

Chapter 6

International Experiences: Japan

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Chapter 6

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This chapter is mainly based on the information received from the Tokyo Electric Power Company or TEPCO as part of the information sharing between the ATSO and AGTP projects.

1. Background

The Organization for Cross-Regional Coordination of Transmission Operators (OCCTO) is based in Japan. With the great East Japan earthquake and the nuclear accident that was triggered on 11 March 2011, it became clear that various limitations exist in the conventional electric power system mechanism – when exclusive operators supply their respective regions. Therefore, OCCTO was established in April 2015, based on the Electricity Business Act, to serve as an authorized organization that all electric power companies are obliged to join. The objective of OCCTO is to promote operations – covering an extensive task of monitoring the supply and the demand of all utilities. OCCTO is foreseen to improve parts of the system through the following:

- ▶ Utilization of diversified power sources, including distributed power sources and renewable energy;
- ▶ Giving more importance to minimizing the price of electricity;
- ▶ Utilization of power plants at the national level through the use of wide-ranging system operation;
- ▶ Providing response to the diverse needs of users by choosing retail companies, price menus, the type of fuels, and others;
- ▶ Recognizing the necessity of suppressing demand by implementing measures such as pricing differently for peak times and for other times; and
- ▶ Increasing social demands to further promote inexpensive and stable power supply.

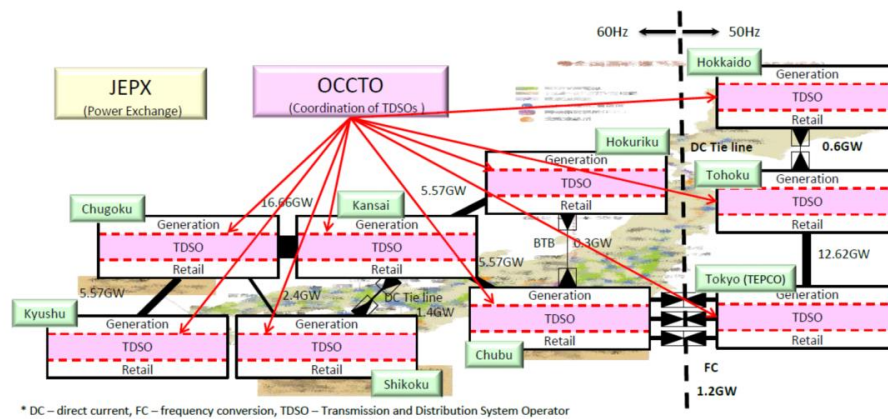
The electricity power system reform in Japan, partly through the establishment of OCCTO, targets three distinctive areas. First, the reform aims to **secure a stable supply** by adjusting the supply and demand capacity and by ensuring electricity supply for the wide-area possible through the incorporation of ingenuity on the demand side while trying to neutralize the transmission and distribution (as was noted after the earthquake incident, it is unavoidable to utilize various power sources). Second, the reform focuses on the **reduction of electricity rates** by (i) promoting competition, (ii) applying nationwide merit order activation of production resources, and (iii) optimizing the power generation investments through demand suppression and other measures by users' ingenuity. The third and final target of the reform is the **expansion of customer options and business opportunities** to respond to

users' needs for power selection with various options. This will be done by, inter alia, encouraging more innovation, allowing the participation and encouraging more innovation from other industries and regions, and utilizing new technologies for power generation and demand control measures.

OCCTO's influence in the power sector is further illustrated in Figure 11.

Figure 11. OCCTO's Role in Japan's Power System

- Established the Organization for Cross-regional Coordination of Transmission Operators (OCCTO) in Apr. 2015
- OCCTO's main functions include:
 1. Review the TSO's supply-demand and grid plans for changes in the plans (e.g. tie line construction) if needed.
 2. Order TSOs to increase power generation and interchange if supply gets tight.



Source: Tokyo Electric Power Company (TEPCO).

