Immediate Supply-Demand Stabilization Measures
— Accelerate the implementation of structural reforms related to energy —

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Friday, July 29, 2011
Decision of the Energy and
Environment Council

Introduction

The Energy and Environmental Council has decided the following Immediate Supply-Demand Stabilization Measures for the upcoming three years. This project aims to minimize peak hour electric power shortage and rising electricity cost even if nuclear power stations stop their operations on a wide scale.

The political measures and regulatory and system reforms will develop with the change of each stakeholder's attitude for energy use. Based on this, the government will create the framework that sustainably realize reasonable energy demand and increased supply capacities, rather than impose tolerance of severe electricity-saving on people. By doing this, the government will stabilize economic activities and people's life and ensure the recovery of East Japan. It will develop Japanese energy structure reforms ahead of its schedule.

1. Near-term trend of electric power supply and demand, peak-hour power shortage and electricity cost rising projections

(1) Risk of electric power shortage at peak hour by approximately 10% next summer (pp. 15, Appendix 1)

The following electric power demand-supply trend is based on the demand-supply forecasts as of July 27, 2011. To be more specific, (1) the maximum electric power demand represents the actual demand in 2010 or a utility firm's future outlook, whichever is larger; (2) if a nuclear power station undergoes periodic inspection, it will not resume operations; and (3) a thermal power plant's supply capabilities are based on the supply forecasts as of July 27, 2011.

It should be noted that the supply-demand trend would vary in the future, depending on the power plant's operations. As described in the section 5, the government will follow up the demand-supply trend from early autumn and always reexamine the forecast.

1) Electric power supply-demand trend and electric power shortage in the summer of 2011

[Eastern Japan]

- Electric power shortage is estimated at -7.3% (-5.85 million kW) at peak hour
- The government addresses power shortage by requesting consumers to save 15% electricity consumption and imposing large-lot consumers to reduce 15% in the weekday daytime.

In response to the negative impacts of the Great East Japan Earthquake, Tokyo Electric Power and Tohoku Electric Power strived to enhance their maximum supply capacities in Eastern Japan for this summer. However, the total supply capacities in the service areas of Tokyo, Tohoku, and Hokkaido Electric Powers are estimated to fall short of peak-hour electric power demand (in the summer of 2010) by 7.3% (5.85 million kW).[1]

To avoid such electric power shortage, the government has requested consumers in Tohoku and Tokyo Electric Powers' service areas to reduce their consumption by 15% and has also imposed 15% electricity consumption restrictions on large-lot consumers with contract demand of 500 kW or larger in accordance with the Electricity Business Act. As a result, electric power demand is successfully decreasing by more than 10% in the service areas of Tokyo and Tohoku Electric Powers.

[Central and Western Japan]

- Reserve rate is estimated at +1.0% (+1.02 million kW) at peak hour
- Kansai Electric Power addresses possible electric power shortage by requesting more than 10% electricity-saving in its service areas.

If nuclear power stations will further undergo periodic inspections and will not resume their operations after periodic inspections, then six utility firms in Central and Western

[1] Tokyo and Tohoku Electric Powers have been taking additional actions to enhance their supply capabilities, such as restoring affected thermal power plants, resuming operations of long-term idle thermal power plants, establishing emergent power sources (including gas turbines), and encouraging installations of private power generation systems.

The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers come from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which is based on the summertime peak-hour demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak-hour demand projection, whichever is higher. The same rule shall apply to demand-supply data in this winter and the next summer.

Japan (Chubu, Hokuriku, Kansai, Chugoku, Shikoku, and Kyushu Electric Powers) will also face electric power shortage at peak hour. As power utilities have made efforts to enhance their supply capacities, supply reserve rate will stand at +1.0% (+1.02 million kW) in relation with last summer's peak-hour demand of 99.68 million kW in Central and Western Japan.

Because the appropriate reserve rate (surplus supply capacities necessary for keeping a stable supply for the peak hour demand) should stand at 3% at least and should usually be 8% or more, the aforementioned reserve rate represents a harsh figure, but it is not as serious as the data in the service areas of Tokyo and Tohoku Electric Powers for this summer (about 8% electricity shortage at the peak hour), which requires electricity consumption restriction. The government has requested consumers in Kansai Electric Power's service areas to save electricity consumption by 10% or more as a whole and assumes that ordinary electricity-saving practices are enough to avoid electricity shortage in service areas of other utility firms.

2) Electric power demand-supply trend and electric power shortage in the winter of 2011

[Eastern Japan]

- Electric power shortage is estimated at -1.1% (-0.8 million kW) at peak hour
- The government addresses power shortage by requesting electricity saving in the weekday daytime and providing policy support, including a supplementary budget.

If nuclear power stations will further undergo periodic inspections and will not resume their operations after periodic inspections, supply capacities will fall further than in the summer. On the other hand, the peak-hour electric power demand will decrease from 79.86 million kW in summer to 71.49 million kW in winter. For this reason, electricity shortage in Eastern Japan is estimated to improve from -7.3% to -1.1% (800,000 kW).

[Central and Western Japan]

- Electric power shortage is estimated at -0.4% (-330,000 kW) at peak hour
- The government addresses power shortage by requesting electricity saving in the weekday daytime and providing policy support, including a supplementary budget.

If nuclear power stations will further undergo periodic inspections, and they will not resume their operations after periodic inspections, then supply capacities will fall further than in the summer. On the other hand, the peak-hour electric power demand will decrease

from 99.68 million kW in summer to 88.62 million kW in winter. For this reason, supply capacities will fall short of peak-hour demand by approximately -0.4% (330,000 kW).

3) Electric power supply-demand trend and electric power shortage next summer

[Eastern, Central, and Western Japan]

- Electric power shortage is estimated at -10.4% in Eastern Japan and -8.3% in Central and Western Japan at peak hour.
- Electric power shortage is estimated at -8.34 million kW in Eastern Japan, -8.23 million kW in Central and Western Japan, and -16.56 million kW nationwide at peak hour.

If nuclear power stations will further undergo periodic inspections in the next summer and will not resume their operations after periodic inspections, then no nuclear power plant will operate, further deteriorating the situation. In Eastern Japan, supply capacities will fall short of the summer peak-hour demand of 79.86 million kW, resulting in peak-hour electric power shortage of -10.4% (-8.34 million kW), a more serious shortage than in the summer of 2011. In Central and Western Japan, supply capacities will fall short of the summer peak-hour demand of 99.68 million kW, leading to an electric power shortage of -8.3% (-8.23 million kW). On a nationwide scale (in service areas of nine power utilities), electric power shortage is estimated at 16.56 million kW at peak hour.

[Basic strategies to eliminate peak-hour electric power shortage next summer]

- The government addresses power shortage by requesting electricity saving in the weekday daytime and taking political measures, with a supplementary budget

As sufficient time was not available, the government couldn't help conducting planned power outages at first against the electric power shortage in Tokyo and Tohoku Electric Powers' service areas resulting from the Great East Japan Earthquake. Then, the government provided "softer" supportive programs (including information services), reduced some regulations, and decided not to take planned power outages in principle, through a combination of requests for saving electricity and restrictions on the use of electricity.

If the government takes such planned power outages or restrictions on the use of electricity next summer, it will probably restrain economic activities and sacrifice the convenience of people's usual life. It is important to avoid planned power outages or

restrictions on the use of electricity and not to take policy measures that would restrain economic activities or sacrifice the convenience of people's usual life as much as possible.

For this reason, the government will take measures for encouraging electricity-saving practices and increasing electricity supply by employing initial/supplementary budgets and by conducting regulatory/system reforms ahead of schedule. The government will make reasonable behaviors for saving electricity take root, promote use of surplus private power generation capacities, and create the framework that sustainably realize reasonable energy demand and increased supply capacities. These actions are derived from the efforts done for cutting down 10% or more of electricity in Eastern Japan this summer.

(2) Risk of rising electricity cost by approximately 20% (pp. 28, Appendix 2)

Japan's electricity supply stands at approximately 900 billion kW a year. 30% of this supply comes from nuclear power stations. If they can't resume their operations, utilities will select thermal power generations as a main alternative. As a result, electricity cost will be rising by approximately 20% because of their fuel cost.

