The Evolution of Automotive Policy in Japan

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Japan Automobile Manufacturers Association, Inc.

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Topics of Today’s Talk

1. Historic Overview of Japan’s Automotive Policy

2. Recent Auto Policy Initiatives
Addressing the Challenges Posed by Japan’s Motorization

(No. of vehicles in circulation, x 1,000 units)

1960s
Early years of full-fledged motorization

1970s
Rapid expansion of motorization, in tandem with:
- Road development
- Increased road accidents
- Growing pollution issues

1978
Enforcement of stringent emissions regulations
Full liberalization of automobile imports

1978
Annual road fatalities peak at nearly 17,000.

1970

1980s

1990s
Globalization of Japan’s auto industry

1997
Introduction of first hybrid cars to home market

2000s
Increased efforts to tackle global environmental issues; accelerated eco-car development

2005
Enforcement of ELV Recycling Law

Specific Government Initiatives

1. Enhancing road safety
2. Improving air quality
3. Encouraging energy conservation
4. Promoting trade liberalization
1. Enhancing Road Safety

Fatalities (No. of persons) | Accidents (No. of accidents)
--- | ---
| 16,765 | 718,080 |
| 10,792 | 472,938 |
| 8,760 | 476,677 |
| 9,261 | 552,788 |
| 11,227 | 643,097 |
| 10,679 | 761,794 |
| 9,066 | 931,950 |
| 6,871 | 934,339 |
| 4,612 | 628,248 |

<table>
<thead>
<tr>
<th>Year</th>
<th>Fatalities (No. of persons)</th>
<th>Accidents (No. of accidents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>16,765</td>
<td>718,080</td>
</tr>
<tr>
<td>1975</td>
<td>10,792</td>
<td>472,938</td>
</tr>
<tr>
<td>1980</td>
<td>8,760</td>
<td>476,677</td>
</tr>
<tr>
<td>1985</td>
<td>9,261</td>
<td>552,788</td>
</tr>
<tr>
<td>1990</td>
<td>11,227</td>
<td>643,097</td>
</tr>
<tr>
<td>1995</td>
<td>10,679</td>
<td>761,794</td>
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<tr>
<td>2000</td>
<td>9,066</td>
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<td>4,612</td>
<td>628,248</td>
</tr>
</tbody>
</table>

Down by 75% from 1970 peak

Source: National Police Agency
1.1 Road Infrastructure Development

The progress of highway & regular road development

- Highways
- Regular roads

Length of Japan's highway network

Length of Japan's regular road network
2. Improving Air Quality

Exhaust Emissions Regulations for Gasoline Non-Heavy-Duty Vehicles, 1966-2005

1966 Ministry of Transport Notice (4-mode test cycle: CO≤3%) ⇒ Japan’s 1st emissions regulation

1973 Emissions Regulations (10-mode test cycle: CO=18.4g/km, HC=2.95g/km, NOx=2.18g/km)

Fitting of blow-by gas reducer & evaporator / Adjustment of ignition timing / Exhaust system modifications

1975 Emissions Regulations (10-mode test cycle: CO=2.1g/km, HC=0.25g/km, NOx=1.2g/km)

Catalyst technology:
- Engine improvements + EGR (exhaust gas recirculation) + Secondary air injector + Catalytic converter
- Exhaust gas recombustion:
  - Thermal reactor + EGR
- Stratified charge combustion:
  - Main combustion chamber + Pre-chamber

1976 Emissions Regulations (10-mode test cycle: CO=2.1g/km, HC=0.25g/km, NOx=0.6g/km [≤1t], 0.85g/km [>1t])

Increased EGR, electronic fuel injection

1978 Emissions Regulations (10-mode test cycle: CO=2.1g/km, HC=0.25g/km, NOx=0.25g/km)

Three-way catalytic converter

2000 Emissions Regs. (10·15-mode test cycle: CO=0.67g/km, HC=0.08g/km, NOx=0.08g/km)

*2005 Emissions Regs. (combined 10·15+11-mode test cycle: CO=1.15g/km, NMHC=0.05g/km, NOx=0.05g/km)

Improved 3-way catalytic converter

*Because of the different test cycles applied, a simple comparison of the 2005 regulations with preceding regulations is not possible.

Year: 66, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05

g/km

0 2 4 6 8 10 12 14 16 18 20

CO HC Nox

66 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05
3. Encouraging Energy Conservation

1973: 1st oil crisis
1979: 2nd oil crisis

Stepped-up measures for energy conservation

Average certified fuel economy (km/ℓ) of gasoline-powered passenger cars

- 2000 PC fuel efficiency target: 13.5 km/ℓ
- 2010 PC fuel efficiency target: 15.1 km/ℓ
- 2015 PC fuel efficiency target: 18.6 km/ℓ
- 2020 PC fuel efficiency target: 22.3 km/ℓ

1999: 2000 FE target reached
2010: 2015 FE target reached
2020: 2020 FE target

Source: JAMA
4. Promoting Trade Liberalization

1960s: Partial liberalization for passenger car imports
1978: Full liberalization for CBUs*
1981: Full liberalization for auto parts

*Tariffs on trucks and buses were eliminated concurrently.