2. Governance and Organizational Structure

OCCTO's main governance is built around various secretariats, placed under the general meeting and the Board of Directors. The secretariats carry out the operational tasks of the organization, such as the formulation and review of rules, demand forecast, and consultation. OCCTO's roles and responsibilities include the following:

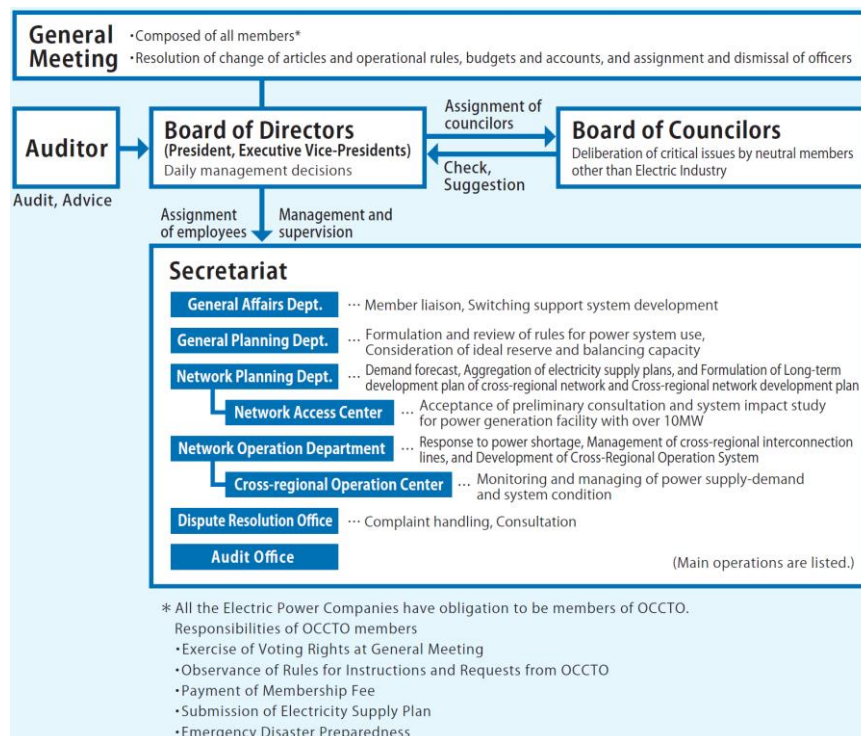
- ▶ Aggregation, review, and submission of electricity supply plans.
- ▶ Evaluation of future supply–demand balance.
- ▶ Recommendation of necessary network enhancement.
- ▶ Coordination in the maintenance of long-term to short-term work plans from the point of supply–demand.
- ▶ Issue instructions to balance the supply and demand through more outputs of generators or power exchange.
- ▶ Establishment and amendment of network codes.
- ▶ Reception of requests and reply of network access issues.
- ▶ Network information disclosure about interconnection and regional grids.

- ▶ Handling of complaints or inquiries from the electricity supply companies and conflict resolution.
- ▶ Undertake research, gather statistics, and implement public relations activities.

As shown in Figure 12, OCCTO's most high-level, decision-making body is the General Meeting. General meetings are held typically once a year after the yearly settlement has been finalized. The meeting can be held at the end of the fiscal year to determine the plan and budget for the following year. If any issues or decisions arise during the year, an ad hoc meeting will be organized accordingly. The voting rights in these general meetings are set so that each business classification at the point of implementation of full retail liberalization will have equal voting rights. A general meeting decides upon the following items:

- ▶ Matters to be resolved:
 - ▶ Change in the articles of incorporation.
 - ▶ Determination or change in the budget, settlement.
 - ▶ Change in business rules.
 - ▶ Election and/or dismissal of officers.
 - ▶ Matters concerning dues.
 - ▶ Business plan and business report.

Figure 12. OCCTO Organization and Governance



OCCTO = Organization for Cross-Regional Coordination of Transmission Operators.
Source: Tokyo Electric Power Company (TEPCO)

3. Funding and Cost Recovery

OCCTO is an authorized corporation and its funding plan for business operations is built around a membership fee system. The funding mechanism aims for equal cost-sharing so that the various companies that use the transmission and distribution networks should pay for the usage, rather than the TSO having to fully bear the costs. An important factor in the funding and cost-recovery scheme design is that it should not be a barrier for entry for small companies. The funding scheme basically has two levels, as follows:

1. Special dues (**¥3,956,164**) paid by 10 TSOs are as follows:
 - a) Hokkaido (¥206,480)
 - b) Tohoku (¥532,951)
 - c) Tokyo (¥1,887,733)
 - d) Chubu (¥868,709)
 - e) Hokuriku (¥192,455)
 - f) Kansai (¥951,692)
 - g) Chugoku (¥402,442)
 - h) Shikoku (¥181,351)
 - i) Kyusyu (¥572,690)
 - j) Okinawa (¥47,394)
2. Dues at **¥10,000 per company**, divided as follows:
 - a) Generation companies (567 entities)
 - b) Retail companies (380 entities)
 - c) Specified transmission and distribution operators (21 entities)