

**Business Plan FY 2018 of
Organization for Cross-regional Coordination of Transmission Operators,
JAPAN**

In Fiscal Year 2018, this Organization, as an Organization for Cross-regional Coordination of Transmission Operators, JAPAN specified in Article 28-4 of the Electricity Business Act (hereinafter, “the Act”), will fully develop the infrastructure corresponding to the relevant systems to facilitate reformation of electric system, and besides that, the Organization will also carry out the following business with an aim to adequately address social requests regarding cross-regional coordination of electricity supply for operation of electricity business including the securing of stable supply based on greater introduction of renewable energy in future.

1. Establishment and amendment of Network Codes (Item 3, Article 28-40 of the Act)

The Organization will conduct necessary changes in rules of the Network Codes based on our understanding of actual business situations and also promote understanding of the Network Codes, so that the users of electric network systems are able to operate their business smoothly based on the rules.

Furthermore, we will proceed with the review including changes in the Network Codes accompanying with an introduction of new systems such as capacity market and balancing market schemes based on matters reviewed at the national council.

2. Aggregation, review and submission of electricity supply plans to the Minister of Economy, Trade and Industry (Item 4, Article 28-40 of the Act)

(1) Aggregation of Electricity Supply Plan

We will accurately project demand-supply balance and draw a plan on establishment of transmission and distribution facilities after receiving supply plans from electric power companies based on laws and ordinances. As for the compiled supply plans, we will submit them with comments, if any, to the Minister of Economy, Trade and Industry by the end of March 2019.

(2) Business Regarding Demand Forecast

For smooth and proper demand forecast by the members, we will prepare a nationwide economic forecast that will become the premise for a demand forecast. We will also develop a nationwide demand forecast based on the demand forecast of each regional service area submitted from the members who are general transmission and distribution companies. As for the nationwide economic forecast, we will notify the members and

publish by the end of November 2018. As for the nationwide demand forecast, we will notify the members and publish together with demand forecast of each regional service area by the end of January 2019.

In carrying out the above, we will strengthen the verification and review, from time to time, the methods of preparation of national economic outlook or demand forecast for more rational demand forecast by taking the changes in system or business environment in future in account.

(3) Electricity Supply-Demand Verification for Summer and Winter in FY 2018

We conduct electricity supply-demand verification for peak period of summer and winter for FY 2018 in advance based on the supply capacity of electric power companies and demand forecast in short term with keeping its integration to the aggregation of electricity supply plans.

3. Business regarding solicitation of persons who keep and operate electrical facilities for power generation through safeguard and other measures for generator procurement and regarding promotion of installment of other electrical facilities for power generation (Item 5, Article 28-40 of the Act)

(1) Review of Necessity of Safeguard Measures for Generator Procurement

We will conduct comprehensive reviews by considering the evaluation of demand-supply balance based on the result of aggregated supply plans, trend of potential supply capacity, degree of vitalization of electricity market, and middle-and-long term demand trend at the committee of intellectuals.

When we find that the safeguard measures for generator procurement is deemed to be necessary as a result of the reviews, we will promote actions to secure supply capacity in accordance with the Operational Rules.

(2) Review of Introducing Capacity Market Scheme

We will continue reviewing of the detailed system designs and the development of operating structures based on the review by the Government for the smooth start of the capacity market scheme in Fiscal Year 2020.

In particular, we plan to actualize effective mechanisms by giving priority to matters necessary for the designing of market operation systems and utilizing knowledge of experts.

(3) Review of Introducing Balancing Market Scheme

In preparation for the introduction of the balancing market scheme in Fiscal Year 2020, we will strengthen the review structure and proceed with the technical review regarding market operation, cross-regional interconnection or other matters for the smooth start

of the balancing market scheme.

4. Provision of relevant information and liaison and coordination with respect to the services for electricity transmission and distribution, etc. (Item 8, Article 28-40 of the Act)

(1) Long-term Development Policy of Cross-regional Interconnection Network

Regarding the Long-Term Policies on Cross-Regional Electric Network prepared in Fiscal Year 2016, the Cross-Regional Electric Network Development Committee will review the policies for the realization of the following action items as same as last year.

