

Business Segments

Transmission and Distribution Business

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Overview

With the Electricity Business Act revised in April 2020 to further ensure the neutrality of the transmission and distribution business, the general power transmission and distribution operations of the Kansai Electric Power Company were spun off and integrated into the newly established Kansai Transmission and Distribution, Inc.

At Kansai Transmission and Distribution, Inc., we manage power grids while planning and constructing transmission, transformation and distribution facilities to deliver electricity to customers. Specifically, committed to being neutral and fair, we are delivering safe, stable and low-cost electricity to all customers and providing reliable and secure power grid services, which contributes to the development of local communities.



Business environment

- Efforts should be stepped up to promote the mitigation of and resilience to disasters in order to maintain a safe and stable electricity supply, with typhoons and earthquakes occurring frequently and in light of the Nankai megathrust earthquake, which is expected to strike Japan.
- As social challenges emerge, such as an aging society (with a declining population due to falling birthrates) and aging infrastructure, massive amounts of renewable energy should be introduced while keeping up with changes in the business environment (e.g., progress in digital and storage battery technologies).

Medium-term Management Plan Strategies

What we aim to become in the future

In addition to continuing to guarantee neutral and fair transmission and distribution businesses and provide customers with safe and stable power at low cost, we will create new services and advance together with local communities.

Efforts (3-year Medium-term Management Plan)

To make efforts to “strengthen management foundations” in order to continuously provide “safe”, “stable” and “affordable” electricity

- Build resilience through discussions with the Typhoon No. 21 Response Verification Committee, the Organization for Cross-regional Coordination of Transmission Operators, etc.
- Respond properly to aging facilities
- Accelerate cost restructuring by utilizing digital technology
- Develop structures and mechanisms looking ahead to spin-offs and the realization of our Medium-term Management Plan

To make efforts to “increase business opportunities” looking ahead at medium and long-term environmental changes and growth opportunities

- Develop facilities ahead of next-generation transmission & distribution (Maximum utilization of existing facilities and decentralization efforts, etc.)
- Accelerate efforts to create new business utilizing technology and know-how
- Carry out overseas consulting business continuously, and facilitate human resource development and mechanisms for promoting overseas business



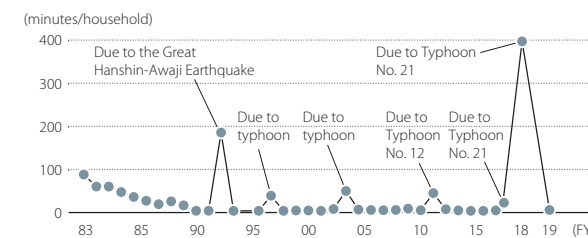
A drone taking off with a cord

Performance for fiscal year 2019

To provide high-quality electric power

We at Kansai Transmission and Distribution, Inc. work to operate power systems that provide a reliable link between power plants and consumers and optimize the configuration of facilities. We are also making thorough efforts to prevent failure recurrence. As a result of our efforts, with the exception of major natural disasters, we are maintaining one of the world’s highest power quality levels in the transmission and distribution business.

Annual duration of power outage per household



Achieving electricity resilience

On September 4, 2018, the powerful Typhoon No. 21 ripped through the Kansai area, causing breakages totaling more than 1,300 utility poles and a power outage affecting roughly 2.2 million households in total. We apologize to our customers for the inconvenience and trouble caused by the extensive and long-term power outage.

Following the damage caused by Typhoon No.15 and Typhoon No.19 during the 2019 season, the Electricity Resilience Working Group* compiled verification results in January 2020 regarding our response to these emergencies. Based on these results, we have created a cooperation plan to be used in an emergency with the aim of fulfilling our power supply obligations through successful restoration of the power supply. This plan specifies cooperation with general power transmission and distribution business operators and related organizations (local governments, Self-Defense Forces, etc.) in the case where significant damage has been caused, or may be caused, to power transmission and distribution equipment in an emergency. We will continue to step up our efforts for quick recovery in the event of an emergency.

By addressing issues presented by the Electricity Resilience Working Group, which have been discussed nationwide, and sharing the lessons learned from Typhoon No. 21, we are

determined to fulfill our mission of supplying safe and stable electricity and supporting society. To that end, we will develop and introduce new technologies and new construction methods, as well as systematically maintaining or replacing aging equipment, aiming for prevention of accidents and prompt restoration of the power supply.

