

# Energy Saving/Prevention of Global Warming

Logistics

## Thorough logistics in response to quantity fluctuations

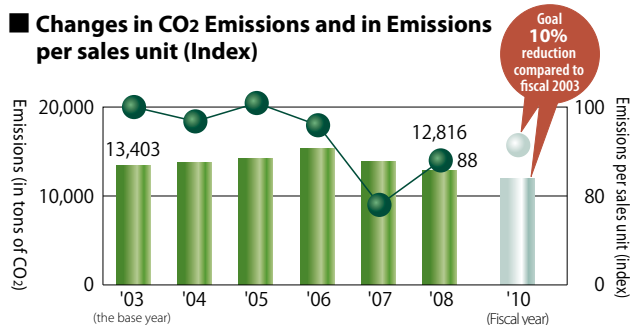
To reduce CO<sub>2</sub> emissions during transportation, we streamlined cargo, dispatching appropriate production quantities, and determining loading capacity based on the "3 Gen-ism" ("Genchi", "Genbutsu", and "Genjitsu", which are translated as "actual locations", "actual materials" and "actual situations", respectively) and tried to "improving efficiency of loading" Every year we set challenging goals and move forward.

Also we reduced CO<sub>2</sub> emissions by expanding "Localization of productions among customers" as a "shortening of logistics flow lines".

### Three Pillars for Activities Designed to Reduce CO<sub>2</sub> Emissions from Logistics Operation

1. Actions to increase efficiency and to reduce the number of vehicles dispatched
2. Shortening flow line through route alterations and localization of production sites
3. Pursuing transportations producing less CO<sub>2</sub> emissions

### Changes in CO<sub>2</sub> Emissions and in Emissions per sales unit (Index)



\*CO<sub>2</sub> Emissions per sales unit (Index) takes the figure for CO<sub>2</sub> emissions in fiscal '03 as 100.  
\*Applicability: Delivery and mid-process logistics

## Resource Circulation

Through effective resource utilization and recycling of goods, we pursue production activities without material discarded.

Highlight of fiscal 2008

- **Nonconsolidated:** We achieved reducing materials discarded by 13% compared with fiscal 2003
- **Consolidated:** We achieved a 23% reduction in materials discarded per sales unit versus a goal of 5% from fiscal 2003 to fiscal 2010.

Development/Design

## Promoting new recycling techniques

Our company promotes design that keeps recycling in mind, and in fiscal 2008 we focused our efforts on high quality material recycling technology to promote reuse of high polymer materials such as rubber products. We are accumulating technology that enables mid process recycling technology to be used in ELV\* parts recycling.

\*End of Life Vehicle

### Technological Development for ELV Parts Recycling

Key items	Approaches
New recycling	<ul style="list-style-type: none"> <li>• New recycling techniques (high quality material recycling)</li> <li>• Techniques to separate composite materials</li> </ul>
Installing parts made of recycled materials in vehicles	<ul style="list-style-type: none"> <li>• Development of applications for recycled materials</li> <li>• ELV parts recycling technology</li> </ul>
Designing products that are easy to recycle	<ul style="list-style-type: none"> <li>• Easy-to-recycle materials, and innovative component units</li> <li>• Easy-to-dismantle designs for products</li> </ul>

Production

## Reducing Waste and Materials Discarded

To handle resource circulation in the production stage, we are moving forward with 3 reduction activities: those of "landfill waste", "incinerated waste", and "material discarded".

We are making great improvements with respect to materials discarded, reductions by desulphurization of graft hair affixed EPDM\* rubber and expanding in-house re-making pellets of resin.

\*Ethylene propylene rubber

Case study

### Receiving the GSC prize for desulphurization

At our company we developed technology to recycle the EPDM rubber products that had heretofore been problematic in terms of reuse and resource conversion into high quality recycled rubber. Through this we are reusing mid-production process waste materials and recycling them into raw materials for the same sort of products.

Our technical development and mass production achievements were evaluated, and in 2008 we received the GSC\* prize from the Green & Sustainable Chemistry Network, Japan in which the Ministry of Economy, Trade and Industry (Observer) participates that centers on Japan Chemical Innovation Institute.



\*Green Sustainable Chemistry

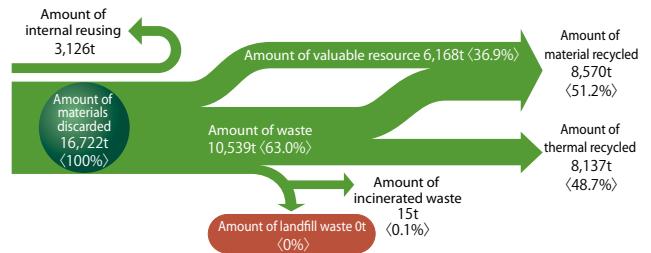
Logistics

## Reduction of packaging materials through shipping carton storage/management and local production

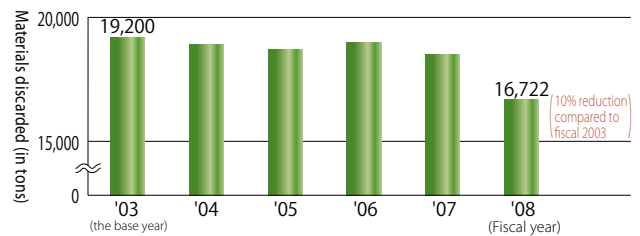
By extensively readjusting the necessary disposable packaging materials used in reusable shipping cartons, in fiscal 2008 we achieved our difficult goal of 109t, which makes a 15% reduction compared to the previous fiscal year.

Furthermore, we thoroughly improved the storage state of shipping cartons, and by maintaining the washed and clean state of returned shipping cartons we strove to eliminate the necessity of laying dirt-blocking paper on the bottoms of cartons. Also, by advancing localization of production among customers and reducing lead times, we diminished the number of tumblers. This also led to a reduction in packaging materials. We will continue to promote this effort by setting up challenging targets every year while targeting "Zero" disposable packaging materials as our ultimate goal.

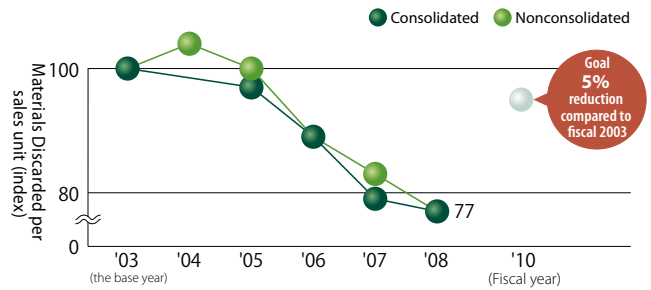
### Amount of Waste Generated / Waste Disposal Situation (Results for Fiscal 2008)



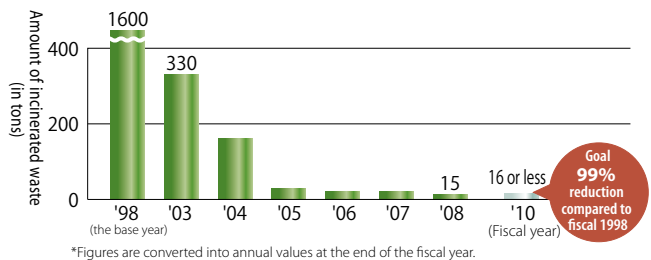
### Changes in Amount of Materials Discarded



### Changes in Amount of Materials Discarded per sales unit (index)



### Changes in Amount of Incinerated Waste



### Changes in Use of Product Packaging Materials and Usage per sales unit (index)