1) Actions regarding Connect & Manage approach

Detailed designs of feasible operation management systems or conditions for new interconnection and other matters are reviewed by taking the situations in foreign countries into account toward the early realization of N-1 inter-trip and non-firm access.

2) Actions regarding criteria for evaluating reinforcement by cost benefit analysis (CBA)

With an introduction of implicit auction scheme and connect & manage approach in mind, decision criteria are made clear by defining a conversion method from beneficiary to currency value or beneficiaries so as to apply the CBA method upon making decisions regarding criteria for evaluating reinforcement of existing power transmission and distribution facilities

3) Actions regarding the effective access business

Issues in the current access business (system impact study or a solicitation process for power supply connection projects, etc.) are identified, and necessary reviews are conducted regarding procedures or review methods of access business, public information and other matters to solve the issues by taking situations in foreign countries or needs from business operators into account.

(2) Cross-regional Network Development Plan

For a cross-regional network development plan, we will draw a plan by reviewing the necessity of specific and individual enhancement of the network, business implementing entities, cost allocation, etc., when the review of matters related to development of cross-regional interconnection network is considered to be necessary from the viewpoint of the cross-regional coordination such as the situation of utilization of interconnection lines or requests from electricity supply companies, or when such review is requested from the Government.

Regarding the future use of interconnection lines or other lines, we will confirm the

congestion on each cross-regional interconnection lines by using methods such as simulation of generator dispatch according to marginal cost through cross-regional interconnection, etc., with an introduction of implicit auction scheme in mind.

Further, for smooth promotion of cross-regional network development plans both Tokyo-Chubu and Tohoku-Tokyo, we will periodically confirm their progress and review their cost according to the progress. In addition, for drawing-up process of cross-regional network development plan between Chugoku and Kyushu, we will proceed its review based on the long-term development policy of cross-regional network.

(3) Network Access Business

We will be open to applications of preliminary consultation and system impact study from applicants for network interconnection and properly confirm, verify, and report the results of study.

In addition to that, for solicitation process of generator interconnection which accomplish both reduction of applicants cost and effective formation of transmission and distribution facilities, we will steadily proceed cooperating with the general transmission and distribution company which operates transmission network of the subject area.

Further, we will steadily proceed with the solicitation process of generator interconnection for replacement projects which promotes the fair usage of existing power transmission and distribution facilities upon replacement of power generators.

When we conduct business, we will respond thoroughly to the applicants for network interconnection, provide adequate information, and improve network access business with the general transmission and distribution companies.

(4) Review of the Balancing Capacity and Necessary Reserve Capacity

We will continuously review the balancing capacity necessary to adjust the balance between supply and demand, and the control of the frequency at the Study Committee on Regulating and Marginal Supply Capability with Long-Term Supply-Demand Balance Evaluation based on the various change in the circumstances.

In particular, we will review the balancing capacities and necessary reserve capacities through analysis of data on operational status of power supplies, calculation methods of necessary balancing and reserve capacities and organization of calculation tools, by considering that a review related to the ongoing consideration of capacity and balancing market schemes will be needed for the start in Fiscal Year 2020 and that an increase of renewable energy might have influence on the necessary balancing capacities and the standard of necessary reserve capacities.

(5) Management of Interconnection Lines between Regions

Toward the start of implicit auction scheme scheduled for the second half of the fiscal

year, we will smoothly replace with the new system by securely developing the cross-regional organization systems and explaining the members properly.

After replacement, new management business will be commenced for the interconnection lines between regions including transitional measure plans or an approval of power supplies.

In addition to that, operation capacities and margins of interconnection lines will be calculated and published based on discussions at the review committees of operation capacities and of margins, results of opinion seeking and other matters.

(6) Coordination of Maintenance Work Plans

We will coordinate plans on maintenance work of transmission, distribution and generation facilities that members submit to carry out work, such as inspection and maintenance (hereinafter “maintenance work plans”)and compile the plans for maintenance work on cross-regional interconnection network.

For coordination and compiling of the plans, we will share information with relevant companies, and will also cooperate properly with general transmission and distribution companies that maintain and operate the network and users of interconnection lines while considering the maintenance of electric facilities, security of workers, and other matters provided in the Network Codes.

