Ⅰ . Promotion of Eco-driving

Ⅱ . Green Management Certification
I. Promotion of Eco-driving

< Eco-driving Promotion System of Japan >

METI : Minister of Economy, Trade and Industry
MLIT : Ministry of Land, Infrastructure, Transport and Tourism
MOE : Ministry of the Environment
NPA : National Police Agency

Eco-driving
Promotion Council of
Japanese Government
(Since 2003)

Eco-Mo Foundation
- Promotion activities : Eco-Mo Foundation is secretariat of the Eco-driving Promotion Working Group = 16 transportation-related organizations
- Certification authority of Eco-driving educational organizations
- Issuing the Green Management Certification
1. Promotion Activities (Since 1997)

Eco-Mo Foundation is secretariat of the Eco-driving Promotion Working Group = 16 transportation-related organizations

◆ Distribution of brochures, titled “10 tips for Eco-driving” (Since 1998)

The following 10 tips for Eco-driving are being promoted in Japan.

1) Accelerate gently.
2) Maintain a steady speed.
3) Slow down by releasing the accelerator.
4) Limit the use of your air conditioner.
5) Don’t idle your engine.
6) Don’t warm up your engine before starting off.
7) Know your itinerary.
8) Check your tire pressure regularly.
9) Reduce your load.
10) Respect parking regulations.
   (Illegal parking can cause road congestion.)
◆ Holding symposiums (Since 2003)

◆ Running an Eco-driving promotion portal site (Since 2007)

ecodriving symposium

ecodriving portal site
2. Certification authority of Eco-driving educational organizations

Participants of Eco-driving promotion trainings will experience 10 to 30% improvement in terms of fuel efficiency.
This is a very effective way to raise awareness.

The Eco-Mo Foundation is the only officially recognized certification authority, to issue certifications to Eco-driving educational organizations.
< Eco-driving Certification for Truck and Bus drivers >

Eco-Mo

Application for authorization

Authorization given after evaluation

Request for certificates (for each class)

Issue of certification

Educational Organizations (truck manufacturers, dealers, etc.)

Training class

Certification

Truck and bus drivers

Certification given to the educational organizations

Badge given after class
< Certifying standard for a Truck & Bus Eco-driving class >

I. Classroom
1. Background of Eco-driving
   (1) Current state of global warming
   (2) Kyoto Protocol and CO2 emission reduction target for Japan
   (3) Current status of CO2 emissions in the transportation sector
2. Objective of Eco-driving
   (1) Roles of Eco-driving
   (2) Effects of Eco-driving
3. Driving technique required for Eco-driving
   (1) Slow starts and acceleration
   (2) Quick upward shifting
   (3) Cruising at set/economical speed
   (4) Prognostic driving and use of engine break
   (5) Reduction of unnecessary idling
4. Inspections and maintenance for Eco-driving
   (1) Air filter check
   (2) Engine oil
   (3) Air pressure check of tires

II. Practical training
1. Operating instructions in vehicle
2. Measurement of the fuel efficiency
3. Advice based on a driving result
< Advice based on an Eco-driving results >

Effects of the eco-driving

- **Fuel efficiency** (Km / L)
  Improvement rate: +16.9%

- **Fuel consumption** according to the pattern
  - standing start
  - cruise
  - deceleration

- **Degree of the acceleration** at the time of the standing start

- **Quantity of CO2 emission reduction**

General comment

Eco-driving result in case of ordinary car
< Authorized educational organizations > (As of Nov 30, 2010)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of authorized educational organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck and bus (Implemented since 2007)</td>
<td>15</td>
</tr>
<tr>
<td>Ordinary cars (Implemented since 2008)</td>
<td>138</td>
</tr>
</tbody>
</table>

< Number of certificates issued for classes > (As of Nov 30, 2010)
Ⅱ. The Green Management Certification

< Objective >
Reduce environmental loads in the transportation industry by diffusing green management that enables even small companies to easily and continuously undertake environmental protection.

< Overview of certification system >
- Certification authority: Eco-Mo Foundation
- Applicable businesses: truck, bus, taxi, warehouse, port transportation, domestic passenger shipping, domestic cargo shipping traders
- Effective period: 2 years
- The certification expense is charged: Rates increase according to number of branch offices.
- Certification standard: Must perform a certain level and continue its activities.
< Certification standard for Truck traders >

<table>
<thead>
<tr>
<th>Evaluation items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement of fuel efficiency</td>
</tr>
<tr>
<td>Setting of fuel efficiency targets</td>
</tr>
<tr>
<td>Designation of a person in charge</td>
</tr>
<tr>
<td>Implementation of Eco-driving education</td>
</tr>
<tr>
<td>Distribution of Eco-driving manual</td>
</tr>
<tr>
<td>Stopping an engine when parked</td>
</tr>
<tr>
<td>Acquisition of promotion method of Eco-driving</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Having in place mechanisms/systems for protecting the environment</td>
</tr>
<tr>
<td>2. Implementation of Eco-driving</td>
</tr>
<tr>
<td>3. Introduction of low pollution vehicles</td>
</tr>
<tr>
<td>4. Inspections and servicing of vehicles</td>
</tr>
<tr>
<td>5. Proper waste treatment and promotion of recycling</td>
</tr>
<tr>
<td>6. Promotion of environmental protection in management departments</td>
</tr>
</tbody>
</table>