Japan's Vehicle Import Tariff Rates
vs Vehicle Production/Export Volumes
Recent Auto Policy Initiatives

1. Japan’s next-generation vehicle strategy
2. Implementing ITS (Intelligent Transport Systems)
3. Auto-related taxes and tax policy
4. Promoting free trade in the global market
1. Japan’s 2010 Next-Generation Vehicle Strategy

### Next-Generation Vehicle Diffusion Projections for 2020 and 2030

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2030</th>
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</thead>
<tbody>
<tr>
<td>Conventional vehicles</td>
<td>80% or more</td>
<td>60-70%</td>
</tr>
<tr>
<td>Next-generation vehicles</td>
<td>Under 20%</td>
<td>30-40%</td>
</tr>
<tr>
<td>Hybrid vehicles</td>
<td>10-15%</td>
<td>20-30%</td>
</tr>
<tr>
<td>Electric vehicles,</td>
<td>5-10%</td>
<td>10-20%</td>
</tr>
<tr>
<td>Plug-in hybrid vehicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel-cell vehicles</td>
<td>Minuscule</td>
<td>1%</td>
</tr>
<tr>
<td>Clean diesel vehicles</td>
<td>Minuscule</td>
<td>Under 5%</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th></th>
<th>2020</th>
<th>2030</th>
</tr>
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<tbody>
<tr>
<td>Conventional vehicles</td>
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<td></td>
</tr>
<tr>
<td>Fuel-cell vehicles</td>
<td>Under 1%</td>
<td>Under 3%</td>
</tr>
<tr>
<td>Clean diesel vehicles</td>
<td>Under 1%</td>
<td>5-10%</td>
</tr>
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</table>
1.2 Japan’s Development of EV/FCV Charging Infrastructure

Infrastructure development is crucial to the wider diffusion of electric vehicles and fuel cell vehicles.

1. Vehicle Supply Status (Automakers):
   EVs: Mass-produced EVs were introduced to the domestic market in 2009. Sales of EVs have greatly increased in the past few years.
   FCVs: Mass-produced FCVs to be introduced to the domestic market in 2015.

2. Infrastructure Development Status (Charger & Energy Suppliers):
   EVs: As of October 2013, 1,858 quick chargers have been set up in Japan. Suppliers will increase the supply to meet the government’s diffusion target of 5,000 quick chargers by 2020.
   FCVs: The establishment of about 100 hydrogen supply stations is targeted in preparation for the market introduction of FCVs.
2.1 Implementing ITS (Intelligent Transport Systems)

ITS applications enable road users to interface with vehicles and road infrastructure in order to alleviate road traffic problems such as congestion, accidents, and environmental degradation.

- Road congestion: Approx. 5 billion hours of time lost annually
- Road accidents: 4,373 fatalities (among 628,248 accidents) in 2013
- Environmental impact: 19.6% of Japan’s total CO₂ emissions in 2011 were transport sector-emitted.

Japanese Gov’t Agencies Responsible for ITS Promotion

Cabinet Secretariat & Cabinet Office

Four-Ministry Liaison Conference

- Ministry of Land, Infrastructure, Transport and Tourism
- National Police Agency
- Ministry of Internal Affairs and Communications
- Ministry of Economy, Trade and Industry

ITS Standardization Committee (promoting international standardization through ISO)

ITS Japan (promoting ITS through a private / public industry-academia alliance)

Intelligent Transport Systems are crucial to the implementation of government policies in regard to road safety, road traffic management, and environmental protection.
2.2 Japan’s ITS-based “Spot Service” System

- In 2011, the installation of approximately 1,600 ITS “spot” units along Japan’s expressway network was completed, enabling nationwide operation of this road-to-vehicle communication service.
- The ITS spot units communicate with compatible car navigation systems over high-speed, high-capacity systems.
- Incorporating ITS technologies, road-to-vehicle systems providing safe-driving support and cruise assistance have been in operation in Japan since 2010, when its ITS “spot service” system was first launched on a wide-scale basis.
## 3.1 Auto-Related Taxes and Tax Policy

- Japan’s automobile tax structure consists of nine different taxes, imposed at the time of vehicle purchase, during ownership, and during actual vehicle use.
- Together, these taxes pose a very heavy burden on automobile users (automobile-related tax revenue constitutes almost 10% of annual tax revenue in Japan).
- Certain specific taxes imposed at the time of vehicle purchase and during ownership are excessively high.

<table>
<thead>
<tr>
<th>On Acquisition</th>
<th>Tax Category</th>
<th>Tax Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acquisition tax</td>
<td>Local</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Consumption tax</td>
<td>National &amp; Local</td>
</tr>
<tr>
<td>During Ownership</td>
<td>Tonnage tax</td>
<td>National &amp; Local</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automobile tax</td>
<td>Local</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Mini-vehicle tax</td>
<td>Local</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>While in Use</td>
<td>Gasoline tax</td>
<td>National</td>
</tr>
<tr>
<td></td>
<td>Regional gasoline excise tax</td>
<td>Local</td>
</tr>
<tr>
<td></td>
<td>Diesel handling tax</td>
<td>Local</td>
</tr>
<tr>
<td></td>
<td>LPG tax</td>
<td>National &amp; Local</td>
</tr>
<tr>
<td></td>
<td>Consumption tax</td>
<td>National &amp; Local</td>
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### Acquisition Tax (on vehicle acquisition)

Reduction of the tax rate (for passenger vehicles: **5% → 3%**; for commercial vehicles and mini-vehicles: **3% → 2%**).

