Electric Power Market Deregulation Plan

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Basic Policies Committee
of
the Electric Utility Industry Council

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Introduction

The Basic Policies Committee of the Electric Utility Industry Council was established in July 1997 under the "Program for Reformation and Reinvention of the Japanese Economic Structure (approved by the Cabinet in December 1996) and the "Action Plan for Reformation and Reinvention of Japanese Economic Structure (approved by the Cabinet in May 1997). The Committee was tasked with determining how Japanese electric power utility industry could reform its structure, in both the mid- and long-term, in order to reduce electricity cost in our country to internationally comparable levels by 2001. In response, the Committee has conducted 14 meetings to date to review and discuss the issue.

Some matters were agreed to in December 1997. Three subcommittees decided to (1) introduce a totally competitive bidding system for the thermal power generation sector, (2) develop the measures to improve load factors, and (3) reduce the costs of power transmission and distribution (T&D) equipment.

In its review of the overall power supply system, focusing on the deregulation of retail power service, the Committee deepened its understanding of deregulation in other countries and the trend of domestic public opinions. Since early 1998, the Committee discussed in-depth on the concept of electric power market deregulation and its effects.

As a result of these discussion, the Committee identified the following three objectives at its seventh meeting on March 13, 1998:

(1) To balance the requirements for efficiency improvement with the requirements for universal service, power supply reliability, energy security and environmental preservation

(2) To introduce competition into the electric power market, including retail power service, as a means to increase efficiency

(3) To build a new power supply system appropriate for the coming century, considering appropriate time schedules

After reviewing the drafts prepared by four Committee members (Suetugu, Turuta, Nambu and Hatta) and a report entitled Three Options for Power Market Liberalization: Partial Deregulation of Retail Power Services, Total Deregulation, and Introduction of Power Pool Market System, the Committee completed an interim report on May 27, 1998 and identified the following future actions needed to establish a new power system:

(1) To further investigate the issues regarding a new power system, focusing on Partial Deregulation for the present

(2) Introducing Total Deregulation or Power Pool Market System at this time would be premature. These issues should be considered in the future. It is appropriate for now to discuss when to

determine the necessity of those new systems based upon verified foreign experience.

(3) To design a desirable system for power market deregulation from the following perspective:

① Maximizing the creativity and management independence of the private sector, while minimizing government intervention.

② Ensuring fair and effective competition between electric power utilities and new participants to power market.

③ Clarifying the methods to offer the potential benefits of efficiency improvement to all customers.

Since September 1998, an Expert Advisory Committee (established to define the particulars of the interim report and chaired by Prof. Sakae Uekusa) has reviewed the detailed institutional system design for Partial Deregulation, and, on November 25, 1998, presented a conceptual plan with the following goals:

(1) Based on an open access rule to power transmission networks, the deregulation of retail power service in the extra-high-voltage power sector shall be implemented by 2000.

(2) In the power generation sector, a wide area generation market system shall be revitalized and promoted, including the introduction of free-market bidding system in the thermal power generation sector which will be implemented along with the deregulation of retail power services for extra-high voltage power customers.

(3) To review the pricing mechanisms to ensure that the benefits of utilities' management efficiency improvements resulting from competition are properly reflected in the regulated sectors. (This issue is to be reviewed separately by the Pricing System Committee.)

(4) To take the necessary institutional precautions in designing the new system such that the system serves the public interests - such as accomplishing universal services, maintaining supply reliability, and establishing an optimal energy source mix for energy security and environmental preservation, which includes the promotion of nuclear power. The costs of this effort, in principle, will be equally shared among all customers.

The Committee, after reviewing comprehensively the process and details of these discussions, is now presenting its findings regarding the optimum plan for a future power supply system, as requested by the Minister of International Trade and Industry.

The following chapters will describe on the basic policy to develop a new power system (Chapter 1) and an outline of proposed institutional reformation (Chapter 2), and will provide some suggestions on the schedule to implement a new system, as well as the evaluation activities in the future (Chapter 3).

Chapter 1 The Basic Policy to Develop a New Power System

1. Public interests as values to be maintained

Since electricity is one of the indispensable goods for our everyday life and industrial activities, the electric utility industry is required to address issues of public interest, such as accomplishing universal services, maintaining supply reliability, establishing an optimal mix of energy sources for energy security and environmental preservation, as well as traditional requirements to improve the efficiency for lower electricity supply costs.
It may well be said that the institutional systems and policies for the electric utility industry have been invented and introduced to respond to these issues mentioned above, reflecting the specific circumstances of each period of time.

