

**Business Plan FY 2020 of
Organization for Cross-regional Coordination of Transmission Operators,
Japan**

In Fiscal Year 2020, 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 carry out the following business with an aim to secure stable electricity supply nationwide and promote effective utilization of transmission and distribution facilities through cross-regional operation of electricity business.

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 according to 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 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 Plans

We will receive electricity supply plans from electric power companies based on laws and ordinances. We will properly aggregate the projection of demand-supply balance and the conditions of transmission and distribution facilities development. As for the aggregated supply plans, we will submit them with comments, if any, to the Minister of Economy, Trade and Industry by the end of March 2021. In addition, we will proceed to improve the method of aggregating supply plans matching with introduction of capacity market.

(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 2020. 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 2021.

In carrying out the above, we will further improve the demand forecast business such as confirmation of validity for demand forecast developed by general transmission and distribution companies based on the premises of demand forecast altered in FY 2019, and better accountability of the demand forecast to members and the party concerned.

(3) Electricity Supply-Demand Verification for Summer and Winter in FY 2020

We conduct electricity supply-demand verification for peak period of summer and winter for FY 2020 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 and electricity supply-demand verification, trend of potential supply capacity, and mid to 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) Capacity Market; Implementation of Main Auction

We will do our best to prepare arrangement of operation structure and system toward participating registration and main auction for FY 2020. After implementing main auction, we will steadily manage execution of the capacity contracts as well as proceed to review necessary detailed system design.

(3) Review of Introducing Balancing Market Scheme

In preparation for the gradual introduction of the balancing market scheme in Fiscal Year 2021, we will accomplish preparation replacement reserve-for FIT in FY 2020 which is introduced prior to other balancing reserves, and proceed with the technical review regarding market operations of other balancing reserves and cross-regional interconnection such as cross-regional procurement and operation of balancing reserves.

4. Provision of relevant information and liaise and coordination with respect to the services for electricity transmission and distribution, etc. (Item8, Article 28-40 of the Act)

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

Based on the Long-Term Policies on Cross-Regional Electric Network developed in March 2017, the Cross-Regional Electric Network Development Committee will continue reviewing the policies for the realization of the following action items.

1) Actions regarding Connect & Manage approach

Specific designs of feasible operation management systems are reviewed toward the full application of N-1 inter-trip and the early realization of non-firm access. In addition, we will review ideal congestion management of provisionally non-firm access applied network based on actual examples of foreign countries according to introduction of the non-firm access.

2) Actions regarding cross-regional network development plan by cost benefit analysis (CBA)

To respond environmental change of network planning business according to an introduction of implicit auction scheme and connect & manage approach, we will proceed to implement CBA for the overall society accompanied by reinforcement of the facilities on the cross-regional interconnection lines as new system planning business, and aim to introduce periodic evaluation that is the criteria of reinforcement of interconnection lines or eligible system for non-firm access. Reinforcement of the facilities on the cross-regional interconnection lines is determined by CBA, as well as we will utilize cross-regional demand-supply simulation tools for considering rationalization of estimated power flow and constrained transfer capability on cross-regional interconnection lines as premises of the simulation.

3) Actions regarding the effective access business

Toward the introduction of new network access business process instead of the current access business such as system impact study or a solicitation process for generator interconnection projects, etc., we will specify procedures or review methods of network access business, its public information and other matters.

To review network facilitation in mid-to-long term, we will continuously review the Long-Term Policies on Cross-Regional Electric Network to develop new policies based on the evaluation in aspect of electricity resilience, while consisting with Basic Energy Plan and energy mix of the Government.

(2) Cross-regional Network Development Plan

For decision of starting planning process of a cross-regional network development plan, we will review necessity of specific and individual enhancement of the network, business

implementing entities, cost allocation, etc. based on the current starting requirements as well as the activities regarding to cross-regional network planning business utilizing CBA for Long-Term Policies on Cross-Regional Electric Network. In addition, we will prepare relating rules as needed based on the results of review such as cost allocation on reinforcement of facilities on the cross-regional network.

Regarding Hokkaido-Honshu cross-regional interconnection facilities as individual case, which started planning process by the governmental request, we will develop cross-regional network development plan upon deciding business implementation plan and cost allocation among participants based on the results of governmental review for cost allocation of the reinforcement.

While Tohoku-Tokyo cross-regional interconnection facilities, we will reexamine the cross-regional network development plan, upon rearranging share of cost allocation on available transfer capability due to declining by specific generators.

Further, for smooth promotion of cross-regional network development plans, we will periodically confirm their progress and review their cost accordingly.