In other words, as for Japan's current electric power supply structure, nuclear power stations with lower fuel cost and coal power plants are operating through day and night (i.e., base power sources), while LNG thermal power and oil-fired thermal power plants are running mainly in the daytime (i.e., middle power sources or peak power sources). Because coal thermal power plants are running thorough day and night already and hydro power plants can't control outputs, if nuclear power plants are running on lower-capacity operations, it is necessary to increase the work time of LNG or oil-fired thermal power plants. If all nuclear power stations are replaced with LNG or oil-fired thermal power stations, fuel cost might rise by approximately ¥3 trillion a year, according to our calculation based on certain assumptions.[2]

Japan's entire electricity bills stand at about ¥15 trillion a year. If transfering these

[2] METI estimates that, if FY 2009 electric-generating capacities of nuclear power plants (approximately 280 billion kWh) are entirely covered with LNG and oil-fueled thermal power plants, additional fuel cost will stand at approximately ¥3 trillion a year. The METI's estimate is based on the assumptions that Japan has nuclear electric-generating capacities of 274.5 billion kWh and prices will rise by ¥11.5/kWh owing to fuel substitution (i.e., based on the current fuel prices, 1 kWh power generation will send up fuel cost by ¥11 for LNG thermal power and ¥16 for oil-fueled thermal power. The aforementioned additional cost of ¥11.5/kWh represents deducting ¥1 (unit cost of nuclear power generation fuel price per 1 kWh) from the weighted average fuel cost of ¥12.5/kWh, which is assumed in line with the power-generating percentage of LNG and oil-fired thermal plants). As METI's estimate does not incorporate higher LNG prices due to Japan's increased demand or an electricity consumption decrease resulting from energy-saving programs, additional fuel cost will vary, depending on future fuel prices or the amount of fuels procured.

additional costs onto consumers, electricity fee will increase by approximately 20%. Increased electricity bills would restrain people's consumption, reduce corporate earnings, and make negative impacts on corporation's location selection or employment in the long run.

In addition to dealing with electric power shortage at peak hour, the government should address the problem of electricity cost rising occurring in case nuclear power stations can't resume as an important political issue.

2. Basic policies: Five principles

As mentioned above, stop of nuclear power stations operations on a wide scale will lead serious power shortage at the peak hour and electricity cost rising. Addressing these problems with planned power outages or restrictions on the use of electricity will impose tolerance of severe electricity-saving on people, which will in turn deteriorate economic activities or standards of living.

As mentioned in “Basic Policy on Reconstruction from the Great East Japan Earthquake” (Headquarters for the Reconstruction from the Great East Japan Earthquake, July 21, 2011), stabilizing electricity supply and reexamining energy strategies will play central roles in nation-building based on lessons from the Great East Japan Earthquake, preventing domestic companies from hollowing-out and overseas firms from shifting away from Japan.

In this regard, the government will take “Immediate Supply-Demand Stabilization Measures” based on the following five principles.

(1) To minimize the power shortages at peak hour and the rise of electricity costs even if nuclear power stations stop operations on a wide scale

-Avoiding the risk of approximately 10% peak-hour electricity shortage and the risk of approximately 20% curb rising electricity cost

(2) To avoid as much as possible planned power outages, restrictions on the use of electricity, and thoughtless cost transfers

- Eliminating imposed tolerance of severe electricity-saving as soon as possible

(3) To fully promote sustainable and rational actions by the public through incentive measures and regulatory reform; to accelerate the implementation of energy structure reforms; and to promptly establish economic and social mechanisms in which peak power demand is restrained and electricity costs are cut in a sustainable manner.

- Regarding Immediate Supply-Demand Stabilization Measures as short-term Innovative Energy and Environment Strategies

(4) To promote measures to stabilize the energy supply and demand situation as an economic

revitalization measure

- Aiming to revitalize the economy by encouraging investment in demand structure and supply structure reforms

(5) To present a three-year schedule to for public participation

- Making clear political measures for several sectors such as industry division, commercial division, and household division and synchronizing the change of each stakeholder's attitude for energy use with them

3. Specific projects to attain targets

To avoid the risk of approximately 10% peak-hour electricity shortage and the risk of approximately 20% electricity cost rising, the government will the Government will (a) reform demand structures; (b) diversify supply methods; (c) reform electricity systems and enhance the management efficiency of electric power companies; and (d) implement thorough safety measures while making use of the nuclear power stations where safety has been confirmed. For succeeding these actions, the government will concentrate on all policy resources such as political measures and regulatory and system reforms.

(1) Focus on demand structure reforms for power shortage at peak hour and electricity cost reduction

Electricity demand is decreasing by 10% compared with last year in the service areas of Tokyo and Tohoku Electric Powers. This result is probably because of restricted production activities and severe electricity-saving behaviors. On the other hand, the results includes the outcome of rational electricity-saving actions, such as intensified electricity-saving practices through visualization, the change of people's attitude for energy use, replacement with LED light bulbs, and shifting of working days and hours (pp. 29, Appendix 3). In addition, some regional electricity-saving projects (pp. 30, Appendix 4) have successfully reduced electricity consumption by more than 10%. Through encouraging these rational electricity-saving practices, the government will accelerate the change of demand structure nationwide.

The government intends to reform the demand structure by combining measures such as (1) expanding the installation of energy-saving products, (2) enhancing production capacities for energy-saving products, (3) encouraging energy-saving investment in housing, plants, and buildings, (4) encouraging investment by consumers, and (5) diversifying electricity fee plans.

Political measures encouraging demand structure reform in this way will create an international competitive position for Japanese energy-saving industries and a lot of job opportunities.

In addition to these measures, by combining visualization of electricity consumption and enhancement of energy-efficiency standards for products, housings, and buildings, the government will promote change of attitude for energy use for the society, in particular, for commercial division and household division, which occupy two-thirds

of peak-hour electric power demand .

[Main programs]

1) Encouraging the introduction of energy-saving products

-HEMS/BEMS,[3] high-efficiency air-conditioning, and high-efficiency lighting equipment, such as LED lighting

2) Encouraging energy-saving investment in industries

-Investment in R&D on energy-saving products and enhancement of production capacity of energy-saving products

3) Encouraging energy-saving investment in housing, plants, and buildings

-Accelerating the diffusion of net-zero-energy housings,[4] encouraging energy-saving behaviors through appropriate standards, installing energy-saving equipment, and providing energy-saving diagnosis services

4) Encouraging investment by consumers, including households

-Investing distributed power generation systems near electricity demands, including storage batteries, electric cars, photovoltaic power generation, cogeneration systems,[5] and fuel cells

5) Encouraging installation of smart meters[6] and diffusing electricity bill plans that will stimulate consumer's peak cuts by using smart meters

- Encouraging the diffusion of supply-demand adjustment contracts in large-lot consumers

Supply-demand adjustment contracts mainly for large-lot consumers[7] (i.e., contracts that provide an electricity bill discount if the consumer restrains electricity consumption in the case of tight supply) will work effectively as a

[3] HEMS (Home Energy Management System): Energy management system for housings; and BEMS (Building Energy Management System): Energy management system for buildings

[4] Housings that generate electric power more than they consume

[5] Parallel supply of electricity and heat. This is a system that uses heat emerging from power generation.

[6] High-performance meters with communication functions

[7] Demand-supply adjustment contracts have two types: Planned adjustment contracts; and occasional adjustment contracts. A planned adjustment contract designates specific day/time (e.g., weekday, daytime) in which the upper limit of electric consumption is established within the time span predetermined by a power utility (i.e., summertime) in order to cut down the peak-hour electric consumption. Because it always restrains electric consumption, it is incorporated in the power utility's demand projection. In this summer, planned adjustment contracts amount to approximately 2.92 million kW in total for Tokyo and Tohoku Electric Powers and approximately 5.59 million kW for the whole of Japan.

Occasional adjustment contracts will reduce electric consumption if the power utility delivers prior notice at the time of tight supply. Since it is a solution only for tight supply, it is not incorporated in demand projection. In addition, it will not necessarily be able to reduce electric demand as contracted for the following two reasons: (1) If a consumer does not reach the upper limit, demand will not decrease as contracted and (2) the power utility has the upper limitof times (e.g., 10 times/year) for requesting consumers to reduce their electric consumption. This summer, occasional adjustment contracts amount to approximately 1.78 million kW in total for Tokyo and Tohoku Electric Powers and approximately 4.91 million kW for the whole of Japan.

peak-cut measure. The government will accelerate the diffusion of such contracts while enhancing their effectiveness by diffusing private power generation systems and improving contract terms.

-Launching five-year-long smart meters intensive installment plans and peak-cut contracts for small-lot consumers

As for households and other small-lot consumers, the government will establish appropriate framework capable of identifying time-slot-based electricity consumption through the diffusion of smart meters and accelerate the introduction of discounts for peak-cut actions. By striving to attain the initial target of installation of smart meters at all households in the 2020s ahead of schedule, the government aims to install smart meters for 80% of the aggregate demand within the next five years. By doing so, it aims to realize smart grids as soon as possible. In addition, the government will examine the feasibility of taking appropriate actions, such as the liberalization of electricity retailing services.