The Government, experienced from the competitive market in the very early years to its control of the utility industry before World War II, has been addressing these issues since after the War, vesting each private utility company with the right of regionally monopolistic power supply in vertically integrated structure of generation, transmission and distribution services, while regulating the utility industry to exclude the adverse, monopolistic effects. In addition, the wide area operating system where nine electric power utilities and wholesale suppliers act in concert with each other on construction and operation of generating facilities has complemented the basic power supply system to fill the gaps among their approved service areas.

Under this system, areas without any power services have disappeared, universal service has been accomplished, and regional disparities in power rates have been eliminated. Also, electric power utilities have constructed T&D facilities and made long-term investments in nuclear power development and other power sources for an integrated supply system. They have met the steady increase in power demand and made a great contribution to the national energy policies for sustainable energy security and environmental preservation. In addition, power outage time has been reduced, and voltage and frequency have been stabilized, which has reached the highest point in quality of power supply in the world.

The great achievements of public interest attained through those efforts could be referred to as one of the national treasures and it is essential to preserve this public interest in the future. Therefore, it is a prerequisite in redesigning the power supply system both to improve power supply efficiency and to serve the needs of public interests.

2. Efficiency improvement through competition

On the other hand, the situation surrounding the electric power utility industry has changed drastically. In consequence, the electric utility industry is now faced with the requirement to further improve efficiency, as it becomes widely understood that the major problem to be solved to achieve the economic reformation of our country is to correct the existing high-cost economic structures in the areas of finance, distribution, energy, information and telecommunication, which are all fundamental

factors of industrial activities.

In the foreign countries, various measures to introduce or facilitate competition, such as retail power service deregulation or power pool market system, have been specific to the conditions of each country. In our country, the 1997 survey on potential supply capacities of Independent Power Producers (IPPs) shows that Japanese IPPs have significant supply capacities, and are therefore possible non-utility power suppliers.

Even more urgent and pressing, there is a need to address increasing public concerns about the global environment problems after Kyoto Protocol in COP3 in 1997 and to promote nuclear power development as a measure for our country's energy security. The balance between competition and public interest is an important issue in reforming the electric utility industry also in foreign countries. They are adopting various sets of measures for public interests such as energy security and environmental preservation according to the specific conditions of each country, while cautiously introducing competition as a means of efficiency improvement.

In Japan, we have taken several actions, such as introduction of a bidding system into power generation sector after the revision of the Electric Utility Industry Law in 1995. With the drastic changes in the conditions mentioned above, however, it is time to review and develop the most appropriate combination of efficiency improvements through competition and the preservation of public interests.

For establishing a new system of the electric utility industry, there are three options to be reviewed: (1) Introduction of Power Pool Market System, (2) Total Deregulation in all customer groups, and (3) Partial Deregulation in certain groups of customers. The third option is considered to be the best for the following reasons.

First, since the number of entrants could be enormous when Total Deregulation or Power Pool Market System are introduced into the power market, it is afraid that some entities without the ability to maintain a stable power supply might enter the market. It is anticipated that it will take considerable time to establish the mechanisms and rules for maintaining supply reliability. As for the introduction of Power Pool Market, this would require drastic changes in power generation and T&D systems. More aggressive and definitive initiatives, such as more enforcing actions for specified power sources will likely be needed to establish an optimal energy source mix for energy security and environmental preservation.

With Partial Deregulation, on the other hand, it would be possible to accomplish universal service, although further reviews are still necessary on how to make the benefits of efficiency improvement penetrate the entire customers. Since the number of market entrants under Partial Deregulation would be limited, it is thought to be relatively easy to develop the systems and rules for maintaining supply reliability. Partial Deregulation allows a flexible approach to the most optimal mix of energy sources for energy security and environmental preservation, with independent efforts by utilities and with other supportive actions, such as sharing burdens among their customers, since the certainty of the power supply/demand projections by the electric utilities tends to be guaranteed by themselves, who

are responsible to the energy mix in general.

For these reasons, the reformation of Japan's electric utility industry shall be reviewed focusing on Partial Deregulation. It is appropriate to design a new system on the following three principles:

As the first principle, the independence of utilities' management should be maximized and the intervention by the government should be minimized. In order to realize the basic idea of the economic structure reformation as a whole, that is, the idea of efficiency improvement through competition, it is essential that a new system conform to this principle, for the sake of utilities, new entrants and customers.

The second principle is to ensure fair and effective competition. It is required that utilities and new entrants should compete on equal terms, sharing necessary and sufficient responsibility to maintain the reliability of supply. At the same time, fair competition should not reinforce regulations but be made more effective with various institutional systems, such as access rules in the transmission sector based upon the assumption of transparent pricing and fair competition.