* Joint working group set up under the Basic Policy Subcommittee on Electricity and Gas of the Advisory Committee for Natural Resources and Energy, and the Electric Power Safety Subcommittee of the Industrial Structure Council.

Examples of measures taken following Typhoon No. 21

- Quick information gathering using smartphones
- Understanding the scope of damage using drones; using this information for restoration work
- Trial operations of power outage information collection utilizing smart meter data
- Bolstering a broad support system inside and outside the company
- Timely provision of information to the customer on power outages and restoration work

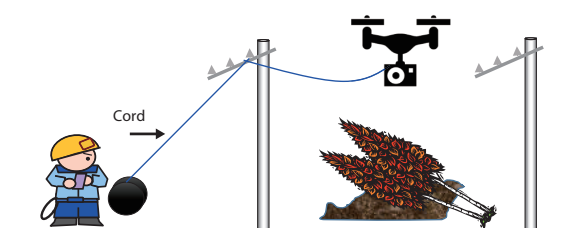
Understanding the scope of damage using drones; using this information for restoration work

In places that are difficult to access, such as a site following a landslide, we use drones to check the status of equipment so we can quickly grasp the whole picture.

Drones are also expected to be used in restoration work, for example, using a drone for overhead wiring of a cord to replace power lines.



Damage investigation by aerial drone video



Using a drone for overhead wiring of a cord to replace power lines

Introduction of a new system for renovation work for aging facilities

<Adoption of new method (attachment-type moving device) to remove 500-kV No. 4 transformers at the Shigi Substation>
When replacing large equipment, such as transformers, on substation premises, the roller towing method is generally adopted for the transportation. Recently, we have adopted a new method which uses an attachment-type moving device. Compared to the roller towing method, it enables shorter working hours and reduces the risk of accident (injury from falling heavy objects, physical injuries when inserting rollers, etc.), and this new approach is expected to be adopted as an option for transporting large equipment. We will continue to adopt new technologies and methods to ensure safe operations.



we provide information on disasters and how we can be prepared, as well as carrying out activities to raise awareness on disaster mitigation in local communities.

Strengthening our disaster response system

We are enhancing our response systems to prepare for rapid initial response upon the occurrence of disasters. This includes the designation of individuals who arrive at the workplace early and night watches by initial response supervisors, along with the implementation of special training for individuals and supervisors in charge of initial response several times a year.

Moreover, with the President of the Kansai Electric Power Co., Inc. serving as Chief of the Emergency Headquarters, group-wide comprehensive disaster drills are conducted every year and these drills see full collaboration between the Kansai Electric Power and Kansai Transmission and Distribution, Inc. We are committed to improving our disaster response skills and raising disaster awareness, not only to prepare for the occurrence of the Nankai Trough Earthquake but also with consideration for severe incidents such as the simultaneous occurrence of a nuclear power disaster or during occasions when the balance of power supply and demand is tight.

In the event of a major disaster, employees will be notified of any information pertaining to the disaster at the same time. Furthermore, we have established action standards so that we can build a response system promptly after a disaster occurs, even on holidays or during the night.



Response to extremely severe natural disasters

In recent years, natural disasters have become increasingly severe. Based on what we learned from Typhoon No. 21 that hit in 2018, we established the Typhoon No. 21 Response Verification Committee to ensure an even more appropriate and robust response. From the perspective of rapid restoration of power supply following power outages, customer service and cooperation with local governments, we have implemented measures to cope with large-scale disasters.

Looking specifically at rapid restoration of power supply following power outages, we utilized drones and other new technologies to gain a timely and efficient grasp of the extent of damage to equipment. We also sought support and cooperation from not just internal sources but also from our subcontractors and other general power transmission and distribution utilities, in order to strengthen the restoration work system.

Regarding customer service, we have newly introduced a Power Outage Information App, an AI-driven automated power outage information response service, and an automated information portal that utilizes a scenario-based chatbot, with the aim of disseminating power outage information and diversifying information channels. Our support system in the event of a massive blackout has also been strengthened. As part of such efforts, in collaboration with other general power transmission and distribution utilities, we have established new

Transmission and Distribution Contact Centers in Aomori City and Sapporo City to answer inquiries regarding power outages and power transmission and distribution equipment.

In cooperation with local governments, we have reinforced our cooperation through prior discussions and concluding agreements on the removal of fallen trees and other obstacles, as well as mutual confirmation of which facilities are to be restored as a priority.