The certification guarantees the promotion of Eco-driving in practice.
<Number of certified branch offices> (As of Oct 31, 2010)
< Percentage of vehicles owned by certified branch offices >

(As of Oct 31, 2010)

- **Truck for business**
  - Percentage: 11.6%
  - Total: about 1,233,000

- **Bus**
  - Percentage: 15.6%
  - Total: about 108,000

- **Taxi**
  - Percentage: 14.4%
  - Total: about 227,000
< The reasons of certified branch offices increasing >

◆ In a bulletin on the Energy Saving Law, shippers are encouraged to choose traders who have acquired ISO14001 or Green Management Certification as much as possible.
  → Shippers now require businesses to have Green Management Certification.

◆ Trucks, rental buses and taxi business firms who have acquired the Green Management Certification have a priority to be chosen by public sectors. This is described in the Green Purchasing Law, which states that the government is to choose Eco-Friendly products and services.

◆ Subsidies for introducing low pollution vehicles are available to businesses who have acquired Green Management Certification, even for a single vehicle.

◆ Some banks offer low interest loans to businesses who have acquired Green Management Certification.
The Green Management Certification program promotes the Eco-driving activity, and this action contributes to the reduction of CO2 emission in transportation sector in Japan.

- Increased vehicle fuel efficiency
- Improved traffic flow;
- Eco-driving;
- Use of alternative fuels
- Reduced travel Distances (modal shifts, etc.)

The chart shows the CO2 emissions from 1990 to 2030, with projections for the years 2020 and 2030. The emissions have decreased from 1990 to 2009, and are projected to continue decreasing until 2030 with the introduction of METI Strategy measures.

- ▲ 25% from '90
- ▲ 29% from '90

Factors in CO2 Emission Reduction in Japan’s Transport Sector
< Additional effects >

Reduction rates of traffic accidents (1 year after certification)

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Declared in FY2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>-25.1%</td>
</tr>
<tr>
<td>Bus</td>
<td>-8.6%</td>
</tr>
<tr>
<td>Taxi</td>
<td>-10.5%</td>
</tr>
</tbody>
</table>

Reduction rates of vehicle failures (1 year after certification)

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Declared in FY2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>-15.1%</td>
</tr>
<tr>
<td>Bus</td>
<td>-7.7%</td>
</tr>
<tr>
<td>Taxi</td>
<td>-9.9%</td>
</tr>
</tbody>
</table>
< Summary >

1. **The Eco-driving class with practical training is a very effective way of promotion**, since the participants can experience the improvement of fuel efficiency by themselves.

2. Managers of the transport companies are interested in Eco-driving to reduce a fuel cost. Therefore **they are positive about letting their drivers to participate in Eco-driving classes**.

3. The ratios of vehicles owned by certified Green Management companies are increasing year by year. (Trucks: 11.6%, Buses: 15.6%, Taxi: 14.4%) **Promotion of Eco-driving is in a success to the transportation companies in Japan.**

4. **The next step is** further expansion of the actions of the transportation companies, and **improvement of the eco-driving awareness of ordinary car drivers.**
Thank you for your kind attention.
( Appendix )
Comparison of fuel efficiency between certified truck companies and all truck companies.

Km/L

all truck companies: 2003 Data
certified truck companies: 2007 Data

Maximum loading: ton
(Appendix) Comparison of fuel efficiency between certified truck companies and all truck companies.

all truck companies  certified companies

<table>
<thead>
<tr>
<th>Weight Range</th>
<th>Before</th>
<th>After</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>w &lt; 1 ton</td>
<td>9.32 (km/L)</td>
<td>10.38 (km/L)</td>
<td>11% UP!</td>
</tr>
<tr>
<td>1 ≤ w &lt; 2</td>
<td>6.19  (km/L)</td>
<td>8.08  (km/L)</td>
<td>30% UP!</td>
</tr>
<tr>
<td>2 ≤ w &lt; 4</td>
<td>4.58  (km/L)</td>
<td>5.92  (km/L)</td>
<td>29% UP!</td>
</tr>
<tr>
<td>4 ≤ w &lt; 6</td>
<td>3.79  (km/L)</td>
<td>5.59  (km/L)</td>
<td>47% UP!</td>
</tr>
<tr>
<td>6 ≤ w &lt; 8</td>
<td>3.38  (km/L)</td>
<td>4.20  (km/L)</td>
<td>24% UP!</td>
</tr>
<tr>
<td>8 ≤ w &lt; 10</td>
<td>3.09  (km/L)</td>
<td>3.56  (km/L)</td>
<td>15% UP!</td>
</tr>
<tr>
<td>10 ≤ w &lt; 12</td>
<td>2.89  (km/L)</td>
<td>3.55  (km/L)</td>
<td>23% UP!</td>
</tr>
<tr>
<td>12 ≤ w &lt; 17</td>
<td>2.62  (km/L)</td>
<td>3.42  (km/L)</td>
<td>30% UP!</td>
</tr>
</tbody>
</table>

All truck companies: 2003 Data
Certified companies: 2007 Data