Keidanren's Activities
on Global Warming Issues

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What is Keidanren?

Keidanren (Japan Business Federation)

- A comprehensive economic organization in Japan
- 1,285 major companies, 127 industrial associations, and 47 regional economic organizations (as of March 29, 2012)
- Keidanren's mission is to accelerate growth of Japan's and world economy and to strengthen the corporations to create value to transform Japanese economy into one that is sustainable and driven by the private sector, by encouraging the idea of individuals and local communities.
- Regional partner of World Business Council for Sustainable Development (WBCSD)

Keidanren's Charter of Corporate Behavior For Gaining Public Trust and Rapport

1. Develop and provide socially beneficial and safe goods and services that give satisfaction to consumers and customers.
2. Engage in fair, transparent and free competition and ensure that transactions are appropriate. Also, maintain a sound and proper relationship with political bodies and government agencies.
3. In addition to communicating with shareholders, interact extensively with the public, and disclose corporate information actively and fairly. Also, protect and properly manage personal and customer data and other types of information.
4. Respect diversity, character and personality of employees and ensure a safe and comfortable working environment, thereby providing a sense of comfort and richness.
5. Proactively initiate measures in acknowledgment of environmental issues, the common challenges they pose to humanity and their importance to its existence and livelihood.
   5.1 Promote efforts to build a low-carbon society on a global scale.
   5.2 Promote efforts to build a material-cycle society.
   5.3 Take measures against environmental risks.
   5.4 Promote efforts to conserve biodiversity and sustainable utilization of resources.
6. Actively engage in community involvement activities including philanthropy as a "good corporate citizen."
7. Resolutely confront antisocial forces and organizations that pose a threat to the order and security of civil society and sever all relations with such individuals and groups.
8. In line with the globalization of business activities, comply with laws and regulations of the countries and regions where its business operations are based and respect human rights and other international norms of behavior. Also, conduct business by taking into consideration the local culture and customs as well as the interests of stakeholders, and contribute toward the development of the local economy and society.
9. Top management recognizes that it is its role to realize the spirit of this Charter and takes the lead in an exemplary manner to implement the Charter within the corporation and its entire corporate group, while encouraging its business counterparts to follow the same example. Furthermore, it should always try to keep abreast of what people inside and outside the corporation say and set up an effective mechanism throughout the corporation to implement the Charter.
10. In case the Charter is violated, top management should clarify both internally and externally that it will take charge to resolve the situation, determine the cause of infringement and make efforts to prevent similar violations in the future. At the same time, top management should promptly make full public disclosure, explain what has occurred, and, upon determining the source of competence and responsibility, impose strict disciplinary action against those held responsible, including top management itself.
Basic philosophy
A company’s existence is closely bound up with the global environment as well as with the community it is based in. Each company must aim at being a good global corporate citizen, recognizing that grappling with environmental problems is essential to its own existence and its activities.

Guidelines for corporate action
1. General management policies
   (1) to protect the global environment and improve the local living environment,
   (2) to take care to protect ecosystems and conserve resources,
   (3) to ensure the environmental soundness of products
   (4) to protect the health and safety of employees and citizens.
2. Establishing corporate organization
3. Concern for the environment: research, design, manufacturing, production, distribution, appropriate use, and disposal
4. Technology development
5. Technology transfers
6. Emergency measures
7. Public relations and education
8. Community relations
9. Overseas operations
10. Contribution to public policies
11. Response to global problems

http://www.keidanren.or.jp/japanese/profile/pro002/p02001.html

The History of Keidanren Voluntary Action Plan on the Environment

April 1991  Keidanren Global Environment Charter
➢ Each company must aim at being a good global corporate citizen, recognising that grappling with environmental problems is essential to its own existence and its activities.

July 1996  Keidanren Appeal on Environment
➢ We will take a voluntary, resolute and responsible approach in dealing with important tasks existing in the environmental field.

June, 1997  Keidanren Voluntary Action Plan on the Environment
➢ Global Warming Measures
➢ Waste Disposal Measures/the Establishment of a Sound Material-cycle Society

* December 1997  Adopted Kyoto Protocol @ COP3

The progress of the Action Plans is reviewed annually.
Follow-up of Keidanren Action Plan on the Establishment of a Sound Material-cycle Society

- Through promoting 3R activities (Reduce Reuse Recycle), the final disposal volume of industrial waste in fiscal 2010 was the level of decrease by about 89.4% compared to that in fiscal 1990.
- Keidanren set a new target in December 2010 to “reduce the 2015 industrial waste treatment amount to a level of 65% of 2000”.