The third principle is to ensure that the benefits of efficiency improvement are enjoyed by all customers. As a matter of course, adverse effects on those customers without any relation to deregulation of the electric utility industry should be eliminated as much as possible. At the same time, the benefits of efficiency improvement through competition resulting from Partial Deregulation should be delivered to every customer.

Chapter 2 Outline of System Redesigning

Section 1 Specific Concepts of Partial Deregulation in the Retail Power Sector

1. Scope of deregulation

One of the most controversial issues with Partial Deregulation is the scope of deregulation. That is, which customers would be allowed to choose their suppliers, and on what should make the criteria of those customers.

It would be advisable to define these customers as the ones who could negotiate prices and quality of service with utilities or non-utility suppliers. In order that those non-utility suppliers (new entrants) could supply power services to customers, it is essential for the new entrants to use the existing T&D networks of utilities. Therefore, the scope of deregulation would be limited so that the stability of the systems of the overall electric utility industry could never be damaged, even if utilities permit those new entrants to use their networks.

In Japan, there are four major categories of customers: industrial demand, commercial demand, low-voltage-power demand and lighting (residential-use) demand. The industrial demand is further divided into three groups: extra-high-voltage demand, high-voltage demand A, and high-voltage demand B. The commercial demand category is also divided into two groups: extra-high-voltage demand and high-voltage demand.

As for the extra-high-voltage demand, the customers are already in a position possible to choose from several options of installing private power generation facilities of their own, receiving power services under the supply agreements prepared by utilities, or contracting under various selective agreements. These customers are already enjoying these benefits.

Furthermore, there appears to be no significant impediments to system stability if new entrants are allowed to use utilities' networks to supply customers of the extra-high-voltage demand group, since utilities are closely monitoring and controlling these customers through their existing power dispatching systems.

Therefore, it is appropriate to consider the group of customers currently classified as extra-high-voltage demand (customers receiving power at the level of more than 2000kW on an extra-high-voltage system o
f more than 20,000V) as the first customers allowed to choose their suppliers. Consumption by these customers currently accounts for roughly 30% of total power supply by power utilities.

2. Institutional system design for deregulated demand sectors

The second issue with Partial Deregulation is the institutional system design for deregulated demand sectors. At present, the current Electric Utility Industry Law allows utilities to supply retail power service monopolistically within their approved service areas, while at the same time the Law imposes

power price controls and legal supply obligations on utilities. As for the supply to the customers of extra-high-voltage power to be deregulated this time, the entry of non-utility suppliers will be allowed. But this raises a new issue: whether price controls and supply obligations should be imposed on those utilities and new entrants. This issue covers other topics, such as measures to prevent possible adverse effect of deregulation on still-regulated demand sectors within each utility, and adjustments of the existing power generation and supply system for specific power demand.

(1) Principles

Since the deregulated customers are the extra-high-voltage power customers with the ability to negotiate with suppliers, the authorities supposedly need not impose any restrictions of entry, price controls and supply obligations in advance. As for the supply to the deregulated customers, it is appropriate, as a principle, not to impose any restrictions of entry, price controls or supply obligations, and for the transaction to be conducted essentially under private contracts completed through open negotiations between the parties.

In consequence, power suppliers including utilities will be able to make the best use of their own creative ideas in the competitive market environment. It is expected that many options will be available to customers on the principles: for example, customers could select power services offered by several suppliers, and, on the other hand, those suppliers could provide power in cooperation with other power suppliers. These institutions would ensure that customers' independent choice of suppliers will effectively produce benefits.

Although the power supply out of utilities' own service areas has been traditionally regulated, the inter-area power supply system of extra-high-voltage power needs to be reviewed from the perspective of securing utilities' managerial independence. It is also advisable to review the process of ex-ante governmental regulations with regard to business diversification and electric equipment transfer, in order to secure utilities' managerial independence in a broader sense.

On the other hand, the Expert Advisory Committee recommended that utilities should respond promptly to the requests for support by new entrants and to the requests for partial supply by extra-high-voltage power customers. It seems inappropriate to require utilities to meet these requests on the basis of the Electric Utility Industry Law. It is probably sufficient to perform adequate power transactions in conformity with the anti-monopoly law currently applied to the economic transactions in general, within a new system to make various types of transactions possible in principle.

(2) Ultimate supply security as an exception rule

Considering electricity as necessary commodity, certain protective measures under the Electric Utility Industry Law seem to be necessary for certain deregulated customers who fail to complete negotiation with any supplier or to reach an agreement through negotiation with utilities after they have signed and then dissolved contracts with non-utility generators.

Specifically, it is appropriate to offer benefits to these customers by prescribing the obligation of ultimate supply at the price which have been notified to the administrative authorities by the utilities in their service areas (a provision of ultimate security).

