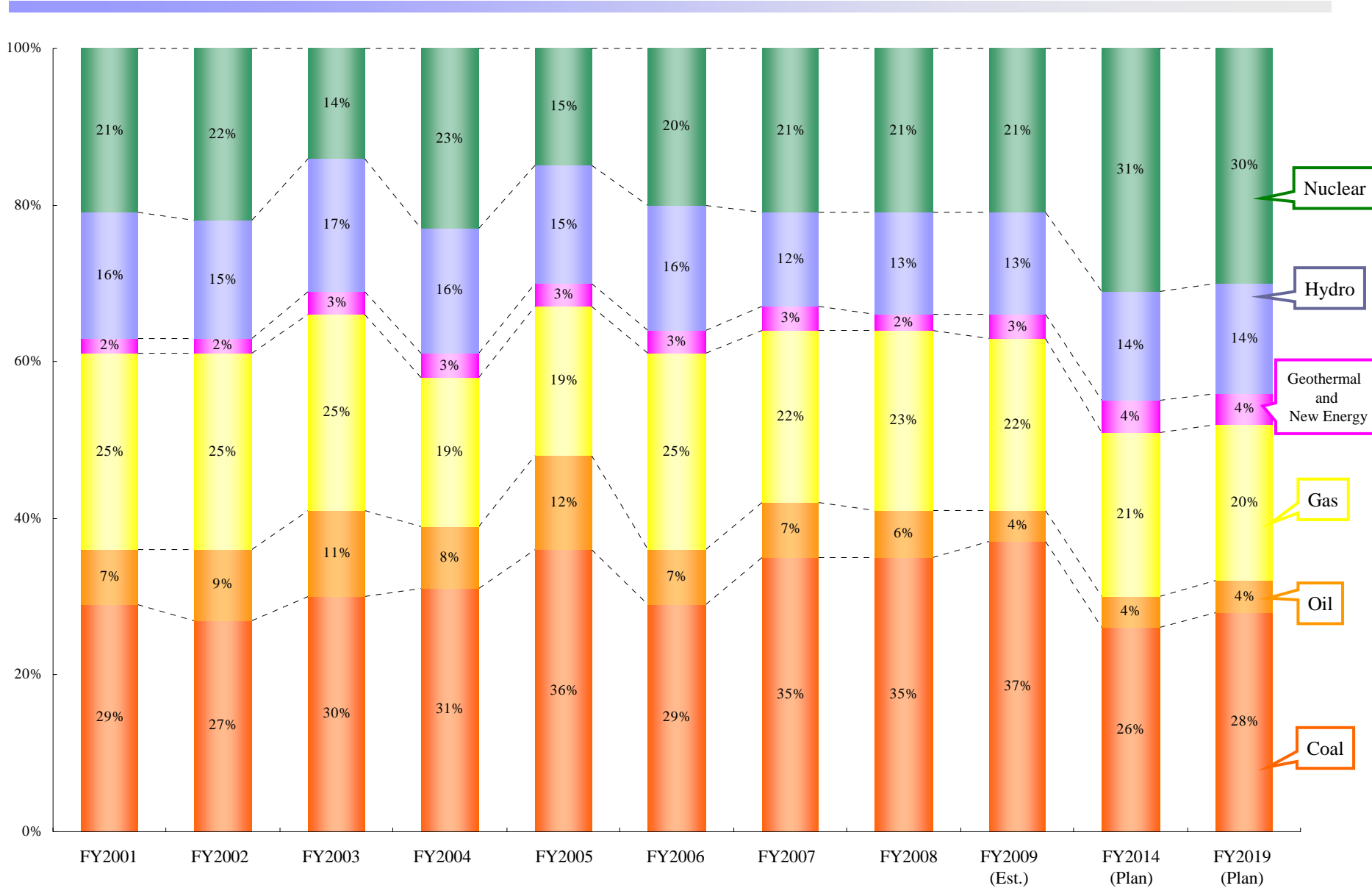
\*Deregulated segment is constituted by customers who use a supply system with a contracted demand of 2,000kW or above from FY2001 to FY2003, 500kW or above in FY2004, and 50kW or above after FY2005.

(million kWh)





\*The introduction rate of all-electric housing of FY 2009 is the figure as of January 31, 2010.



※Including purchased power



(billion yen)

	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009 (Est.)	FY2010 (Plan)
Power sources subtotal	121.3	77.9	67.9	104.9	56.1	37.9	43.4	68.5	55.9	77.4
Transmission	35.5	33.8	27.6	29.2	41.0	52.7	66.1	70.3	62.5	47.3
Transformation	23.9	22.5	20.8	25.5	17.4	20.9	18.4	20.0	46.0	33.2
Distribution	42.7	38.8	43.2	35.8	38.9	39.5	43.8	42.7	44.7	49.1
Dispatch	1.6	5.1	0.3	0.6	0.5	3.4	2.2	0.9	0.9	1.7
Supply facilities subtotal	103.8	100.2	92.0	91.2	97.7	116.7	130.5	134.0	154.2	131.2
Other	14.0	16.6	12.3	13.2	16.8	13.1	27.3	35.6	27.7	20.6
Nuclear fuel	16.6	24.6	16.2	15.4	16.5	11.9	12.9	14.0	19.9	25.9
Other and nuclear fuel	30.8	41.4	28.6	28.7	33.4	25.0	40.2	49.6	47.6	46.5
Electric business total	255.9	219.5	188.5	224.8	187.2	179.6	214.1	252.1	257.7	255.1

(billion yen)

	<b>FY2009 (Est.)</b>	<b>FY2010 (Plan)</b>
<b>Plant and equipment expenditures</b>	<b>257.7</b>	<b>255.1</b>
<b>Internal funds</b>	<b>322.5</b>	<b>225.7</b>
<b>Internal reserve</b>	<b>283.1</b>	<b>273.1</b>
<b>Depreciation</b>	<b>216.1</b>	<b>215.7</b>
<b>Other</b>	<b>67.0</b>	<b>57.3</b>
<b>Customer construction etc.</b>	<b>39.3</b>	<b>-47.4</b>
<b>External</b>	<b>-64.8</b>	<b>29.4</b>
<b>( Bonds [amount of issue] )</b>	<b>(120.0)</b>	<b>(140.0)</b>
<b>Net proceeds from bonds</b>	<b>29.6</b>	<b>21.6</b>
<b>Borrowings</b>	<b>-94.4</b>	<b>7.8</b>

(Note)

This presentation solely constitutes reference material for the purpose of providing the readers with relevant information to evaluate our company.

The information contains forward-looking statements based on assumptions and projections about the future with regard to our company. As such, the readers are kindly asked to refrain from making judgment by depending solely on this information.

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