6) Supporting local community-based electricity-saving projects, setting up local distributed-energy systems, participants of which produce and consume electricity by themselves, and fostering local-based electricity producers (Paying attention to recovery from the Great East Japan Earthquake disasters)

7) Encouraging social behavior reforms, such as shifts of working days and hours

(2) Focus on efficiency and environment-friendliness and encourage many stakeholders to supply electric power

The government is planning to increase electric supply, with focus on the efficiency and expansion of environment-friendly power sources. It attaches a high value to expanding renewable energies through launching a fixed-cost purchase program and expanding high-efficiency thermal power generation and cogeneration systems.

Reforming supply structure in this way will create an international competitive position and a lot of job opportunities for Japanese energy-saving-related industries.

As a measure for peak-hour supply enhancement, the government will encourage power utilities to fully utilize pumped-storage power generation and to install storage batteries in electric systems, aiming to enhance peak-hour electric supply by making use of nighttime electric power. In addition, it will encourage the utilization of a surplus

portion (approximately 1.28 million kW) of private power generation (pp. 31, Appendix 5). The increase of small and low-efficiency power sources for emergency is also recognized as a solution for tight supply.

The government will also enhance resource procurement strategies, such as smooth and rational procurement of natural gas, oil, and coal.

In addition to General Electric Power Suppliers, the government will provide an appropriate environment where private power generators, IPPs,[8] PPS,[9] various industries or venture businesses will easily introduce renewable energy power generation or high-efficiency thermal power generation. It will also conduct regulatory and system reforms, including electric power systems and regulations for plants' location, and will launch a fixed-price purchase program (Feed In Tariff scheme) in order to create a more competitive and diverse supply structure.

The government will also embark on establishing a high-efficiency and total energy supply structure that employs electric power, oil, gas, and heat. It will realize area-based energy supply systems, such as district air-conditioning systems. It will construct such area-based total energy systems in areas suffered from the Great East Japan Earthquake and will help their recovery process.

All of private power generators, IPPs, PPSs, and General Electric Power Suppliers have surplus electric power in night time. As a part of cost reduction efforts, the government will encourage competition in electric power supply in night time. In addition to demand structure reform, diversification of supply structure will serve as a basic strategy for decreasing electricity cost.

[Main programs]

1) Expanding the introduction of renewable energies
   - Pushing ahead with regulatory reforms, such as introducing a fixed-price purchase program (Feed In Tariff scheme), launching a priority connection to grids, and reexamining location regulations
2) Enhancing thermal power generation and supporting high-efficiency plants and etc.
3) Strengthening resource procurement strategies

[8] Independent Power Producer: Electricity wholesalers selling electricity to power utilities
[9] Power Producer & Supplier: Electric power suppliers that provide retail services to large-lot consumers

- Making the oil and gas supply framework more stable

4) Enhancing peak-hour electric power supply capacities

- Utilizing pumped-storage power generation by making use of night-time power, such as private power generation effectively

  Japan has pumped-storage power generation capacity of 26.68 million kW. However, as power utilities have limited nighttime power generation capacities to pump up water, only 18.04 million kW is counted for the projected supply capacities next summer. The government will encourage utilization of pumped-storage power generation through further use of electric power in night time generated by power utilities and private power generators

- Encouraging power utilities to install storage batteries
- Supporting the utilization of the peak-hour available capacities of private power generators for usual use (approximately 1.28 million kW[10] (pp. 31, Appendix 5))

5) Encouraging the installation and use of distributed power sources (renewable energies and environment-friendly energies, such as fuel cells or cogeneration that provides both heat and gas) and smart communities (next-generation energy-society systems), and conducting their model projects

(3) Reform electric power systems in terms of reforming demand structure and diversifying supply methods

The government will start regulatory and system reforms on electric power systems in order to diffuse distributed power generations near the demands and storage batteries, create a smart grid network,[11] expand the introduction of renewable energies, and expand high-efficiency thermal power generation capacities.

In addition, the government will promote the separation of power generation and power transmission by enhancing the neutrality of their businesses and promote market entries to power generation and retail businesses. By doing so, it will establish an appropriate framework in which a wide variety of stakeholders tap into electric power business and work for cost reduction innovation with their ideas and competitions.

[10] As existing emergent private power generation systems (23 million kW) are small and inefficient systems not connected to power transmission grids, the government will support and utilize them as necessary, paying due attention to demand and supply in the next summer.

[11] Creating a communications network on electric power information

As for electricity prices, power utilities should make their business operations more efficient not to pass higher fuel costs on consumers as much as possible. The government aims to revitalize the electricity wholesale market and reduce prices through competitions.

[Main programs]

1) Enhancing consumer incentives for peak cut, such as establishing a flexible electricity fee menu and expanding consumer's choices through liberalizing retail business
2) Encouraging competition among power utilities or between power utilities and private power generators by improving conditions in the wholesale electric power market
3) Making cost structure more efficient through reforming procurement practices of power utilities
4) Enhancing power transmission and distribution systems, such as making the grids smarter (adding the information communication technology to them),improving interconnected power systems, and expanding transmission grids for introducing renewable energies
5) Enhancing neutrality and fairness of power transmission and distribution businesses

(4) Demonstrate the government's stance that it intensifies measures for nuclear power security, even when in the restart of resting nuclear power plants

As for utilizing nuclear power, it is absolutely necessary to intensively investigate nuclear accidents and to keep safer operations. The government will take actions according to the government policy "Confirming safety of nuclear power stations in Japan (July 11, 2011)" (pp. 33, Appendix 6), which suggests the introduction of a new evaluation scheme of nuclear power's safety based on stress tests.

By taking such actions, the government will promote the restart of nuclear power plants that are proved to be safe. This will make positive impacts on both of power shortage at the peak hour and electricity cost reduction.

4. Timetable and list of regulatory and system reforms for Supply-Demand Stabilizing Measures

The government's policy supports, regulatory and system reforms and the change of each stakeholder's attitude for energy use will continually make energy demand structure more efficient and increase supply capacities. To help establish such a framework, the Council develops the timetable (pp. 36, Appendix 7) and the list of regulatory and system reforms (pp. 37, Appendix 8).

(1) Concrete timetable for Energy Supply-Demand Stabilizing Measures

The government will conduct the energy demand-supply stabilizing project for the next three years. The Council develops the timetable of the government's actions that will yield their outcomes in (1) this summer, (2) this winter, (3) the next summer, (4) the next winter, and (5) the summer of the year after next or later for the energy supply division, industrial division, commercial division, household division, and transportation division each (pp. 36, Appendix 7).

According to this timetable, the government will take specific actions through the FY 2011 third supplementary budget, FY 2012 budget, and regulatory and system reforms. The Energy and Environment Council will develop a more specific timetable for Energy Supply-Demand Measures around autumn by carefully examining the feasibility of policy support actions on regulatory and system reforms and energy-saving-related policies for each consumer category as listed in the timetable.

(2) Concrete list of regulatory and system reforms related to Energy Supply-Demand Stabilizing Measures

The government made a list of regulatory and system reforms that would effectively stabilize energy supply-demand structure for the time being with the timetable (pp. 37, Appendix 8).

To steadily implement these reforms, the Energy and Environment Council will identify more specific contents of the regulatory and system reforms in the autumn at latest by listening to the opinions of stakeholders.

5. Review of Measures

(1) As mentioned, the Energy and Environment Council will identify more specific timetable of Energy Supply-Demand Stabilizing Measures and list of regulatory and system reforms and set their priorities around this autumn.

(2) As projections for this winter or the next summer are estimated to vary from time to time, the Council will follow up demand-supply trends periodically. To be concrete, the Energy and Environment Council or the Council for Considering Electric Power Supply and Demand will carefully examine the supply-demand projection for this winter as soon as possible and the next summer's demand-supply projection around the next spring. In addition, they will reexamine government's measures and suggest the target of demand reduction if necessary.

(3) The government conducts the Immediate Energy Supply-Demand Stabilizing Measures as the early stage of the energy structural reforms and recognizes it as the short-term strategy of the Innovative Energy and Environment Strategies.

List of appendixes

(Appendix 1) Near-term trend of electric power supply and demand and projection of peak-time electric power shortage

(1) The trend of electric power supply and demand in the case where nuclear power stations will not resume their operations

<Eastern Japan>
Owing to possibility of electric power shortage at the peak-time from 9:00 to 20:00 on weekdays, Tokyo and Tohoku Electric Powers are taking the following actions in their service areas:
◎Large-lot consumers (500 kW or larger): 15% electricity consumption restriction
◎Other consumers: Request of 15% electricity saving

Tokyo Electric Power: -8.8% (-5.3 million kW)
Tohoku Electric Power: -6.6% (-980,000 kW)

As of July 27, 2011

	This summer	This winter	Next summer
Eastern Japan	-7.3% (5.85 million kW shortage, with the peak demand of 79.86 million kW)	-1.1% (800,000 kW shortage, with the peak demand of 71.49 million kW)	-10.4% (8.34 million kW shortage, with the peak demand of 79.86 million kW)
Central and Western Japan	+1.0% (1.02 million kW surplus, with the peak demand of 99.68 million kW)	-0.4% (330,000 kW shortage, with the peak demand of 86.62 million kW)	-8.3% (8.23 million kW shortage, with the peak demand of 99.68 million kW)

Kansai Electric Power: -3.9% (-1.23 million kW)

(Note) The maximum electric power demand (daily maximum value) for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies," which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other power utilities, the maximum demand is estimated at FY 2011 summertime actual demand or FY 2011 summertime peak demand projection, whichever is higher.