Promoting Resources Reutilization

Resources Reutilization Rate of Industrial Waste

Cement industry’s efforts

- Accepted various wastes and by-products from other businesses
  - the iron and steel industry (various types of slag),
  - the electric utility industry (desulfurization plaster)
  - the tire industry (scrap tires)
  - the metal casting industry (casting sand)
  - local municipalities (sewage sludge and incineration ash)

Cement industry efforts toward the establishment of a sound material-cycle society

<table>
<thead>
<tr>
<th>Principal uses and consumption of wastes and by-products in cement industry (Unit: 1,000 tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Blast furnace slag</td>
</tr>
<tr>
<td>Coal ash</td>
</tr>
<tr>
<td>Sagger brick, Sludge</td>
</tr>
<tr>
<td>Waste oil from construction</td>
</tr>
<tr>
<td>Byproduct gypsum</td>
</tr>
<tr>
<td>Lime, Kaolinite, etc. (in scrap)</td>
</tr>
<tr>
<td>Non-ferrous slag</td>
</tr>
<tr>
<td>Wood chips</td>
</tr>
<tr>
<td>Waste plastics</td>
</tr>
<tr>
<td>Foundry sand</td>
</tr>
<tr>
<td>Steel slag</td>
</tr>
<tr>
<td>Recycled oil</td>
</tr>
<tr>
<td>Waste white clay</td>
</tr>
<tr>
<td>Waste oil</td>
</tr>
<tr>
<td>Waste tires</td>
</tr>
<tr>
<td>Meat and Bone meal</td>
</tr>
<tr>
<td>Coal mining waste</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Consumption per ton of cement (kg) | 401 | 407 | 423 | 436 | 448 | 451 |

A lot of waste, byproduct and garbage generated from industries and households actually consist of the same constituents as those found in cement. Taking advantage of the fact that the secondary waste, and only a negligible amount of dust, is produced in the process of cement manufacturing, the cement industry is striving to recycle waste materials and byproducts. Effective use of waste materials and byproducts not only contributes to saving natural resources but also helps with the shortage of final disposal sites for waste materials which is currently a nationwide problem. Consequently, the cement industry contributes significantly to a sustainable society. [http://www.jcassoc.or.jp/cement4pdf/3h_02.pdf](http://www.jcassoc.or.jp/cement4pdf/3h_02.pdf)
About 99% of the by-products involved in the production of steel are recycled. The recycling rate of steel cans is 85%, the top-ranking in the world.

Combinations of iron content of slag, a by-product of iron-making, with waste wood chips can artificially supply nutrients needed for the growth of marine plants. This restores life to a desertified sea, restoring a fertile sea with plenty of kelp and marine life.

Iron & Steel Industry’s Activities on Recycling

Management of Keidanren Nature Conservation Fund

✓ Fundraising
✓ Provision of support to environmental NGO’s nature conservation projects (1,040 projects for 20 years)

Activities of Keidanren Committee on Nature Conservation

(Latest important Theme: Biodiversity)

✓ Promotion of collaborations between companies and NGOs

✓ Development of awareness on nature conservation activities among member companies

“Declaration of Nature Conservation by Keidanren” (March 2003)
“Declaration of Biodiversity by Keidanren” (March 2009)
“Japan Business and Biodiversity Partnership” (October 2010)

✓ Participating in international conferences associated with the topic

Examples of KNCF Supported Projects

- Asia (Japan, South Korea and Vietnam): Survey/Awareness-raising Activities for Recovery of Endangered Spoon-billed Sandpiper
- Asia: The Asian waterbird Census - promoting waterbird and wetland conservation in the Asia-Pacific region
- Asia: Organisation of the “Asian Wetland Symposium (AWS2011)” (Kota Kinabalu, Malaysia, and Wuxi, China) and contribution to the Ramsar COP11 and the CBD/COP11
- Vietnam: Improvement of rice cultivation & environmental education
- Indonesia: Orangutan protection
- China: Enhancing the protection of Black-necked Crane and their wintering areas in Dashanbao Nature Reserve of Yunnan Province through the community involvement and poverty reduction programme
- China: Reforestation to prevent desertification
- Thailand: Mangrove plantation in Nakhon Si Thammarat Province
- Thailand: Distribution of environmental education book
- Ecuador: Conservation of ecosystem in Galapagos Islands
**Keidanren Declaration on Nature Conservation**

