Role of the Transport sector in Japanese Climate Policy

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Japanese Climate Change Policy

“The Plan for Global Warming Countermeasures”
by Cabinet decision in May 2016

<Japan’s GHG reductions target and goal>
• Reduction of 26.0% by FY2030 compared to FY2013
• 80% reduction by 2050 as its long-term goal

<Progress Management of the Plan>
• Yearly progress review and revise the plan every 3 years
Japan’s GHG reduction target in each sector

- Achieve the level of a reduction of 26% by FY2030 compared to FY2013
- Transport sector needs to be reduced by 28% by FY2030

<table>
<thead>
<tr>
<th>Sector</th>
<th>Compared to FY2013</th>
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</thead>
<tbody>
<tr>
<td>Energy-related CO₂</td>
<td>▲25.0%</td>
</tr>
<tr>
<td>Non energy-related CO₂</td>
<td>▲6.7%</td>
</tr>
<tr>
<td>CH₄</td>
<td>▲12.3%</td>
</tr>
<tr>
<td>N₂O</td>
<td>▲6.1%</td>
</tr>
<tr>
<td>HFCs, PFCs, SF₆ and NF₃</td>
<td>▲25.1%</td>
</tr>
<tr>
<td>Removals by ULUCF</td>
<td>▲2.6%</td>
</tr>
<tr>
<td>Greenhouse gas emission reduction</td>
<td>▲26.0%</td>
</tr>
</tbody>
</table>

![Graph showing emission levels for different sectors](image)
Key Policies and Measures in Transport sector

Introduction of Highly Energy-Efficient Vehicles

- Hybrid vehicles (HEV)
- Electric vehicles (EV)
- Fuel cell vehicles (FCV)

**Share of next-generation vehicles in new car sales**

50 ~ 70% (by FY2030)

**Other measures**

- Promotion of public transport and modal shift
- Formulate compact cities
- Traffic flow improvement
- Promotion of low-carbon logistics
Vision & Strategy for Transport sector

Long-term low carbon vision 2050 by MoEJ (Mar 2017)
- Promotion of compact cities and Modal shift
- Cars; EV and FCV
- Autonomous driving
- Car sharing

Hydrogen society strategy by Ministerial commission (Dec 2017)
- Promote various policies to establish Hydrogen society
- Power to Gas
- Target for FCV 40,000 by 2020 and 800,000 by 2030
Low-Carbon Hydrogen Supply Chain Demonstration

Production
- Unutilized energy

Storage
- Compressed-gas and liquefied-gas storage

Transportation
- Tube trailer/Liquid tanker

Application
- FCV
- FC bus
- Fuel cells
Hydrogen supply chain project with floating offshore wind

1. First national demonstration of commercial-sized floating offshore wind (2MW)
2. Demonstration system that utilizes hydrogen produced by residual energy from it
Hydrogen supply chain project with floating offshore wind

Kaba island

- Tap water
- H₂ production
- MCH production
- MCH storage
- Transport by sea
- Toluene storage

Fukue island

- MCH regeneration and H₂ consumption (electricity generation and hot-water supply)
- MCH storage
- Transport by sea
- Toluene storage

Residual electricity from offshore wind

Compressed gas filling
Toyota Project Overview with wind power

System flow of the entire project

Renewable energy → Hydrogen manufacturing → Storage/compression → Transport → Utilization

To be newly installed inside the Hama Wing site:
- Water (H\textsubscript{2}O)
- Water electrolysis system (10 Nm\textsuperscript{3}/h)
- Hydrogen manufacturing system
- Receiving/transforming/distribution panels, storage facility
- Receiving/transforming/distribution panels
- Power storage system (150 kWh)
- Hydrogen storage and compression system
- Hydrogen compressor (50 Nm\textsuperscript{3}/h)
- Low-pressure hydrogen storage tank (800 Nm\textsuperscript{3})

Keihin Waterfront Area:
- Hydrogen (H\textsubscript{2}) 35 MPa
- Fuel cell forklifts (Total 12 vehicles)
- Vegetable and fruit markets
- Refrigerated warehouses
- Distribution warehouses, etc.

Supplying hydrogen using simple fueling trucks
(Optimum transport that addresses operational situations and needs)

Yokohama City Wind Power Plant (Hama Wing) (1,980 kW)
- Receiving facility (already built)
Thank you for your attention!

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