Total abolition of the tax when consumption tax is raised to **10%**.

<table>
<thead>
<tr>
<th>Reductions/Exemptions</th>
<th>From 1 April 2014</th>
<th>Reductions/Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current EVs/FCVs/PHVs/Clean Diesel Vehicles/Natural Gas Vehicles</td>
<td>Exempt</td>
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</tr>
<tr>
<td>Compliant +20% compared to 2015 FES</td>
<td></td>
<td>Compliant +20% compared to 2015 FES</td>
</tr>
<tr>
<td>Compliant +10% compared to 2015 FES</td>
<td>75%</td>
<td>Compliant +10% compared to 2015 FES</td>
</tr>
<tr>
<td>Compliant with 2015 FES</td>
<td>50%</td>
<td>Compliant with 2015 FES</td>
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**Total Budget Allocated:** ¥90 billion

### Tonnage Tax (during vehicle ownership)

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</tr>
<tr>
<td>Compliant with 2015 FES</td>
<td>50%</td>
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**Total Budget Allocated:** ¥20 billion

### Automobile Tax (during vehicle ownership)

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<td>50%</td>
<td>Compliant +20% compared to 2015 FES</td>
</tr>
<tr>
<td>Compliant +10% compared to 2015 FES</td>
<td>25%</td>
<td>Compliant +10% compared to 2015 FES</td>
</tr>
<tr>
<td>Compliant with 2015 FES</td>
<td>25%</td>
<td>Compliant with 2015 FES</td>
</tr>
</tbody>
</table>

**Total Budget Allocated:** ¥10 billion

**Note:** A two-step increase (in 2014 and in 2016) for vehicles on the road 13 years or longer, up to ¥5,700/0.5t/year for passenger cars for private use and up to ¥4,100/year for mini-vehicles.

### Note:

- **Acquisition Tax:**
  - Reduction of the tax rate (for passenger vehicles: **5% → 3%**; for commercial vehicles and mini-vehicles: **3% → 2%**).
  - Total abolition of the tax when consumption tax is raised to **10%**.

- **Tonnage Tax:**
  - **Current:**
    - EVs/FCVs/PHVs/Clean Diesel Vehicles/Natural Gas Vehicles: Exempt
    - Compliant +20% compared to 2015 FES: 50%
    - Compliant +10% compared to 2015 FES: 75%
    - Compliant with 2015 FES: 50%
  - **From 1 April 2014:**
    - Exempt
    - Compliant +20% compared to 2015 FES: 75%
    - Compliant with 2015 FES: 50%

- **Automobile Tax:**
  - **Current:**
    - EVs/FCVs/PHVs/Clean Diesel Vehicles/Natural Gas Vehicles: 50%
    - Compliant +20% compared to 2015 FES: 50%
    - Compliant +10% compared to 2015 FES: 25%
  - **From 1 April 2014:**
    - EVs/FCVs/PHVs/Clean Diesel Vehicles/Natural Gas Vehicles: 75%
    - Compliant +20% compared to 2015 FES (equivalent to compliance with 2020 FES): 50%
    - Compliant with 2015 FES: No eligibility

**Note:** Increase in the surcharge for gasoline and LPG vehicles on the road 13 years or longer, and for diesel vehicles on the road 11 years or longer: **10% → 15%**.
As stated by Japan’s Ministry of Economy, Trade and Industry:

- “When the consumption tax rate reaches 10% (scheduled in October 2015, will be finally decided in December 2014), taxation methods in accordance with eco-friendly performance will be introduced in the Automobile Tax as a taxation at the time of acquisition. This will lead to a concrete decision in the FY2015 Tax reforms.”

- “With regards to the Greening vehicle taxation (tax reduction) according to engine displacement, focusing on a vehicle which the tax exemption in accordance with eco-friendly performance is applied, a tax reducing measure will be enhanced.”

- “When designing the system of new automobile tax, make a consideration to bring out the further greening function of tax system, while assessing the moves of technology development, gathering opinions from a wide range of interested parties.”
4. Promoting Free Trade: Status of Japan’s EPAs

- In effect/signatory countries (12 countries + 1 region): Brunei, Chile, India, Indonesia, Malaysia, Mexico, Peru, Philippines, Singapore, Switzerland, Thailand, Vietnam; ASEAN
- In negotiation (5 countries + 5 regions): Australia, Canada, Colombia, Mongolia, South Korea; GCC (Gulf Cooperation Council), the EU, the RCEP (ASEAN++), China-Japan-Korea, the TPP (Trans-Pacific Partnership)
- Under consideration (1 country): Turkey
Thank you for your attention.