<Central and Western Japan>
If nuclear power stations do not resume operations after periodic inspections, a sufficient supply reserve rate will not be available. For this reason
⊙ The service areas of Kansai Electric Power: Request of 10% or more electricity saving
⊙ Service areas of other power utilities: Electricity saving to the extent of not disturbing citizens' lives and economic activities

[Assumptions]

- Demand is assumed to stay at the preceding year's level.

→ **The government may take actions here**

Demand-supply adjustment contracts (i.e., contracts in which a power utility may request peak cuts to large-lot consumers) are not incorporated. The government will closely examine its feasibility from now on.

- Currently examining possible supply capacity enhancement of power utilities and increased supply capacity of private power generation

→ **The government may take actions here**

(2) Near-term electric power supply and demand capacities of power utilities in each power source category

1) Nine power utilities (total)

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	-483 (-2.7%)	1113 (-0.7%)	-1,656 (-9.2%)
Maximum electricity demand *2	**Aggregate demand**	17,954	15,811	17,954
Supply capabilities *3	**Supply capabilities (total)**	17,471	15,698	16,297
Breakdown of supply capabilities	Nuclear*4	1,176	409	0
	Thermal	12,931	12,685	13,200
	Recovery of affected thermal power plants	1,243	153	135
	Adjustment of periodic inspection timing	220	487	194
	Resumption of long-term idle thermal power plants	196	22	0
	Utilization of private power generation *5	285	206	164
	New installation of emergency power sources *6	151	179	264
	Hydro	1,287	1,024	1,296
	Pumped-storage power generation *7	2,086	1,593	1,804
	Geothermal, etc.	35	43	47
	Electricity trades among power utilities, etc. *8	-44	-57	-49

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies," which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2015.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

2) Eastern Japan, 3 power utilities

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	-585 (-7.3%)	-80 (-1.1%)	-834 (-10.4%)
Maximum electricity demand *2	**Aggregate demand**	7,986	7,149	7,986
Supply capabilities *3	**Supply capabilities (total)**	7,401	7,069	7,152
Breakdown of supply capabilities	Nuclear*4	387	232	0
	Thermal	5,683	5,803	6,048
	Recovery of affected thermal power plants	1,243	153	135
	Adjustment of periodic inspection timing	85	51	16
	Resumption of long-term idle thermal power plants	120	0	0
	Utilization of private power generation *5	178	140	79
	New installation of emergency power sources *6	151	179	264
	Hydro	542	439	556
	Pumped-storage power generation *7	796	605	555
	Geothermal, etc.	18	25	30
	Electricity trades among power utilities, etc. *8	-24	-35	-37

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

3) Hokkaido Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	43 (8.5%)	79 (13.6%)	-32 (-6.4%)
Maximum electricity demand *2	**Aggregate demand**	506	579	506
Supply capabilities *3	**Supply capabilities (total)**	549	658	474
Breakdown of supply capabilities	Nuclear*4	138	91	0
	Thermal	379	454	369
	Recovery of affected thermal power plants	-	-	-
	Adjustment of periodic inspection timing	-	51	16
	Resumption of long-term idle thermal power plants	-	-	-
	Utilization of private power generation *5	-	-	-
	New installation of emergency power sources *6	-	-	-
	Hydro	66	76	70
	Pumped-storage power generation *7	27	37	35
	Geothermal, etc.	0	1	1
	Electricity trades among power utilities, etc. *8	-61	-1	-1

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

4) Tohoku Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	-98 (-6.6%)	-103 (-7.3%)	5 (0.3%)
Maximum electricity demand *2	**Aggregate demand**	1,480	1,420	1,480
Supply capabilities *3	**Supply capabilities (total)**	1,382	1,317	1,485
Breakdown of supply capabilities	Nuclear*4	0	0	0
	Thermal	957	1,084	1,225
	Recovery of affected thermal power plants	81	94	88
	Adjustment of periodic inspection timing	85	-	-
	Resumption of long-term idle thermal power plants	35	-	-
	Utilization of private power generation *5	22	15	13
	New installation of emergency power sources *6	2	9	87
	Hydro	167	148	169
	Pumped-storage power generation *7	69	68	69
	Geothermal, etc.	18	23	29
	Electricity trades among power utilities, etc. *8	171	-7	-7

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

5) Tokyo Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	-530 (-8.8%)	-56 (-1.1%)	-807 (-13.4%)
Maximum electricity demand *2	**Aggregate demand**	6,000	5,150	6,000
Supply capabilities *3	**Supply capabilities (total)**	5,470	5,094	5,193
Breakdown of supply capabilities	Nuclear*4	249	140	0
	Thermal	4,347	4,265	4,455
	Recovery of affected thermal power plants	1,162	59	47
	Adjustment of periodic inspection timing	0	-	-
	Resumption of long-term idle thermal power plants	85	-	-
	Utilization of private power generation *5	156	125	67
	New installation of emergency power sources *6	149	171	177
	Hydro	308	215	316
	Pumped-storage power generation *7	700	500	450
	Geothermal, etc.	0	0	0
	Electricity trades among power utilities, etc. *8	-134	-27	-28

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

6) Central and Western Japan, 6 power utilities

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	102 (1.0%)	-33 (-0.4%)	-823 (-8.3%)
Maximum electricity demand *2	**Aggregate demand**	9,968	8,662	9,968
Supply capabilities *3	**Supply capabilities (total)**	10,070	8,629	9,145
Breakdown of supply capabilities	Nuclear*4	790	178	0
	Thermal	7,248	6,882	7,152
	Recovery of affected thermal power plants	0	0	0
	Adjustment of periodic inspection timing	135	436	178
	Resumption of long-term idle thermal power plants	75	22	0
	Utilization of private power generation *5	107	66	85
	New installation of emergency power sources *6	0	0	0
	Hydro	745	585	740
	Pumped-storage power generation *7	1,290	988	1,249
	Geothermal, etc.	17	18	17
	Electricity trades among power utilities, etc. *8	-20	-21	-13

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

7) Chubu Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	92 (3.4%)	143 (6.1%)	41 (1.5%)
Maximum electricity demand *2	**Aggregate demand**	2,709	2,342	2,709
Supply capabilities *3	**Supply capabilities (total)**	2,801	2,485	2,750
Breakdown of supply capabilities	Nuclear*4	0	0	0
	Thermal	2,243	2,059	2,179
	Recovery of affected thermal power plants	-	-	-
	Adjustment of periodic inspection timing	68	-	-
	Resumption of long-term idle thermal power plants	75	0	0
	Utilization of private power generation *5	-	-	-
	New installation of emergency power sources *6	-	-	-
	Hydro	143	90	143
	Pumped-storage power generation *7	401	329	400
	Geothermal, etc.	0	0	0
	Electricity trades among power utilities, etc. *8	15	7	28

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

8) Hokuriku Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	11 (2.0%)	13 (2.4%)	-9 (-1.5%)
Maximum electricity demand *2	**Aggregate demand**	573	528	573
Supply capabilities *3	**Supply capabilities (total)**	584	541	565
Breakdown of supply capabilities	Nuclear*4	0	0	0
	Thermal	435	435	435
	Recovery of affected thermal power plants	-	-	-
	Adjustment of periodic inspection timing	25	140	165
	Resumption of long-term idle thermal power plants	-	-	-
	Utilization of private power generation *5	-	-	-
	New installation of emergency power sources *6	-	-	-
	Hydro	140	117	140
	Pumped-storage power generation *7	11	10	11
	Geothermal, etc.	0	0	0
	Electricity trades among power utilities, etc. *8	-1	-21	-21

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

9) Kansai Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	-123 (-3.9%)	-225 (-8.4%)	-605 (-19.3%)
Maximum electricity demand *2	**Aggregate demand**	3,138	2,665	3,138
Supply capabilities *3	**Supply capabilities (total)**	3,015	2,440	2,533

Breakdown of supply capabilities	Nuclear*4	337	87	0
	Thermal	1,873	1,776	1,854
	Recovery of affected thermal power plants	-	-	-
	Adjustment of periodic inspection timing	7	196	3
	Resumption of long-term idle thermal power plants	-	-	-
	Utilization of private power generation *5	93	56	75
	New installation of emergency power sources *6	-	-	-
	Hydro	243	195	238
	Pumped-storage power generation *7	449	338	395
	Geothermal, etc.	0	0	0
	Electricity trades among power utilities, etc. *8	114	44	47