(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, we will steadily proceed cooperating with the general transmission and distribution company which operates transmission network of the subject area. Likewise, in the case that the solicitation process for generator interconnection by replacement project would take place, we will check the contents of the project and decide the applicability of a replacement so as to steadily promote the project. In addition, we will promote smooth operation of business coping with the preparation of detailed rules according to electricity system revision and operational challenges toward introduction of new network access business.

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 generators, calculation methods of necessary balancing and reserve capacities and organization of calculation tools, by considering that an increase of renewable energy might have influence on the necessary balancing capacities and their operation, and that capacity and balancing market schemes will be introduced.

(5) Management of Interconnection Lines between Regions

We will manage plans subject to transitional scheme under the implicit auction rule of cross-regional interconnection line and specified allocation which is eligible for clearing price differential between two areas according to specified allocation, accept new or revised application of approved power generators or contracts, and implement periodic reviews.

We will accomplish and improve corresponding new operation system so as to smoothly proceed to trade in price differentials receiving rights market.

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

Besides, we will implement commencement of cross-regional operation of balancing capacity by active approach of general transmission and distribution companies before the cross-regional supply-demand coordination with coordination between general transmission and distribution company.

(6) Coordination of Maintenance Work Plans

We will aggregate plans on maintenance work of cross-regional interconnection network that members submit, and coordinate the plans not to affect operating capability of cross-regional interconnection lines.

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.

For coordination of maintenance work among multiple existing business entities, we will confirm proper operation of the already developed coordination mechanism that proportionally defines curtailed generation to nameplate capacity and provisionally operates trade for allocated curtailed generation, and improve it accordingly. Further, we will continuously review authorized coordination mechanism of maintenance work coordination scheme including marginal cost order operation.

(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 will proceed to review reinforcement of the publishing function based on electric power companies' needs.

(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.

(11) Smooth Implementation of System Development

For the capacity market system, we will steadily proceed primary development system such as contract management regarding to capacity auction and the capacity verification test, as well as start to consider secondary development system such as requirement, assessment, and penalty of the market.

For the cross-regional organization system, we will be steadily forwarded the development of balancing capacity market, cross-regional procurement of Generator I utilizing balancing capacity in the neighboring areas, and operation of cross-regional reserve margin. In addition, we will reform the fundamental improvement of the cross-regional organization system including facility enhancement and reinforcement.

For the development and management of the system, we will properly manage organizational structure, business process and quality.

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

(1) Monitoring the Situations of Supply and Demand of Electricity

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 in light of Network Codes of the Organization, 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 and instruct improvement as needed to the electric power companies who repeatedly submits inconsistent plans or significant clearings of imbalanced energy. To the company who have been already given instruction, we will selectively check the imbalanced energy of the companies so as to confirm the improvement of their business.

(2) Operational Measures against Major Blackout Risk

We will implement reviews regarding risk of major blackout and reducing its duration period such as system stabilization measures for cross-regional interconnection lines and implementation method of restoring electricity supply system.

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 Network Codes.

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 of 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 and balancing markets, 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, we will issue the necessary information to the Government or other relevant institutions under an emergency contact system and structures against disasters structured by an operational plan for disaster prevention amended in FY 2019. While in a normal condition, we will continuously provide emergency response training for strengthening disaster response of the Organization.

We will continuously review the Business Continuity Plan (BCP) for its effectiveness to surely implement preferential continuing business in preparation for a case where the headquarters of the Organization and the personnel is damaged by disasters.

Furthermore, we will cooperate relevant government offices, and positively participate information exchange meetings or training so that the ability for preparing contingencies is enhanced 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 actively provide information regard to cross-regional coordination of our business and electricity business implementation, and reinforce and enhance publication.

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 materials including agenda and summary of proceedings of the board of directors, councilors, and various committees through the website of the Organization in principle.

Besides, we introduce our business correctly and clearly through response to the press.

(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 and further drill for personnel regarding information security against the possibility of epidemic cyber-attacks owing to hosting Olympic and Paralympic Games in FY 2020.

(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. In addition, we will review further establishment of alternative backup headquarters, and implement necessary arrangement based on effectiveness of the operation.

(4) Securing and Education of Personnel

As for securing personnel, we will proceed with the hiring process of midcareer recruits with professional knowledge and hopeful 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, as well as external loan to the relating governmental agency or electric power companies for younger staffs.

(5) Additional Business

In a timely and appropriate manner, we will respond to business that requires the operation of the Organization according to the implementation of the various electricity system revision under review by the Government.