In future, we will review a mechanism of coordination which enables the smooth coordination of maintenance work among multiple existing business entities regarding which coordination is anticipated to become difficult, and will reflect the review on the actual operation properly.

(7) Supplier Switching Support for Customers

We will operate and maintain the supplier switching support system to facilitate procedures for changes in the network service contracts between retail companies and general transmission and distribution companies.

We will continuously receive requests for improvement from retail companies at any time and hold an Officials Meeting on Operation of the Switching Support System as necessary to review the points to be improved in respect of operation of the system and will publish the result of summary of the discussion at the meeting.

(8) Support for Utilizing Information Communication Technology

We will conduct necessary reviews on the standard specification for mutual data exchange among network users or with the Organization utilizing the information technology by considering the business situations of companies.

We will also review the above mentioned standard specification as needed, based on contents of The Basic Policy of Critical Information Infrastructure Protection, and will

encourage actions by members by conducting activities for dissemination and enlightenment and by providing members with information about the vulnerability of the information system in respect of information leaks and damage from cyber-attacks outside the Organization in a timely manner so that members can implement proper cyber-security measures.

(9) Network Information Disclosure

In accordance with the Guidelines on Network Information Disclosure defined by the Government, we will publish information on interconnection lines between regions and nationwide supply and demand of electricity of its internet website to secure transparency of grid operation.

Further, we review improvement of the publishing function based on users' needs and change contents of the publishing according to the introduction of implicit auction scheme to network utilization.

(10) Improvement of Business Quality

We will make efforts to improve the quality of business related to drawing-up of a cross-regional network development plan, verification of inspection results of network access, management of interconnection lines among regions, and others through analysis of power flows with network analysis tool.

In addition to that, we will work on improvement and development of simulation tools for power flows on cross-regional electric systems, because the criteria of reinforcement of facilities based on CBA will be necessary along with the introduction of the connect & manage approach and other factors.

(11) Smooth Implementation of System Development

Development of the capacity market system is commenced after drawing up a project plan.

Processes of improvement and development will be steadily forwarded including addressing of negawatt trading, introduction of implicit auction scheme and new connection lines between Hokkaido and Honshu among the cross-regional organization systems so as to complete the development on time without delay.

Furthermore, organizational structure, business process and quality management related to the development and maintenance of the system will be operated properly.

5. Monitoring of demand and supply situation of electricity (Item 1, Article 28-40 of the Act)

We will monitor the situations of supply and demand of electricity related to electricity business by members based on the various plans submitted by members through the

cross-regional organization system and data regarding demand in each regional service area and power flow and supply capacity of interconnection lines (including situations of operation and suspension of main power plants).

For correctness of the various plans to be submitted, we will implement checking for the consistency among multiple plans and the balance between plan and actual energy (imbalance energy), and properly call for attention to the electric power companies. Particularly, we will recommend improvement to the electric power company who repeatedly submits inconsistent plans or significant clearings of imbalance energy.

6. Instructions to members when supply and demand situations become worse (Item 2, Article 28-40 of the Act)

To secure a stable supply even in cases of disasters and problems with the power supply, we give instructions to the members necessary for improvement of the situation of demand and supply of electricity, if demand and supply situations of the members became or might become worse.

In addition to that, when there are or might be a shortage in balancing capacities to redundancy in supply areas of the general transmission and distribution companies due to an increase of output of renewable energy or other reasons, a long-cycle cross-regional frequency control will also be conducted as a measure following the rules of priority dispatch.

Furthermore, when the general transmission and distribution companies suppress the output of renewable energy, follow-up examination will be conducted to determine whether such suppression was proper for each case. We also examine whether the output suppression in the previous year was conducted in a fair manner and publish the result of the examination.

7. Handling of complaints or inquiries from the electricity supply companies and conflict resolution (Item 7, Article 28-40 of the Act)

(1) Handling of Complaints or Inquiries

When we receive complaints or inquiries regarding our business operation, such as transmission and distribution of electricity from electricity supply companies, we take initial steps of giving responses according to the contents of complaints or inquiries without delay.

If such complaints or inquiries are not dissolved with the initial steps and further measures are needed, we will take the necessary measures of mediation or reconciliation (mediation and arbitration) and giving instructions or warnings to electricity supply

companies and will strive to settle the problems.