Recognizing the significance of the ultimate security, careful arrangements should be made in that provision, not to cause adverse effects on the terms of competition with new entrants and on supply to still-regulated customers, by some means like relieving utilities from meeting supply requests in the event of a lack of sufficient reserve margin.

(3) Preventive procedures against adverse effects on regulated customers

Partial Deregulation results in the co-existence of deregulated and regulated divisions within power utilities. So, in order to protect the interests of regulated power customers, some preventive measures against adverse effects of deregulation on the still-regulated division need to be taken lest the prices of regulated power should be set in a way to impose unreasonable burdens upon the regulated division.

For this purpose, it is advisable for the government to confirm whether or not the costs of regulated power are set at an unreasonably high level and to verify the specific divisional balances within a utility on the basis of its actual data of incomes and expenditures. These procedures should also help to ensure fair competition with new entrants.

As for the procedures to prevent adverse effects of deregulation onto the regulated division, the Price System Committee has presented the following conclusions, details of which are described in a report prepared by the Committee:

① The total cost shall be allocated appropriately between the deregulated and regulated divisions when the price system of the regulated division is revised.

② The government shall never approve an increase in prices of the regulated power with the intention of marking up the deficit of the deregulated division. To prevent such an increase, the specific total balance of each division shall be verified through the following procedures:

1) An objective and transparent advisory council, or similar organization shall develop a model to allocate costs rationally between these two divisions. The model shall be documented explicitly in official papers such as ministerial ordinances.

2) Companies shall set their own allocation standards based upon this allocation model and present these standards to the government authorities. These allocation standards shall be published.

3) An independent third party shall confirm that costs are allocated in accordance with the standard.

4) It is appropriate that an auditor (a certified public accountant) perform the duties of the independent third party and audit the business accounts of utilities currently

performed under the Electric Utility Industry Law .

5) As for the publication of the results of allocated incomes and expenditures, the independent third party shall confirm results at the end of each term, instead of publishing the amounts of deficits and names of companies, for fear that disclosure of the most recent managerial data might affect them adversely. However, amounts of deficit and names of companies shall be published when the balance of the deregulated division is a deficit. Furthermore, it is necessary to verify on the actual income and expenditure outcomes at the time of verification to be scheduled three years after the new system starts.

(4) Power suppliers and power supply to specified customers

The concept of a "power supplier to specified customers" was newly introduced through the amendment of the Electric Utility Industry Law in 1995 with the intent that a certain kind of power supply shall also be made possible independently of the networks among utilities, assuming the entry of non-utility generators who have smaller-scale power sources near demand areas and the ability to satisfy those demand at specific supply points with their own generation, transmission and distribution facilities. Since customers supplied by those power suppliers are assumed to be lacking in bargaining the ability to negotiate with suppliers, a mechanism is developed so that supply obligation and price control could be imposed on those power suppliers. This mechanism is quite different in contents and circumstances from the newly designed system this time on the assumption that the customers can negotiate with power suppliers who supply power through the existing utility networks.

The specified power supply is a system, designed on the assumption that the intervention by the government as the third party is unnecessary. That is, as for the transactions among the companies in a parent-subsidiary relationship or relevant to each other in the production processes (e.g. locating in the same industrial complex), the power supply are considered similar to privately-generated and self-consumed power supply and provided under the private contracts among those companies. But the relationship between customers and suppliers reviewed this time in the relation to deregulation has no resemblance to such in the privately-generated and self-consumed power market. Therefore, it is advisable to consider this specified power supply as a completely separate category from the electric power industry to be deregulated.

With regard to the systems for power suppliers and power supply to specified customers, no measures will be taken to mitigate current regulatory requirements other than to simplify the operating procedures.

3. Wheeling Service

The third issue with Partial Deregulation is what the system should be for wheeling service. Because T&D networks of the utilities enjoy economies of scale and other economic benefits, it is more effective for power utilities to monopolistically construct and operate these networks. As a result, it will be more efficient and inevitable for new entrants to utilize existing networks of utilities to deliver power to the deregulated customers.

On that occasion, it is essential that rules for network usage should be kept transparent and objective, in order to ensure equal and effective competition between new entrants and utilities who possess the networks.

Those rules constitute a so-called wheeling service system, which must be based upon three principles on a regulatory plan, details of the wheeling service rules, and procedure to establish those rules as follows.

(1) **A regulatory plan**

As for the basic approach to establish wheeling service rules, there are three options:
(1) Provisions of agreements drafted by utilities are to be approved by the government and obligation of wheeling service is to be imposed on utilities in advance;
(2) Utilities and customers are to negotiate and conclude wheeling service contracts on the basis of the agreements drafted by utilities and submitted to the authorities for approval, and disputes on wheeling service are to be settled by the authorities after the fact; and
(3) Only the anti-monopoly law or other general regulations concerning information disclosure are applied and no specific rules for wheeling service will be established.