March 17, 2003

(Principles of the Declaration)
1. **To appreciate nature’s gifts and aim for corporate activities in harmony with the natural environment.**
2. **To act from a global perspective on the biodiversity crisis.**
3. **To act subjectively and steadily to contribute to biodiversity.**
4. **To promote corporate management for sustainable resource use.**
5. **To create an industry, lifestyle and culture that will learn from biodiversity.**
6. **To collaborate with relevant international and national organizations.**
7. **To spearhead activities to build a society that will nurture biodiversity.**

**Keidanren Declaration on Biodiversity**

March 17, 2009

<Objectives of the Declaration>
- To clarify the basic principle and the viewpoints for companies working on biodiversity.
- To enhance proactive participation of companies in biodiversity.
- To manage the biodiversity risks through companies’ actions in accordance with the principles of the declaration.

**Japan Business and Biodiversity Partnership**

Private Sector Engagement Initiative on Biodiversity (Draft)
A self-regulatory programme to reduce CO2 emissions (Social commitment)

Voluntarily participated by 34 industries in industry and energy-converting sectors

Each of the 34 industries which participate in the Keidanren Action Plan sets numerical targets for CO2 emissions reduction. Targets can be set on a basis of:
- CO2 emissions
- CO2 emissions intensity
- energy consumption
- energy intensity

Programme-wide target:
‘to suppress the CO2 emissions in 2008-2012 (on average) from industrial & energy-converting sectors below its 1990 level’

The progress is reviewed annually.
Establishment of the Action Plans by Each Individual Associations
Numerical Target Setting & Specified Measures
Actions for Climate Change Mitigation, etc.
Compilation (with Verification by the Keidanren Committees) & Publication as the ‘Keidanren Action Plan on the Environment’
Constitution of Social Commitment

Additional Measures for Further Actions to reduce CO2
Publication of the Results, Ensuring Credibility & Transparency

Implementation of the Action Plans by Each Individual Associations
International Cooperative Schemes (e.g. CDM, Joint Implementation, etc.)

Check the Progress of the Actions by the Actual Performance (e.g. CO2 Emissions & Energy Consumption in the Previous Year)
Review of the Follow-up Process by the Evaluation Committee to Improve Credibility and Transparency

P-D-C-A cycles of the Keidanren Action Plan

Review Process of the Keidanren Action Plan

The assessment of progress is conducted every year. The overall performance is publicised by Keidanren Secretariat.

Company
Company
Company
Company
Company
Company

An Industrial Association
An Industrial Association
An Industrial Association
An Industrial Association

Data
Data
Data
Data

Calculation/Evaluation
Review of the Plan

Aggregate data
Aggregate data
 Aggregate data

Keidanren Secretariat
Evaluation Committee for the Plan
Governmental Councils

Peer Pressure
Public Pressure

Commitment
Expert Pressure

The role of Keidanren Action Plan in Japanese Government’s Climate Change Policy

Quoted in the Government’s Kyoto Protocol Target Achievement Plan (Government Decision: 28 March 2008)

“These voluntary action plans by business operators have thus far produced results and the voluntary action plans of Nippon Keidanren are, in particular, playing a central role in countermeasures in the industrial community. The advantages of a voluntary instrument include the ease of selection of superior countermeasures for each actor based on its originality and ingenuity, the likelihood of providing incentives to pursue aggressive targets, and no procedural costs for both the Government and implementing actors. It is expected that these advantages will be further exploited in voluntary action plans by business operators.”
Follow-up of the Keidanren Action Plan on Climate Change

- The Keidanren Action Plan on Climate Change started in 1997, which covers 34 major industries whose CO2 emissions account for 44% of that of Japan’s. Each industry sets its own target.
- The main reason of reductions in CO2 emissions is to improve CO2 emissions per unit of output (CO2 intensity).
- The reason of decrease of emissions per unit of output is the consequence of the steady accumulation of industry efforts in such areas as:
  - technological innovation,
  - the installation of energy-saving and high-efficiency facilities,
  - fuel conversion,
  - the recovery and use of waste energy,
  - improvements in the operation of facilities and equipment.