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

10) Chugoku Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	62 (5.1%)	90 (8.4%)	33 (2.7%)
Maximum electricity demand *2	**Aggregate demand**	1,201	1,074	1,201
Supply capabilities *3	**Supply capabilities (total)**	1,263	1,164	1,234
Breakdown of supply capabilities	Nuclear*4	82	69	0
	Thermal	1058	964	1,023
	Recovery of affected thermal power plants	-	-	-
	Adjustment of periodic inspection timing	-	-	-
	Resumption of long-term idle thermal power plants	-	-	-
	Utilization of private power generation *5	-	-	-
	New installation of emergency power sources *6	-	-	-
	Hydro	49	51	49
	Pumped-storage power generation *7	148	83	162
	Geothermal, etc.	0	0	0
	Electricity trades among power utilities, etc. *8	-74	-2	0

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

11) Shikoku Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	24 (4.0%)	-17 (-3.3%)	-67 (-11.3%)
Maximum electricity demand *2	**Aggregate demand**	597	520	597
Supply capabilities *3	**Supply capabilities (total)**	621	503	529

Breakdown of supply capabilities	Nuclear*4	113	22	0
	Thermal	466	454	484
	Recovery of affected thermal power plants	-	-	-
	Adjustment of periodic inspection timing	35	-	-
	Resumption of long-term idle thermal power plants	-	22	-
	Utilization of private power generation *5	14	10	10
	New installation of emergency power sources *6	-	-	-
	Hydro	60	46	60
	Pumped-storage power generation *7	52	28	52
	Geothermal, etc.	0	0	0
	Electricity trades among power utilities, etc. *8	-70	-47	-67

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from “Summertime Electricity Demand-Supply Strategies” (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the “Electricity from other power utilities, etc.” section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

12) Kyushu Electric Power

(in 10,000 kW)		This summer	This winter	Next summer
Supply reserve rate *1	**Supply less demand (reserve rate [%])**	36 (2.1%)	-37 (-2.4%)	-216 (-12.3%)
Maximum electricity demand *2	**Aggregate demand**	1,750	1,533	1,750
Supply capabilities *3	**Supply capabilities (total)**	1,786	1,496	1,534
Breakdown of supply capabilities	Nuclear*4	257	0	0
	Thermal	1,174	1,194	1,178
	Recovery of affected thermal power plants	-	-	-
	Adjustment of periodic inspection timing	-	100	10
	Resumption of long-term idle thermal power plants	-	-	-
	Utilization of private power generation *5	-	-	-
	New installation of emergency power sources *6	-	-	-
	Hydro	110	85	110
	Pumped-storage power generation *7	230	200	230
	Geothermal, etc.	17	18	17
	Electricity trades among power utilities, etc. *8	-2	-2	0

*1: Supply reserve rate should be at least 3% (or normally 8% or more) to supply electricity stably.
*2: The maximum electric power demand for the service areas of Tokyo and Tohoku Electric Powers comes from "Summertime Electricity Demand-Supply Strategies" (Electricity Demand-Supply Emergency Countermeasures Headquarters, May 13, 2011), which are based on the summertime peak demand (daily maximum demand) in FY 2010. As for the service areas of other utility firms, the maximum demand is estimated at the FY 2011 summertime actual demand or the FY 2011 summertime peak demand projection, whichever is higher. The same rule shall apply to demand-supply data for this winter or the next summer.
*3: Supply capabilities represent the projected supply capacities as of July 27, 2011.
See 5 (2) in the main text (pp. 13) for more information on the review of future supply capabilities.
*4: It is assumed that nuclear power stations will not resume their operations after periodic inspection.
*5) Private power generation is included if the private power generator already enters into an agreement with a power utility.
For more information on private power generation systems that would provide additional supply capabilities, see 3 (2) in the main text (pp. 10, Appendix 5).
*6: Emergency power sources represent the projected supply capacities as of July 27, 2011.
For more information on future emergency power sources, see 3 (2) in the main text (pp. 9, Appendix 5).
*7: As for pumped-storage hydroelectric power generation, the authors have calculated the data, paying attention to the capacities of pumped up water with nighttime power.
For more information on the utilization of pumped-storage hydroelectric power generation, see 3 (2) in the main text (pp. 10).
*8: The data in the "Electricity from other power utilities, etc." section take a negative value because the data include electric power supplied to PPS (Power Producer & Supplier: electric power retailer for large-lot consumers).

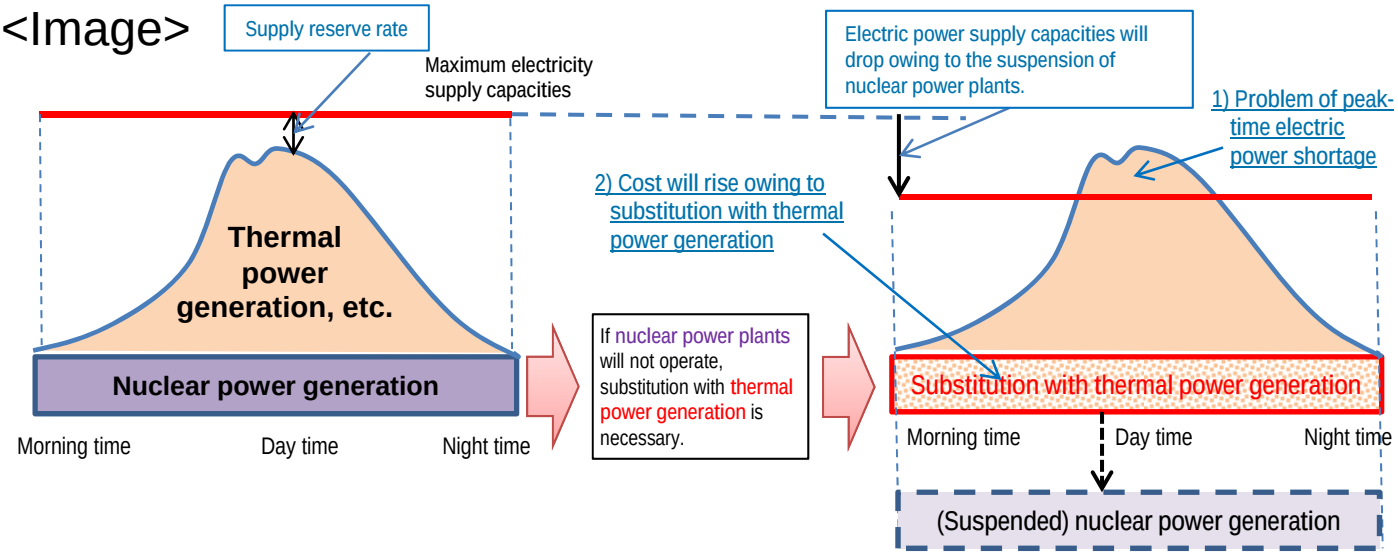
(Appendix 2) Projection of electricity cost rise by fuel substitution

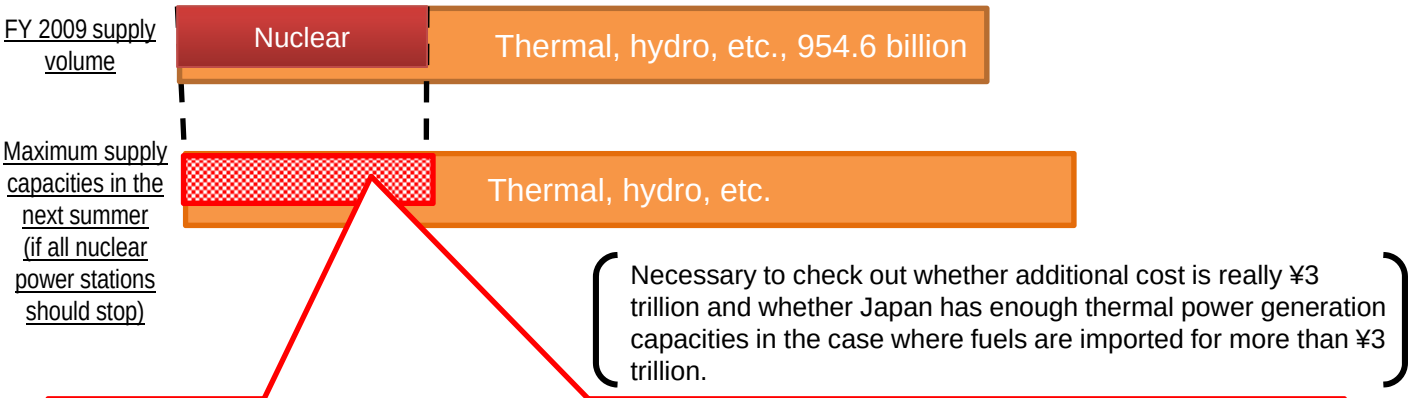
METI's projections:
If nuclear power plants do not resume operations, thermal power plants need to supply electric power for the entire day, including peak time and night time.
METI estimates additional fuel cost in the case where LNG and oil-fired thermal power plants provide all of the FY 2009 output that would have been generated from nuclear power plants (approximately 280 billion kWh).