The regulations for wheeling service need to be developed based upon the basic idea that government intervention should be minimized and utilities' managerial independence should be secured as much as possible, and also on the concept that equal and effective competition should be secured.

Considering these points, the first option is considered to be overregulation. And on the assumption that utilities construct and operate monopolistic networks, the third option to control only with the general regulations of economic transactions is considered to be abstract and difficult to ensure equality and efficiency of competition between utilities and new entrants when detailed and definitive rules for wheeling service are required. Therefore, it is appropriate to adopt the second option, assuming the transfer supply system under the current Electric Utility Industry Law as a model of regulation system for wheeling service.

(2) Details of wheeling service rules

The conditions to use wheeling services need to be defined with regards to acceptance criteria set by utilities, wheeling service charges, technical requirements for interconnection and requirements to satisfy the needs of public interests, on the principle of providing equal, fair and transparent power service.

① Acceptance criteria set by utilities

On the principle that utilities and new entrants compete fairly in a field, utilities shall provide information about their wheeling service capacity and so forth. During the discussions at the Expert Advisory Committee meetings, utilities expressed that they would, in general, accept the

requests of wheeling service from new entrants.

② Wheeling service charges

Wheeling service charges shall be set on the following principles;

- Principle 1: the rule of fair recovery of wheeling service costs
  To recover costs properly, it is required beforehand to specify definitely and precisely the equipment and related services whose costs should be recovered in wheeling service charges. Then actual practices should conform to the same rule, which is to be verified by a neutral and independent party. To secure the fairness of cost sharing between regulated and deregulated power customers specified on the first principle, the same mechanism will be introduced as is used to prevent adverse effects on the regulated power customers.
- Principle 2: the rule of fair sharing among parties
  Wheeling service charges must be the same for all parties, including utilities as the owner and operator of networks, other utilities out of the area and new entrants. Therefore, it is necessary to publish wheeling service charges in advance in the contract provisions and to ensure that wheeling services can never be used to replace other charges. In order to ensure equity of wheeling service charges among the parties, the factors which represent the present state of electric power consumption must be taken into account, such as load factors and/or assessment of inter-regional wheeling services over utilities' power service areas.

③ Technical requirements for interconnection

Since new entrants should meet technical requirements for system interconnection to secure the system stability, those requirements must be made public in advance. The details should be specified by reviewing and modifying the current guidelines for system interconnection to make them consistent with the rules of Partial Deregulation.

④ Requirements to meet the needs of public interests

Among the needs of public interests, supply reliability, energy security and environmental preservation will be secured through power dispatching control by utilities who own the T&D networks.

To ensure supply reliability, it is necessary to construct and operate generation and T&D facilities as an integrated system, and utilities must be responsible for such efforts. Development and operation of nuclear and hydro power generation are also necessary to attain energy security and environmental preservation, which could be also secured through dispatching control by utilities.

Thus, users of the wheeling service system should follow load-dispatching orders made by utilities, and new entrants are supposed to comply with the following specifications:

- a rule on submission of dispatching plans (a requirement for system stability)
- a rule on the same-amount-at-the-same-time principle (a requirement for system stability)
- a rule on the preferred dispatching order in cases of accidents and/or emergency (a requirement for system stability)
- a rule for securing supply sources such as hydro and nuclear power (a requirement for energy security and environmental preservation)

Given the characteristics of electricity as a commodity (being one of the necessities, not distinguished by brand, instantaneously consumable and so forth), it is advisable to select representatives of network users responsible for negotiating with utilities who own networks, in order to facilitate quick responses in an emergency and smooth settlement of a dispute, when plural suppliers are to provide power at one demand point.

Dispatching orders in this case, however, will not be given arbitrary. And it is needless to say that the criteria to determine when to issue dispatching orders will be made public in advance.

(3) **Procedures to establish definitive and transparent wheeling service rules**

As mentioned in Section (1), the second option will be adopted to formulate a regulatory system for wheeling service, considering the requirements to establish utilities' managerial independence, to minimize governmental intervention, and to ensure effective competition. But as its prerequisite, the wheeling service rules described in Section (2) must be specified and made public in advance. Accordingly, detailed wheeling service rules should be finalized before starting the new system, with sufficient information provided by utilities, through the objective and transparent discussions at the Electric Utility Industry Council.

4. Ensuring compatibility with public interests

The forth issue is how to meet the needs of public interest. Partial Deregulation of the utility industry will make it possible for non-utility suppliers to enter into the power market. Therefore, it is necessary to develop measures to maintain supply reliability and an optimal energy source mix for power generation..

