The Great East Japan Earthquake and Lessons Learned
~Oil and Electricity~

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1. Oil Supply in Emergency
Oil supply disruption after the 3.11 Earthquake (2011)

Damages

- 6 refineries in Kanto and Tohoku were shut down.
- The refining capacity of Japan decreased to 70%.
- 40% of the gas stations in Tohoku were shut down.
- The logistics of the oil supply chain collapsed.

Initial Emergency Response Measures Taken

**March 11** METI (Ministry of Economy, Trade and Industry) set up 24-hour operation room to cope with urgent demands for oil products.

**March 12** An “improvised” public-private partnership for emergency supply was established immediately. METI requested PAJ (Petroleum Association of Japan) to transfer oil product stocks to devastated areas and to activate oil refineries to increase production.

**March 14** METI lowered 70-day private sector stockholding obligation down to 67-day.

**March 18** Oil companies accelerated joint supply operations, delivering oil products to the damaged areas in cooperation.

**March 21** METI lowered private sector stockholding obligation down to 45-day.
Distribution problems

We had stocks, but did not have enough distribution capacity.

Damages and difficulties in the most stricken area

- Ports, railways, and roads were damaged everywhere
- 3 refineries in the area were heavily damaged and shut down
- 40% of the gas stations were shut down in the area

Transportation of oil products from other areas was difficult
- Oil refinery in the area was almost stopped
- Many requests for supplying drum-canned fuel and setting up temporary gas stations from the area

Key Lesson Learned

It is pivotal to establish regional resilient supply chain to ensure stable supply of oil products in stricken areas when distribution from outside falls short.
Background
Based on the lessons from the Earthquake, METI amended the Oil Stockpiling Act to secure a stable supply of oil products in the event of disasters in a specific area.

＜Major amendments＞

1. To relax the requirement for the release of the government oil reserves
   - The Minister can release the reserves not only in case of an oil supply disruption from oil producing countries, but also in case of supply shortfall in a specific area caused by natural disasters.

2. To establish the Emergency Cooperation Plan by the designated oil companies
   - The designated Oil companies are obliged to prepare “Emergency Oil Supply Cooperation Plans” to support each other in order to maintain supply chains even in case of severe supply chain disruption.
   - The Minister can order the enforcement of “Emergency Oil Supply Cooperation Plans” on oil companies, in the event of supply disruption caused by a disaster.

3. To expand the government oil product reserves
   - METI has reviewed management of the government oil product reserves in aiming to expand their sorts and amount.
Flow of Oil Supply Requests

Stricken Areas (Local Governments)

REQUEST FOR SUPPLY

Cabinet Office

METI, Agency for Natural Resources & Energy

Petroleum Association of Japan (PAJ)

Information Gathering Room

Joint Operation Room

OIL COMPANY

OIL COMPANY

OIL COMPANY

DELIVERY

USERS IN THE STRICKEN AREA
2. Electricity Saving Challenges
Impact on Energy Supply/Demand in Japan

- Tokyo Electric Power Company supplies electricity 42 million people and 40% of Japan’s GDP.
- It lost 40% of its generation capacity just after the earthquake and tsunami.
The Planned Rolling Blackouts

- A large decrease in electricity supply capacity in the service area of TEPCO and Tohoku EPCO.
- To cover the supply-demand gap, these electric companies implemented rolling blackouts as unavoidable emergency measures in March.

Outline of the rolling blackouts

TEPCO service area

※図はイメージであり、実際のグループとは異なります
Demand Side Measures

- ▲15% demand reduction target for large users, small users and households
- Large users ( > 500kW) : Based on the Electricity Business Act (Article 27)
- Small users ( < 500kW) : the government encouraged to map out a voluntary plan through orientation by visit.
- Households and individuals: “Menu of Electricity Saving Measures” through TV, newspaper and website.

Ad on newspaper

Standard Format for Action Plan

Menu of Electricity Saving by Households
Lessons Learned?

1. Regional resilient supply chain

2. The coordination between stakeholders such as government and industrial association

3. Reliable information