Additionally, based on the lessons learned from past natural disasters, we developed an emergency collaboration plan designed for mutual support and cooperation in an emergency situation. Working together, 10 general power transmission and distribution utilities jointly submitted this plan to the Ministry of Economy, Trade and Industry.

Going forward, we will continue to share lessons learned for the future as well as steadily implementing these efforts to build a more robust business foundation to ensure safe and stable electricity and gas supply.

Strengthening collaborative ties with concerned external organizations

Even in times without disasters, we are working to build relationships with governments, police and fire departments and other concerned external organizations as well as other electric power companies in order to enable smooth mutual cooperation during times of emergency and restore electric and gas service as quickly as possible. Specifically, we proactively participate in disaster response training sessions and programs held by local governments, designated public corporations and the like. In collaboration with the Japan Ground Self-Defense Force and Japan Maritime Self-Defense Force, we periodically carry out joint drills based on standing agreements for mutual cooperation in disaster preparedness and prevention.



Joint disaster drill with Japan Maritime Self-Defense Force Maizuru Regional Headquarters in March 2020

Contribution to raising awareness of disaster mitigation in local communities

We run booths at disaster drills and events held by local governments, and carry out activities to raise awareness of disaster mitigation using our Disaster Preparedness Handbook as well as through experience of operating seismic breakers.

Moreover, for a wide range of generations, from students to neighborhood associations, we create opportunities to explain what damage and disruption could be expected following a Nankai Trough Earthquake, as well as the damage caused by disasters in recent years, and our routine preparations. Through these efforts, we contribute to promoting understanding of

the importance of disaster response and preparedness.

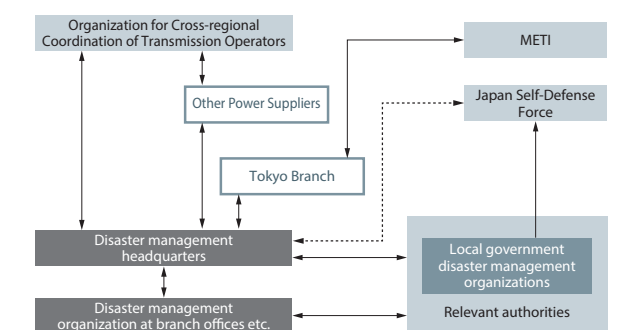
Disaster response after company spin-off

Even after the unbundling of the transmission and distribution sector required by law that was implemented in April 2020, in the event of a large-scale disaster such as the Nankai Trough Earthquake, the Company and Kansai Transmission and Distribution, Inc. will be united to respond to the disaster and continue to fulfill our responsibility of providing a stable electricity and gas supply.

• Disaster Preparedness Handbook
Disaster Preparedness Handbook is disclosed on the websites of the Kansai Electric Power Co., Inc. and Kansai Transmission and Distribution, Inc. It will help with disaster mitigation efforts in the home.



Emergency system for communicating with relevant authorities



Dispatching a restoration support team to other electric companies

In September 2019, after the damage caused by Typhoon No. 15, the Group dispatched a support team to restore electricity upon the request of TEPCO Power Grid. Specifically, we sent equipment such as high- and low-voltage generators, as well as personnel for recovery and logistics work in the afflicted area, Shirako in Chiba Prefecture. For 17 days, we offered our full cooperation to the restoration work of the TEPCO Power Grid. We will continuously and proactively cooperate in responding to natural disasters that occur in other areas to fulfill our responsibility of providing a stable electricity supply.



Emergency power transmission with high voltage power generators (Image is for illustrative purposes.) (April 2016)

Our efforts toward disaster mitigation

Preparing for a major disaster

To ensure the safety of our employees and their families and to fulfill our responsibilities of providing a stable supply of electricity and gas, we promote disaster mitigation initiatives that will strengthen facilities to withstand various natural disasters. We have also put in place a disaster control system to enable rapid recovery. Particularly, in the event of the Nankai Trough Earthquake, a megathrust earthquake which is feared to hit in the future, we will follow the basic plan for mitigating disaster announced by the Japanese government and take carefully planned disaster response and recovery measures in place.

Considering the damage caused by typhoons that occurred more frequently in recent years, including Typhoon No. 21 in 2018, we also implement various disaster mitigation measures, utilizing the lessons learned from past disasters.

In addition, through disaster mitigation events and lectures,