Toward this objective, the government, power utilities responsible for the construction and operation of networks, non-utility power suppliers, and customers all need to contribute, each through specific roles. For example, since electric power is supplied through networks developed by utilities, it is essential that utilities deliver the dispatching orders properly to the new entrants, based on the contract provisions and that the contract provisions fulfill the needs of public interest. The government, in turn, is expected to define the needs of public interest.

On the other hand, considering electric power is one of the necessities for everyday life and economic activities in general, the government should take the responsibility to respond to emergencies, such as interruption of power supply. Specifically, it would be most efficient if the government issues the

directives of additional power generation or power consumption limitation directly to the new entrants and their customers. Additionally, since the customers are the beneficiaries of these public interest programs, the program costs should be shared equally among all of the customers as a rule.

(1) Responses in routine conditions

In routine conditions, as mentioned above (in 3. (2)④), utilities would specify the provisions relevant to the issues of public interests in their wheeling service contracts and report the provisions to the government, while the new entrants, as a rule, would comply with them by following out the power dispatching directives from utilities.

In cases of disputes among the parties on implementing the wheeling service, the government will take actions to settle them (i.e., to examine whether to issue the dispatching directives).

(2) Responses in emergencies, such as natural disasters or oil embargoes

In order to immediately respond to emergencies, as in natural disasters or oil embargoes, the current Electric Utility Industry Law authorizes the government to issue directives for additional power supply to utilities and wholesale power suppliers and for limiting power consumption to customers. In developing the current Partial Deregulation plan, it is assumed that the similar system shall be introduced and that new entrants and their customers shall be included into the scope of directives for additional power supply or restrictive power consumption. The government, to fulfill its responsibilities, shall collect information and data on power generation of the new entrants and demand of their customers and utilize them as basic data in issuing the directives.

Section 2 Revitalizing the Power Generation Market

The power generation market of Japan could be divided into two major categories: one is the nuclear- and hydro-power generation sector developed mainly by utilities and wholesale power suppliers; and the other is the thermal power generation sector recently opened to competition between IPPs and utilities. In order to revitalize the power generation market, it is advisable to maintain and reinforce the planning efforts in the generation sector and to achieve an optimal power source mix, taking into account energy security and environmental preservation. Also advisable is intensifying the competition in the power generation sector, especially focusing on thermal power generation, for the purpose of delivering the benefits of efficiency improvements to all customers.

1. Maintenance and reinforcement of the generation planning

In Japan, nine utilities and several wholesale power suppliers are cooperating with each other to develop and operate power sources, for the purposes of correcting supply/demand imbalance in each area caused by the differences in power demands and the siting conditions of generating facilities among utilities, and increasing the availability of generating facilities through mutual utilization of systems. This approach is called the wide area system operation. This kind of system operation is indispensable to smoothly carry out nuclear power development which needs long-term and large-

scale investments and meet the requirements of energy security and environmental preservation. Therefore, it seems necessary to maintain and reinforce the power generation planning efforts over a wider area also in the future.

Specifically, we must understand that power supply plans developed by utilities would ensure the wide area system operation continuously in the future. And it is appropriate to put the higher priority on the development of nuclear and hydro-power sources in these plans, considering their significance as a means to fulfill the needs of public interests.

2. Enhancement of Competition in Wide-Area Power Generation Markets

Wide-area power generation markets have been activated through bidding system established by the amendment of Electricity Utility Industry Law in 1995. Further measures have yet to be introduced to make the markets more competitive.

(1) Bidding system for thermal power development

A bidding system for thermal power development can fulfill the requirement that all customers enjoy the benefits accrued from improved efficiency, and together with retail liberalization, serves to develop upgraded and efficient wide-area power generation markets. Thus, a bidding system will be introduced to the full extent, following the framework of the interim report (the Guideline) in December, 1997, prepared by the Basic Policy Sub-committee under the Basic Policy Committee of the Electricity Utility Industry Council.

The Guideline needs more review, however, compatible with the implementation of the retail power service deregulation, which was originally not included in its scope. It will be reviewed by appropriate institutions such as the Basic Policy Sub-committee Working Group to clarify its revisions in detail, including their concurrent implementation.

The 1995 Amendment also established a wholesale wheeling service system. This system continues to be a policy measure to improve the wide-area power generation markets and will be extended to serve a wide-area power operation of nuclear power, hydro-power and other types of sources.

(2) Shift to a reporting system from an approval system

It is advisable to streamline administrative procedures so as to further facilitate transactions in wide-area power generation markets, in terms of assurance of utilities' managerial initiatives and minimization of administrative intervention. Thus, the existing approval system for wholesale electricity rates will be abolished and replaced by the combination of a reporting to the administration and an administrative order to change the rates.