We also compile and publish to disseminate the results on a regular basis on its website so as to promote business improvement of electricity supply companies according to rules, such as Network Codes.

(2) Conflict Resolution

To resolve conflicts between electricity supply companies regarding the electricity transmission and distribution business, approved as a dispute resolution institution based on the Act on Promotion of Use of Alternative Dispute Resolution (Act no. 151, 2004), we mediate reconciliation (mediation and arbitration) by establishing a conflict resolution panel comprised of academic experts and lawyers other than personnel of the Organization.

8. Instructions and recommendation for electricity supply companies (Item 6, Article 28-40 of the Act)

We give instructions or make recommendations to electricity supply companies when it is necessary to secure smooth conduct of business such as transmission and distribution or stable supply of electricity according to the Operational Rules.

9. Ancillary business to aforementioned Item 1 to 8 (Item 9, Article 28-40 of the Act)

(1) Preparation and Publication of Reports

According to the Operational Rules, we compile and publish reports on the forecast and agenda of the mid- and long-term demand and supply of electricity and network development (including forecasted mitigation of constraints on network interconnection with power generation facilities) based on performance up to the preceding year in respect of the demand and supply of electricity (frequency fluctuation, voltage fluctuation, supply disturbances, and risk factors of each supply area), actual network utilization, and network access.

(2) Investigation and Research

The Organization conducts investigations such as capacity mechanism, investigations of matters contributing to the review of the Study Committee on Regulating and Marginal Supply Capability with Long-Term Supply-Demand Balance Evaluation and the Cross-Regional Network Development Committee, and investigations and research on technical trends on national and international electricity business, system policy, risk analysis of demand, and supply of electricity.

(3) Response to Disasters, etc.

In an emergency, such as when significant damages are caused to electric facilities due

to major natural disasters and other equivalent reasons, we will establish an emergency contact system and structures against disasters, issue the necessary information to the Government or other relevant institutions based on an operational plan for disaster prevention as a designated public corporation based on the Basic Act on Disaster Control Measures so that the members can tackle cooperated restoration and other work, and provide emergency response training more than once a year with the cooperation of members and relevant institutions.

We will also continuously review the necessity of revision of the Business Continuity Plan (BCP) to enhance effectiveness of the plan according to the cabinet's Business Continuity Guidelines in preparation for a case where the headquarters of the Organization is damaged by disasters.

Furthermore, we will take the necessary measures based on each developed business plan as we are a designated public corporation based on Act on Special Measures Concerning Novel Influenza Virus, etc., and Act concerning the Measures for Protection of the People in Armed Attack Situations, etc.

10. Business necessary to accomplish aims of the Organization (Item 10, Article 28-40 of the Act)

(1) Public Information

To enhance the transparency of the business of the Organization and improve the convenience of business of the members and other electricity supply companies, we will make an effort to reinforce and enhance publication with regard to cross-regional coordination of our business and electricity business implementation. In particular, we will immediately publish information on business conducted by the Organization, such as instructions to members upon aggravation of demand and supply situations and also publish agenda and summary of proceedings of the board of directors, councilors, and committees in principle. Through utilization of the website we introduce our business clearly.

(2) Security Measures for Information System

We will take all possible precautions for cyber-security for each type of information system that we maintain and operate. In particular, we will prepare system protections such as countermeasures against computer viruses, unauthorized access, and vulnerability without omission and will conduct an independent information security audit and educate personnel regarding information security.

(3) Securing and Maintenance of the Base for Back-up Operation

We will check the operation of the system of the backup headquarters established in

Osaka for emergency cases, such as when the headquarters in Tokyo become out of operation due to disasters, and will train the personnel so that important business of monitoring of network can be conducted at the base for backup operations.

(4) Securing and Education of Personnel

We will proceed with the hiring process of midcareer recruits with professional knowledge and new graduates in order to enhance the proper percentage of the personnel in a middle-and-long term perspective while maintaining the necessary number of personnel for our proper business at all times. In addition, we will enhance personnel system of the Organization.

As for the education of personnel, We will provide personnel with the necessary knowledge for the business and improve their skill through the training for new employees, internal and external training, and support for self-development while being based on OJT.