More than ¥3 trillion

(The data do not include projections of higher LNG prices owing to Japan's increased demand or electric power reduction through energy-saving practices.)

<Image>





Necessary to check out whether additional cost is really ¥3 trillion and whether Japan has enough thermal power generation capacities in the case where fuels are imported for more than ¥3 trillion.

Cost rise (METI's estimate)

Nuclear-based electric power generated in Japan × Price rise owing to fuel substitution = ¥3.16 trillion

(27.45 billion kWh) ¥(12.5 - 1)/kWh

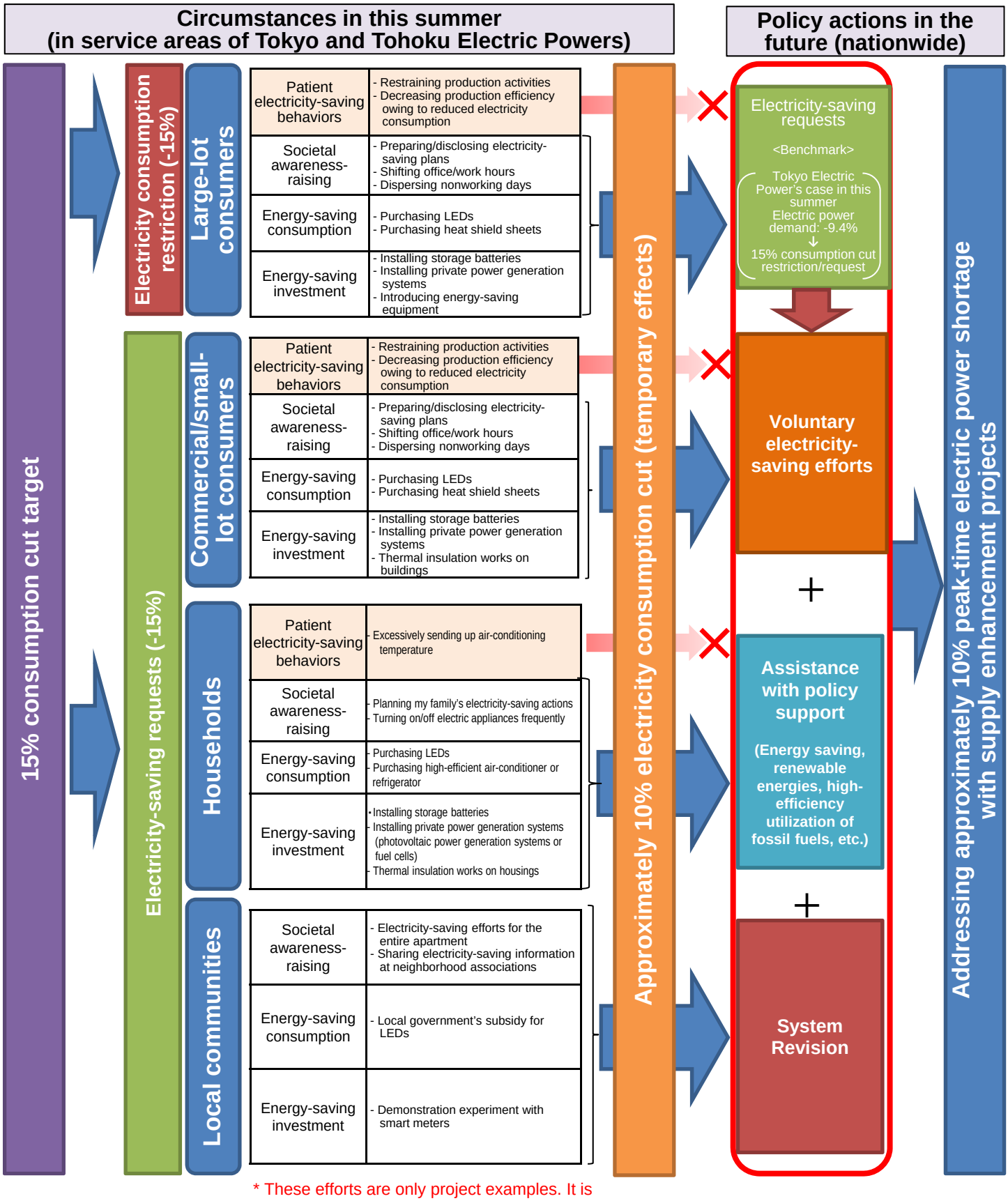
[Capacity utilization rate is assumed to stay unchanged at the FY2009 level]

Thermal fuel cost per kWh
(LNG: ¥11/kWh; oil: ¥16/kWh; and average: ¥12.5/kWh)

Nuclear fuel cost per kWh

(Appendix 3) Concept of peak cut projects

Taking less inhibitory policy actions, shifting away from inhibitory policy actions on national economy



* These efforts are only project examples. It is necessary to check out which project would work effectively.

(Appendix 4) Regional electricity-saving practices by local governments (demonstration test examples)

Yamagata prefecture

"Social experiment on the Yamagata-style electricity-saving project"

○ How to conduct the project:

1) Deciding on the dates of electricity-saving efforts

2)-1 Holding briefing sessions (May 11–13, 4 locations in Yamagata prefecture)
2)-2 Making use of news media, various media (press releases, websites of prefectural governments or other public organizations, community magazines, etc.)
2)-3 Providing information with posters or flyers
2)-4 Calling for electricity-saving cooperation by drawing on actual electricity-saving project examples

3) Analyzing the electricity-saving ratio by collecting data from Tohoku Electric Power after a demonstration test

- ○ Reduction target: -15% at the peak time on a year-to-year comparison
- ○ The project is applicable to all consumers in Yamagata prefecture (selecting 23 corporations/business establishment volunteers and 8 household volunteers in Yamagata prefecture for sampling purposes).
- ○ Date: May 23 and 31
- ○ Experiment results: Reduction rate: -12% (the 1st round), and -12% (the 2nd round) (as calculated from prefectural demand data in cooperation with Tohoku Electric Power)
- ○ Factor analysis: CRIEPI (Central Research Institute of Electric Power Industry) analyzes unsuccessful factors as follows on the basis of the sampling survey.
  1) Time span of PR efforts and information services for households or SMEs is short and
  2) Households do not have a specific idea about specific actions that would contribute to electricity saving.

Niigata prefecture

"Peak cut 15% Operation Trial"

○ How to conduct the project:

1) Deciding on the dates of electricity-saving efforts (March 31)

2)-1 Holding local briefing sessions (April 4 and 5, 4 locations in Niigata prefecture)
2)-2 Governor's on-site visits to companies working on the project (April 13)
2)-3 Making use of news media, various media (press releases, websites of prefectural governments or other public organizations, community magazines, etc.)
2)-4 Requesting cooperation to minimize electricity consumption on the project dates

3) Analyzing the electricity-saving ratio by collecting data from Tohoku Electric Power after a demonstration test

- ○ Reduction target: -15% at the peak time on a year-to-year comparison
- ○ The project is applicable to all consumers in Niigata prefecture (selecting prefectural residents and corporations/business establishments for sampling purposes).
- ○ Date: April 13 and 27, and June 21
- ○ Experiment results: Reduction rate: -17% (the 1st round), -5.4% (the 2nd round), and -9.1% (the 3rd round) (as calculated from prefectural demand data in cooperation with Tohoku Electric Power)
- ○ Factor analysis: Only disclosing numerical data

Kanagawa prefecture

"Electricity-saving Challenge"

○ How to conduct the project:

1) Deciding on the dates of electricity-saving efforts (May 17)

2)-1 Making use of news media, various media (press releases, websites of prefectural governments or other public organizations, community magazines, etc.)
2)-2 Providing necessary information from NHK FM radio station (June 21)
2)-3 Calling for electricity-saving cooperation of prefectural residents and corporations

3) Analyzing the electricity-saving ratio by collecting data from Tokyo Electric Power after a demonstration test

- ○ Reduction target: -15% at the peak time on a year-to-year comparison
- ○ The project is applicable to all consumers in Kanagawa prefecture (selecting 8 household volunteers, 10 monitor schools, and private enterprises for sampling purposes).
- ○ Date: June 22
- ○ Experiment results: Reduction rate: -13.4% (as calculated from prefectural demand data in cooperation with Tokyo Electric Power)
- ○ Factor analysis: Only disclosing numerical data

Arakawa ward

"System demonstration test by outage prevention liaison network"

○ How to conduct the project:

1) Japan Science and Technology Agency has formed an alliance with local governments (Arakawa ward, Kashiwa city, Kawasaki city, and Yokohama city) for electricity-saving demonstration tests.