The administrative order is subject to the following criteria:

- that the negative effects of utilities' monopsony be removed for the sake of wholesale suppliers; and
- that an unreasonable rate escalation charged to customers in regulated sector be avoided for the

sake of wholesale customers.

(3) Assurance of transparency in the non-regulated sector (short-term or small-scale power transactions)

Short-term or small-scale power transactions are conducted through private contracts at present, since both the wholesale rate approval system and the bidding system are not applicable to them. These private contracts include flexible transactions among power utilities, and transactions between power utilities and self-power producers based on the utilities' extra-power purchasing menu.

These transactions are expected to become transparent by the initiatives of power utilities so as to avoid any negative effects of the utilities' monopsony and boost their efficiency.

Section 3 Assurance of Proper Power Transactions

The Electricity Utility Industry Law allowed the power utility to set up area-wise monopolistic power supply system while coping with the negative effects of monopoly through regulations (tariff regulations and supply obligations) established by the law itself. It appears that there were no such problematic cases that required the enforcement of measures established by the Act concerning Prohibition of Private Monopoly and Maintenance of Fair Trade.

The Law's Amendment of 1995 established the wholesale bidding system and the wholesale wheeling service system to introduce competitive relationships among power suppliers. This change in the Law has required necessary adjustments so as to ensure fair competition among wholesale suppliers. To follow this development, power utilities have been coming up with adjustments, for example, the voluntary preparation of manuals to strictly abide by the Act.

New arrangements for Partial Deregulation pose two additional requirements: fair competition among retail power suppliers and equal relationship between large-scale customers and their suppliers.

Therefore, it is necessary to set up the rules for proper power transactions which are compatible with the Act not only to avoid possible conflicts among competing power suppliers and encourage effective competition, and to enhance the effectiveness of further institutional reforms in the future.

A variety of issues have already been figured out in regard to what are proper power transactions by this Committee and the Experts Committee. In the next step, rules applicable to the overall power industry will be developed with the specific forms of transactions taken into account.

This process will involve an arrangement of issues with regard to stipulated relationship among power utilities in the still-regulated area, as well as private contracts between power utilities and new entries and between power utilities and their customers, which will be made available following the abolishment of regulations in the Electricity Utility Industry Law.

Proper power transactions must ensure a balance between competition and the requirements of public

interests(grid stability, energy security, environment preservation and others).

These arrangements, aimed to facilitate the development of sound power transaction markets, should be conducted prior to the implementation of Partial Deregulation as part of the proposed institutional reform. They will be discussed at objective and transparent venues of the Electricity Utility Industry Council.

Section 4 Review of Tariff System

The proposed arrangements for Partial Deregulation in power transaction market have been settled so that all customers enjoy the benefits accrued from improved efficiency, not just customers directly affected by the deregulation. This claim is beyond question as the Councils mandate is to improve the overall efficiency of power utility industry.

The Partial Deregulation and the activation of power generation market make the institutional arrangements to provide incentives for power utilities to make various efforts to improve their managerial efficiency with competitive stimuli. This institutional reform is likely effective in disseminating the benefits accrued from improved efficiency to all the customers, taking into account actual impacts brought by the bidding system for thermal power development which is established under the Amendment of Electricity Utility Industry Law in 1995.

To accomplish an equitable distribution of benefits, especially to customers in the regulated sector, it is imperative to review the tariff system, which serves as a link between power utilities and their customers. The tariff system should be adjusted so that power utilities can readily and voluntarily introduce their competence and efficiency improvements into the pricing of the regulated sector. This, together with the Partial Deregulation and the activated power generation market, will ensure that the benefits resulting from enhanced competition reach all customers.

The Tariff System Committee has already reached a conclusion about necessary changes in the tariff system, as outlined below.

1. Guiding Principles

(1) Emphases on readiness and diversity

Electricity rates have been set with an emphasis on their stability and uniformity over the long term. It is necessary, however, to change the tariff structure so that efficient management of power utilities can be more readily reflected in pricing (emphasis on readiness), and that the rates can be set more precisely in regard to various consumption of electricity (emphasis on diversity).

(2) Respect for utilities' managerial initiatives and clarification of their managerial responsibility

The proposed institutional reform is in line with the shift of administrative approach to post-monitoring and rule compliance away from prior-intervention and discretion. Pricing of electricity rates will also be drastically changed in favor of further emphasis on utilities'

managerial initiatives. This change will render their managerial responsibility more clarified and hence more strictly held accountable.

