The nuclear power ratio in domestic power generation has decreased after the Great East Japan Earthquake due to the long-term shutdown of nuclear power plants.

On the other hand, the thermal power ratio has increased to 90%. Currently, LNG thermal power alone accounts for nearly 50% of domestic power generation.

Source: Compiled by METI based on “Outline of Electric Power Development in FY 2010” etc.
Japan Suffers Huge Trade Deficit

- The overall cost of LNG imports to Japan has increased from 3.5 trillion yen (2010) to around 8 trillion yen (2014).
- Japan recorded a trade deficit for the first time in 31 years in 2011. Trade deficit for 2014 was 12.8 trillion yen, which is not a sustainable level for Japan.

Changes in trade balance and current account balance (trillion yen)

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2014</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Balance</td>
<td>6.6</td>
<td>-12.8</td>
<td>-19.5</td>
</tr>
<tr>
<td>Net Import Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LNG</td>
<td>3.5</td>
<td>7.9</td>
<td>+4.4</td>
</tr>
<tr>
<td>Crude Oil</td>
<td>9.4</td>
<td>13.9</td>
<td>+4.5</td>
</tr>
<tr>
<td>Petroleum Products</td>
<td>2.5</td>
<td>3.1</td>
<td>+0.7</td>
</tr>
<tr>
<td>Coal</td>
<td>2.1</td>
<td>2.1</td>
<td>-0.0</td>
</tr>
</tbody>
</table>
High energy costs in Japan have negative impact on the competitiveness of energy intensive industries.

Reduction fuel procurement cost is an urgent issue.

**Ratio of industrial energy prices relative to the United States**

<table>
<thead>
<tr>
<th>Natural gas</th>
<th>Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Japan</strong></td>
<td><strong>Japan</strong></td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td><strong>Europe</strong></td>
</tr>
<tr>
<td><strong>China</strong></td>
<td><strong>China</strong></td>
</tr>
</tbody>
</table>

- **Natural gas**
  - **Japan**: 5x
  - **Europe**: 4x
  - **China**: 3x

- **Electricity**
  - **Japan**: 2x
  - **Europe**: 2x
  - **China**: 1x

**Source:** IEA

- Reduction from 2013
- 2035
Diversification is the key in the Strategic Energy Plan

Principles of Energy Policy and Viewpoints for Reformation

1) Confirmation of basic viewpoint of energy policies (3E + S)

- **Stable Supply (Energy Security)**

- **Cost Reduction (Economic Efficiency)**

- **Environment**

- **Safety**

2) Building multilayered and diversified flexible energy demand-supply structure

- Establishing resilient, realistic and multi-layered energy supply structure, where each energy source can exert its advantage and complement others’ drawbacks.

- Creating a flexible and efficient supply/demand structure where various players can participate and various alternatives are prepared by system reforms.

- Improving self-sufficiency ratio by developing and introducing domestic resources to minimize influence from overseas’ situation.

Global Viewpoint

- Developing energy policies with international movement appropriately
- Internationalizing energy industries by facilitating business overseas.

Economic Growth

- Contribution to reinforce Japan’s locational competitiveness.
- Activating Japan’s energy market through energy system reform.
New Energy Mix

**Basic Direction**

1) To improve the self-sufficiency ratio to around 25% surpassing the level before the Earthquake.
2) To reduce the electricity costs lower than today.
3) To set a high-level GHG reduction goal compared with other developed countries to lead the world.

**Electricity Demand**

- **2013**
  - GDP growth 1.7%/year
  - Electricity Demand: 967 TWh (actual results)

- **2030**
  - Energy conservation: 196 TWh (▲17%)
  - Total Electricity generation: 1,278 TWh
  - Energy Conservation: 17%
  - Renewable Energy: 19～20%
  - Nuclear: 18～17%
  - LNG: 22%
  - Coal: 22%
  - Oil: 2%

**Electricity generation mix**

- **2030**
  - Total Electricity generation: 1,065 TWh
  - Renewable Energy: 22～24%
  - Nuclear: 22～20%
  - LNG: 27%
  - Coal: 26%
  - Oil: 3%

**Total base load power ratio**: 56%
## Comparison of INDCs by major countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Comparison with 1990</th>
<th>Comparison with 2005</th>
<th>Comparison with 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>▲ 18.0% (2030)</td>
<td>▲ 25.4% (2030)</td>
<td>▲ 26.0% (2030)</td>
</tr>
<tr>
<td>USA</td>
<td>▲ 14~16% (2025)</td>
<td>▲ 26~28% (2025)</td>
<td>▲ 18~21% (2025)</td>
</tr>
<tr>
<td>EU</td>
<td>▲ 40% (2030)</td>
<td>▲ 35% (2030)</td>
<td>▲ 24% (2030)</td>
</tr>
</tbody>
</table>

*INDCs: Intended Nationally Determined Contributions*
Energy Market Reform

- The first comprehensive electricity and gas market reform in 60 years.

3 Objectives

1) Securing a stable supply of electricity and gas
2) Suppressing electricity and gas rates to the maximum extent possible
3) Expanding choices for consumers and business opportunities

Full liberalization of the retail energy market

- **Electricity**: [Law enacted in June 2014, to be implemented from 2016](#)
- **Gas**: [Law enacted in June 2015, to be implemented from 2017](#)

Legal unbundling of transmission/distribution sector, and abolishing retail price regulations

- **Electricity**: [Law enacted in June 2015, to be implemented from 2020](#)
- **Gas**: [Law enacted in June 2015, to be implemented from 2022](#)