2)-1 Selecting monitor households and holding briefing sessions
2)-2 Distributing questionnaires and installing an "energy-saving navigator" (meter that records electricity consumption)

3) Japan Science and Technology Agency collects and analyzes the data after the demonstration test.

- ○ Reduction target: Setting up liaison network for outage prevention purposes and confirming electricity-saving effects
- ○ Scheme: Alliance among Arakawa ward, Kashiwa city, Kawasaki city, and Yokohama city (Japan Science and Technology Agency serves as the responsible organization, while local governments provide locations)
- ○ The project is applicable to approximately 500 households selected by local governments (data actually collected on approximately 100 households)
- ○ Date: May 25, and June 16 and 22
- ○ Experiment results: More than 80% of the households take electricity-saving actions. Households equipped with an "energy-saving navigator" successfully reduce electricity consumption by approximately 20% (as calculated from electricity consumption data from energy-saving navigators)

(References) Other local governments working on electricity-saving demonstration tests:
Akita prefecture, Tochigi prefecture, and Nagano prefecture

* This page is developed in line with METI data.

(Appendix 5) Utilizing private power generation

(1) Possibility of utilizing private power generation as a peak-time electric power source

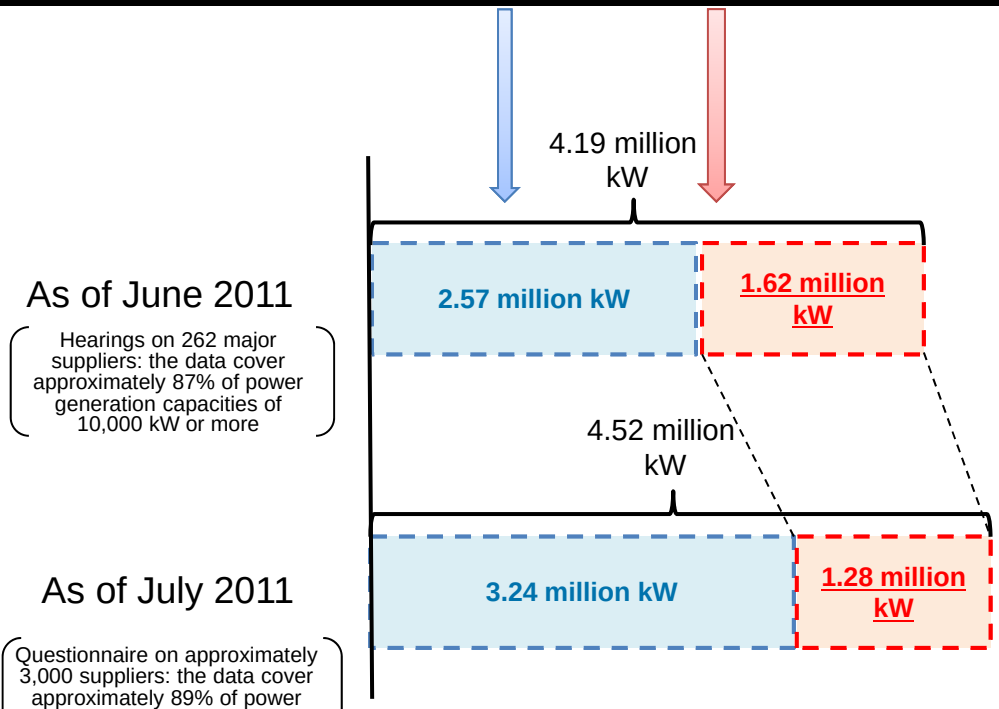
As of July 27, 2011

(Total of nine power utilities, except for Okinawa Electric Power)

Private power generation capacities: 53.73 million kW

Reports in accordance with Paragraph 4, Article 106 of the Electricity Business Act (Power generation systems with 1000 kW or more are reportable)

Facilities of electric suppliers that provide wholesale services to power utilities: 19.28 million kW	In-house consumption-use facilities 34.45 million kW	
	Electric power sold to power utilities	In-house consumption
	Already sold / Available electric power for additional electric power selling purposes	



As of June 2011

Hearings on 262 major suppliers: the data cover approximately 87% of power generation capacities of 10,000 kW or more

As of July 2011

Questionnaire on approximately 3,000 suppliers: the data cover approximately 89% of power generation capacities of 10,000 kW or more

(2) Concept of utilizing private power generation

1. Private power generation usable at the peak time

Large

2. Private power generation usable during night time
(Capacity utilization rate of approximately 60% day and night)

Currently examining

Large

○ Usual-use private power generation

- How much is available out of the installed capacity (1000 kW or more per unit) of 53.73 million kW?

(1.28 million kW, including estimates)

Small

○ Emergency-use private power generation

- How much is available out of the installed capacity (1000 kW or more per unit) of 23 million kW?

○ Surplus supply capacity is available

- Relatively competitive LNG thermal power plants may provide electric power during night time when plants, etc. are not operating.

Utilization approaches and policy supports

Usual-use private power generation
(1.28 million kW, (including estimates))

Utilizing permanent private power generation as a peak-time power source

Emergency-use private power generation
(23 million kW)

Consumers will use their emergency private power generation capacity for self-help purposes at the peak time

Utilizing usual-use private power generation during night time

(1) Making use of permanent private power generation coupled with storage batteries and pumped-storage power generation as a peak-time solution

(2) Making use of permanent private power generation as a solution to encourage competition between private power generators and power utilities and reduce costs on nighttime power

(Appendix 6)

Confirming the safety of Japan's nuclear power generations
(Introducing a safety evaluation scheme according to stress tests)

July 11, 2011
Yukio Edano, Chief Cabinet Secretary
Banri Kaieda, Minister of Economy, Trade, and Industry
Goshi Hosono, Minister of State for Special Missions

<Recognition of the current situations >

1. As for nuclear power plants in Japan,
   - ○ power plants at work are legally operating in accordance with the current applicable law and
   - ○ power plants under periodic inspection are also confirmed safe in accordance with the current applicable law.

In addition, in the advent of the Fukushima Nuclear Power Plant accident, the Nuclear and Industrial Safety Agency (NISA) has confirmed the safety of these power stations in terms of their emergency safety measures, etc. The safety of these power plants is confirmed more carefully than in the past.

<Problems>

2. On the other hand, some analysts agree with NISA's confirmation that nuclear power plants are safe enough to resume their operations after periodic inspection, but many other analysts are raising questions. Currently, it is difficult to say that the government has successfully won sufficient understanding from citizens and local residents.

Continued from 1) of Slide 33

<Solutions>

3. Under this situation, the government will follow European stress tests and conduct safety evaluation based on new procedures and rules in order to further improve the safety of nuclear power plants, to make citizens and local residents feel at ease and to lay trust in nuclear power plant's safety.

   To be more specific, in response to the request of the Nuclear Safety Commission dated July 6, the government will conduct a safety evaluation as follows. In the safety evaluation process, after the Nuclear Safety Commission (not required to get involved according to the current law) makes confirmations on evaluation items and evaluation plans, electric power suppliers will evaluate safety in line with such evaluation items and evaluation plans. After that, NISA will check out the evaluation results, and then the Nuclear Safety Commission will verify the validity of the evaluation results.

- Primary assessment (making decisions on the feasibility for resting nuclear power plants to resume operations after periodic inspection)

  At a nuclear power plant that undergoes periodic inspection and gets ready for resuming operations, the assessment team will check how much important facilities and machines have safety tolerance if there is an event going beyond design assumptions.

Continued from 1) of Slide 33

- Secondary assessment (making decisions on the feasibility of continuing or stopping operations at operating nuclear power plants)

  In addition, paying due attention to actual stress tests in European nations and discussions of the Fukushima Nuclear Power Plant Accident Investigation/Verification Committee, the assessment team will conduct a comprehensive safety assessment on all the nuclear power plants, including those undergoing primary assessment.