2. Proposed Institutional Arrangements

These guiding principles led to a proposal of the new institutional arrangements, including the following:

(1) Rationalization of tariff regulation procedure: introduction of reporting system into the power supply clause

The existing power supply clause stipulates that any changes in pricing always requires approval from the administration. This procedure, however, should be streamlined so that rates can be changed through reporting system if customers interests are to be improved, for instance, in the case of rate cut.

(2) Diversification of tariff menu: extension of the requirements of optional clause

Customers in deregulated sector will determine electricity rates through negotiations with the power suppliers they select in accordance with their specific load curves. On the other hand, those in a regulated sector cannot choose their suppliers. Therefore, the requirement of serving for load-leveling in the existing optional clause must be extended to cover whatever would contribute to utilities' managerial efficiency improvements, so as to diversify the electricity rate menu for customers in regulated sector and hence broaden their freedom of choice for an appropriate rate menu as much as possible.

Chapter 3 Schedule of Implementation of Institutional Reform and Evaluation in the Future

1. Schedule of Institutional Reform

The proposed institutional reform will hopefully be implemented as soon as possible, taking into accounts the mandate of the Basic Policy Committee given by the Minister of MITI.

It is recommended to implement the reform in the year 2000 after the remaining issues are settled.

2. Evaluation in the Future

Performance of the institutional reform must be comprehensively evaluated because electricity is so important to people's everyday lives.

Approximately three years after the initiation of implementation, an evaluation will be conducted about the extent of deregulation and the contents of institutional arrangements involved with the deregulation. Its results will form a foundation to determine if the scope of Partial Deregulation should be expanded, if total deregulation should be introduced, or if power pool markets should be established.

The major aspects of the evaluation will be:

(1) Actual performance of Partial Deregulation (new entries, managerial efficiency of power utilities, improved services including power rates in regulated sectors, improved efficiency in power generation markets including the full-scale bidding for thermal power development, and so on) ;

(2) Progress of similar deregulation efforts in other countries;

(3) Progress of technology development for grid stability and other issues; and

(4) Negative effects on public interests.

Concluding Remarks

The requirements for the power industry have remained consistent for many years. It is a common challenge through any time period to secure a cheaper and more stable supply of electricity as it is one of the goods indispensable to industrial activities as well as to everyday lives. The power industry, which constitutes the key part of energy industries, should seek to address the issues of public interests, including energy security, in response to the situation and the needs of the times in Japan. These are the reasons why Japan requires such a unique institution for the power industry.

The proposed institutional reform, which may be the most drastic reform for the power industry in Japan since the end of World War II, aims to steadily fulfill these needs on the power industry, with a maximized application of the principle of competition as means to improve its efficiency. In other words, with a stimulus of competition and their performance being monitored by markets instead of administrative regulators, power suppliers will strive for improved efficiency by making full use of their managerial initiatives and creativity.

On the customer side, this objective leads to a second objective: extending customers' choice as much as possible. In deregulated sector, customers will have a greater choice of power suppliers, while those in a regulated sector will a greater choice of electricity tariff menus. On the other hand, the customers themselves are obligated to conduct with more responsibilities.

The reform is also intended to address the issues of public interests with distinguished roles of power industry, administration and customers, respectively. The power industry will be in charge of routine affairs while the administration will intervene in emergency situations. Customers will undertake a principle of equitable cost sharing.

Under the proposed reform, power industry is expected to enhance its general competitive stature by taking greater initiatives with the more diversified managerial options that will become available. Similarly, customers will make more responsible choices on a self-responsibility principle among more diversified options that will be offered. Administration is expected to focus on the improvements in institutional settings which will enable the power industry to survive international competition, and the transparent operation of the institution.

Impacts of the power industry on the international matters should be monitored though its product has not been among trade goods to and from Japan, taking into account the fact that the industry provides a crucial infrastructure for people's everyday lives and industrial activities. The proposed reform is expected to contribute to the improvement of Japanese economy, as well as to stronger and more flexible power industry, more responsible customers and more functional administration.

Additional remarks should be put in place here. Japan's power industry has shown a high performance for the past 50 years, under two precepts: a private-sector-based area-wide monopoly system, and public utilities regulations. In contrast, it would take the proposed reform only several years to take effect. Changes of the times are faster than expected. With an eye toward the future, the deliberations of this reform held nothing back from review, and made bold decisions based on new ideas. It is recognized that, in implementing this reform, the flexible and prompt responses will be needed to manage such public interest issues as energy security, including promotion of nuclear power, and to respond to potential unexpected incidents. In addition, an objective evaluation should be conducted regarding the performance of this reform approximately three years from its inception. It is hopefully expected that the proposed reform will constitute a key institution in Japan.