**Table: Base year: 1990**

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>2010</th>
<th>change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total(Reduction in CO2 emissions)</strong></td>
<td></td>
<td>-12.3%</td>
<td></td>
</tr>
<tr>
<td><strong>Change in production</strong></td>
<td></td>
<td>5.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Change in CO2 coefficient</strong></td>
<td></td>
<td>-1.5%</td>
<td></td>
</tr>
<tr>
<td><strong>Change in CO2 emissions per production</strong></td>
<td></td>
<td>-15.8%</td>
<td></td>
</tr>
</tbody>
</table>

**Examples of Progress**

CO2 emissions from manufactures is reducing steadily.

<table>
<thead>
<tr>
<th>Industry</th>
<th>1990</th>
<th>2010</th>
<th>change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Iron &amp; Steel</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 emissions (Mt-CO2)</td>
<td>200.6</td>
<td>186.0</td>
<td>▲7.3%</td>
</tr>
<tr>
<td>CO2 intensity (1990=100)</td>
<td>100</td>
<td>90</td>
<td>▲10%</td>
</tr>
<tr>
<td><strong>Paper</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 emissions (Mt-CO2)</td>
<td>25.4</td>
<td>18.4</td>
<td>▲27.5%</td>
</tr>
<tr>
<td>CO2 intensity (1990=100)</td>
<td>100</td>
<td>76</td>
<td>▲24%</td>
</tr>
<tr>
<td><strong>Chemical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 emissions (Mt-CO2)</td>
<td>64.1</td>
<td>60.2</td>
<td>▲6.1%</td>
</tr>
<tr>
<td>CO2 intensity (1990=100)</td>
<td>100</td>
<td>76</td>
<td>▲24%</td>
</tr>
<tr>
<td><strong>Cement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 emissions (Mt-CO2)</td>
<td>27.4</td>
<td>16.4</td>
<td>▲40.1%</td>
</tr>
<tr>
<td>CO2 intensity (1990=100)</td>
<td>100</td>
<td>100</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Automobiles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 emissions (Mt-CO2)</td>
<td>8.44</td>
<td>4.67</td>
<td>▲44.6%</td>
</tr>
<tr>
<td>CO2 intensity (1990=100)</td>
<td>100</td>
<td>58</td>
<td>▲44%</td>
</tr>
</tbody>
</table>

International Comparisons of Energy Efficiency in Industrial and Energy-conversion Sectors

World-leading levels of energy efficiency have been achieved in participating industries. ➔less energy, cost-cut, competitiveness and so on.
World-leading levels of energy efficiency in participating industries has lead to little reduction potential.

Circle of Widening Voluntary Efforts in the Commercial, Residential, Transportation, and Other Sectors

**Households**
1. Provision of energy-efficient products and services
2. Provision of energy-efficient measures for customers
3. Environment education for employees
4. Practice Cool Biz and Warm Biz
5. Promotion of commuting by public transportation
6. Environment education in schools and other institutions

**Offices**
1. Strict management of air conditioning temperature
2. Shifting of OA equipments and lighting fixtures to energy-saving models
3. Setting of PCs to energy-saving mode; restriction on the use of electronic office equipment
4. Introduction of energy-efficient equipment and solar power
5. Switching lights off during lunch breaks
6. Less use of elevators
7. Installation of insulated glass, light-filtering glass

**Transportation**
1. Joint shipping by all group companies
2. Consolidation and centralization of distribution bases, storage facilities
3. Collaboration between distribution companies and their clients
4. Mutual supply of products
5. Use of larger ships and vehicles
6. Modal shift to transportation by railroad and ships
7. Introduction of fuel-efficient cars, natural gas, and energy-efficient vehicles (including replacement) etc.

**Forest preservation**
1. Use of domestic thinned woods for cushioning materials, business cards, brochures, CSR and environmental reports, mulching of fields, etc.
2. Promotion of biomass energy use
3. Use of rapid growth trees for truck flooring
4. Maintenance and development of company-owned forests
5. Promotion of local governments and companies (tree planting, thinning, and undergrowth clearing)
6. Participation in local green funds
7. Afforestation activities
8. Efforts toward the restoration of tropical forests