(Appendix 7) The timetable for Immediate Energy Supply-Demand Stabilizing Measures

Project name	Starting time and timing for possible outcomes					Section				
	This summer	This winter	Next summer	Next winter	Summer in the year after the next, or later	Energy supply	Industry	Commer-cial	House-hold	Trans-por-tation
1. Reforming demand structure with focus on peak-time solutions and cost reduction										
○ Encouraging the installation of energy-saving equipment										
- Encouraging energy-saving investment - Encouraging the introduction of energy-saving products and the resultant peak cut (HEMS/BEMS, high-efficiency air-conditioning, and high-efficiency lighting equipment, such as LED lighting equipment, storage batteries/EVs, cogeneration, fuel cells, etc.)	→	→	→	→	→		○	○	○	○
- Encouraging the installation of energy-saving equipment through leasing	→	→	→	→	→	○	○	○	○	○
- Public facilities taking the initiative to install energy-saving equipment (storage batteries, solar cell power generation, etc.)	→	→	→	→	→			○		
- Considering energy-saving certification at the time of government procurement	→	→	→	→	→			○		
- Diagnosing energy-saving potentials	→	→	→	→	→		○	○		
○ Encouraging investment in R&D on energy-saving products and the enhancement of production capabilities of energy-saving products										
- Domestic location support (to prevent industrial hollowing-out)	→	→	→	→	→		○	○	○	○
○ Encouraging energy-saving behaviors through appropriate standards										
- Encouraging energy-saving practices through standards (in particular, encouraging energy-saving practices in the household and commercial sectors)	→	→	→	→	→		○	○	○	○
- Gradually imposing the requirement to comply with housing/building standards, etc.	→	→	→	→	→			○	○	
- Encouraging the effective utilization of thermal energies	→	→	→	→	→		○	○		
○ Fossil fuel taxation										
- Introducing new taxes to address global warming	→	→	→	→	→	○	○	○	○	○
○ Lifestyle reform, etc.										
- Information/PR activities	→	→	→	→	→	○	○	○	○	○
- Shifting of closing date/time	→	→	→	→	→		○	○	○	○
- Supporting local-based electricity-saving projects	→	→	→	→	→		○	○	○	
2. Encouraging many stakeholders to supply electric power by attaching a high value to efficiency and environment-friendliness										
○ Encouraging introduction of renewable energies										
- Introducing a fixed-price purchase program	→	→	→	→	→	○	○	○	○	
- Encouraging the installation of distributed power source systems	→	→	→	→	→	○	○	○	○	
- Encouraging renewable heats and unutilized heats (such as woody biomass)	→	→	→	→	→	○	○	○	○	
○ Introducing renewable energies at local communities										
- Establishing smart communities and pushing ahead with the local production and local consumption of distributed energies at rural villages	→	→	→	→	→	○	○	○	○	○
- Encouraging the introduction of renewable energies to local disaster-prevention bases	→	→	→	→	→		○	○	○	
○ Location restrictions										
- Zoning of appropriate locations for geothermal or wind power generation	→	→	→	→	→	○				
- Adjusting locations of photovoltaic power generation or wind power plants in farmland, forest, or fishing zones	→	→	→	→	→	○				
- Adjusting locations for solar power generation plants and geothermal power generation plants in national parks or semi-national parks	→	→	→	→	→	○				
- Developing guidelines on the Hot Springs Act individual permissions for the development of geothermal power generation	→	→	→	→	→	○				
○ Thermal power generation, etc.										
- Recovery/start-up/expansion of thermal power plants	→	→	→	→	→	○				
- Installing emergency power sources (gas turbines, etc.)	→	→	→	→	→	○				
- Exemption of the Environment Impact Assessment Act in the case of establishing power generation plants for disaster recovery purposes	→	→	→	→	→	○				
- Improving the efficiency of existing thermal power plants and private power plants, and providing related supports	→	→	→	→	→	○				
- Installing combined-cycle systems by replacing gas turbine emergency power sources established without environment impact assessment procedures, and improving their environment-friendliness	→	→	→	→	→	○				
- Pushing ahead with the installation of thermal- or gas-based distributed power sources (private power generation, cogeneration, fuel cells, etc.)	→	→	→	→	→	○	○	○	○	
- Effectively utilizing fossil fuels with state-of-the-art technologies	→	→	→	→	→	○	○			
- Utilizing pumped-storage power generation systems or storage batteries	→	→	→	→	→	○	○	○	○	
○ Resources procurement strategies										
- Stably supplying oil and gas (setting up a more stable oil/gas supply framework, enhancing wide-area gas pipelines, etc.)	→	→	→	→	→	○				
- Resources procurement strategies for stable supply purposes	→	→	→	→	→	○				
3. Reforming electric power systems										
○ Electric power market										
- Establishing a flexible electricity rate menu and enhancing consumers' incentives for peak cut	→	→	→	→	→		○	○	○	
- Creating electric power wholesale markets and making wholesale trades more active (providing a competitive environment in power generation and retail sections)	→	→	→	→	→	○				
○ Enhancing the capabilities of power transmission/distribution systems										
- Enhancing the capabilities of power transmission/distribution systems (Enhancing grid power transmission lines and strengthening wide-area power supply (such as developing a master plan for beefing up electricity trades among power utilities)) (Introducing an advanced power distribution network, such as encouraging smart grids or smart meters)	→	→	→	→	→	○		○	○	
- Installing storage batteries (encouraging equipment installation on the grid side and utilization on the demand side)	→	→	→	→	→	○	○	○	○	
○ Grid operations										
- Reviewing grid operation rules to encourage market entries of renewable energies, distributed power sources, or private power generation (such as reexamining consignation schemes, connection schemes, or private power generation supply contracts, and creating legal provisions on a priority grid connection of renewable energies)	→	→	→	→	→	○				
- Increasing wind power generation's grid connections through integrated wide-area grid operations by Tohoku and Tokyo Electric Powers	→	→	→	→	→	○				
- Keeping neutrality and fairness in power transmission/distribution	→	→	→	→	→	○				

(Appendix 8) The list of regulatory and system reforms related to Energy Supply-Demand Stabilizing Measures

Demand

Distributed power sources

- Smoother grid connection of consumer's power sources
  - Reexamining service fees, including frequency maintenance services for stable electric power consumption
  - Reexamining grid connection rules or operation rules
- Making clear trading rules on power shortage or surplus electric power generated from consumer's power sources
  - Reexamining power generation rules in line with power utilities' demand fluctuation (the requirement of concurrent and equal-amount supply)
  - Reexamining partial supply or back-up fee schemes
  - Creating an electric power wholesale market
- Pushing ahead with demand-supply management on the consumer side
  - Examining possible consignation schemes suitable to balancing groups for demand management with storage batteries or to aggregator schemes for area-based collective demand-supply management
- Expanding consumer choices
  - Expanding the scope of free retail services, such as lifting embargoes on retail business
  - Reexamining partial supply (as mentioned earlier)

Storage batteries

- Creating appropriate safety regulations on storage batteries

Energy saving

- Intensifying/strengthening energy-saving regulations (on housings or buildings)
- Creating an appropriate framework to push ahead with thermal utilization (Examining the feasibility of relaxing the heat conduit construction requirement)
- Reexamining the electricity fee scheme
  - Enhancing consumers' incentives for peak cuts through a flexible fee menu (compatible with smart meters)

Supply

Renewable energies

- Launching a fixed-price purchase program (Feed In Tariff scheme)
- Introducing new legal provisions on priority grid connections
- Reforming location regulations [Expanding permitted locations] [Granting the public utility status to renewable energy suppliers]
  - Smoother adjustment with natural parks, spa areas, reserve/national forests, or farmland (fields and rice paddies that have been abandoned and are no longer cultivated), and a more flexible location scheme
  - Streamlining the procedures on setting up plants at ports or in coastal areas
  - Smoother adjustment with the use of fishing places
  - Streamlining the water concession permission procedures
  - Smoother utilization of biomass resources
- Streamlining security/environment-related schemes
  - Streamlining the scope of eligible persons to be appointed as lead engineer
  - Quicker environment assessment services
- Creating appropriate safety regulations on storage batteries (as mentioned earlier)

Grid utilization

- Improving grid networks
- Enhancing wide-area electricity trades among power utilities
- Reexamining grid utilization-related rules

Private power generation, fuels, etc.

- Encouraging private power generators to tap into electric business
  - Conducting public bidding for new power source projects
  - Pushing ahead with cogeneration (system that uses heat yielded from power generation)
- Streamlining security/environment-related schemes
- Creating an electric power supply framework less subject to risks (creating gas pipelines, stockpiling, etc.)

Electric power systems

Supply systems

- Creating a new framework in which a wide variety of stakeholders will tap into power source business
  - Distributed power source-related projects (as mentioned earlier)
  - Renewable energy-related projects (as mentioned earlier)
  - Improving conditions in the electric power wholesale market
  - Providing legal status and neutrality for the electric power wholesale market
- Improving infrastructure to encourage competition
  - Reexamining grid operation rules
  - Reexamining grid connection rules
  - Giving neutrality to the power transmission division, including the aforementioned efforts
  - Creating grid lines
  - Enhancing wide-area electric power trades among power utilities
  - Creating smart grid (power transmission/distribution line) network
  - Diffusing smart meters (meters with communications capabilities)
  - Creating appropriate safety regulations on storage batteries (as mentioned earlier)
- Separation between public utility business and competitive businesses (dividing ridge between the public and private sectors)

Nuclear

- Creating an appropriate compensation scheme for nuclear damages
- Examining nuclear safety regulations