International Comparison on Efficiency

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>0.74</td>
<td>0.43</td>
</tr>
<tr>
<td>Russia</td>
<td>0.23</td>
<td>0.18</td>
</tr>
<tr>
<td>Canada</td>
<td>0.25</td>
<td>0.14</td>
</tr>
<tr>
<td>US</td>
<td>0.22</td>
<td>0.09</td>
</tr>
<tr>
<td>China</td>
<td>0.20</td>
<td>0.06</td>
</tr>
<tr>
<td>Korea</td>
<td>0.19</td>
<td>0.16</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.14</td>
<td>0.21</td>
</tr>
<tr>
<td>India</td>
<td>0.09</td>
<td>0.15</td>
</tr>
<tr>
<td>OECD</td>
<td>0.10</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Source: IEA
Keidanren’s Commitment to a Low Carbon Society

Corporate Operations
- Industrial Sector
- Business Sector
- Transportation Sector

Domestic Measures
- Set reduction targets assuming widespread implementation of the best available technologies for the low carbon path.
  - Demonstrate viability of targeted reduction levels.
- Development and commercial adoption of world-leading energy-saving products and services
- Efforts to educate employees and provide information to consumers
- Stronger collaboration with consumers, etc.

International Contributions
- Transfers of advanced technology and expertise to motivated developing countries in compliance with international rules
- Reinforcement of private-led undertakings in international cooperation

Development of Innovative Technologies
- Formulation and pursuit of sector-specific, medium- to long-range technology development road maps leading to the creation of a low carbon society on a global scale

Steel Industry’s action plan to the Low Carbon Society

(1) 2020

Eco process
- Aiming for a further improvement in energy efficiency of steel production processes, which are already the highest in the world
- Goal is reduction of 5 million tons

Eco product
- By supplying high-performance steel, which is vital to creating a low-carbon society, Japanese steelmakers contribute to cutting CO2 emissions when finished products made of this steel are used.

Eco solution
- Contribute worldwide by transferring the world’s most advanced energy-conserving technologies to other countries (mainly developing countries) and increasing the use of these technologies.

(2) Long term~ Breakthrough R&D

Development of revolutionary steelmaking processes (COURSE50)
- Cut CO2 emissions from production processes about 30% by using hydrogen for iron ore reduction and collecting CO2 from blast furnace gas. The first production unit is to begin operations by about 2030.*
- Goal is widespread use of these processes by about 2050 in line with timing of updates of existing blast furnace facilities. *Assumes establishment of economic basis for CO2 storage infrastructure and creation of a practical unit using these processes.

The Effects of Electric Vehicles

- CO2 emissions is low(Approximately 30% compared to gasoline vehicles).
- Total efficiency is high.
- Fuel cost is low(approximately 1/4 to 1/10 of gasoline vehicles).

1. If next-generation automobiles such as electric vehicles become more popular, CO2 emissions reductions can be expected.
2. If all mini-vehicles in Japan are replaced with electric vehicles, CO2 emissions are expected to be reduced by approximately 25 million t-CO2 per year, which is equivalent to approximately 2% of CO2 emissions in Japan, although CO2 emissions form electricity would increase by 14 million t-CO2.
The Cement, Power and Steel Working Group will build upon the scope of work introduced under corresponding Asia Pacific Partnership Task Forces.

**KAYA Identity**

\[ \text{CO2 Emission} = \frac{\text{Energy Efficiency}}{\text{Energy Consumption}} \times \frac{\text{Carbon Intensity to Energy}}{\text{CO2 emissions}} \times \frac{\text{GDP}}{\text{Energy Consumption}} \times \frac{\text{Population}}{\text{Fundamental Rights}} \]

- **Energy Efficiency**
  - Energy Efficiency of Components
  - Innovative Technology including materials
  - Social System

- **Carbon Intensity to Energy**
  - Low Carbon Primary Energy
    - Nuclear
    - Renewable (Solar, Wind, Biomass, etc.)
    - Coal with CCS

- **GDP**

- **Population**

- **Fundamental Rights**
  - Employment
  - Income
  - Tax
  - Social Security etc.

**CO2 Emissions in Road Transportation**

\[ \text{CO2 Emissions} = \frac{\text{real fuel efficiency}}{\text{running factor in catalog}} \times \text{CO2 Emission Factor} \times \text{Travel} \]

- Improvement of Car Technologies
- Improvement of Traffic Flow
- Less carbon Fuels
- Modal shift
- Technologies Dissemination
- Improvement of infrastructure
- CO2-Free Power Generation
- Eco-drive

*the Japan Automobile Manufacturers Association, Inc. (JAMA)*
Thank you very much for your attention!