TOYOTA

Toyota’s Approach to Sustainable Manufacturing

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Toyota’s North American Growth

**Investment (In Billions)**

- 90: $5
- 92: $5
- 94: $10
- 96: $15
- 98: $20
- 00: $25
- 02: $30
- 04: $35
- 06: $40
- 08: $45

- Peak: $43,624

**Employment**

- 90: 5,000
- 92: 15,000
- 94: 25,000
- 96: 35,000
- 98: 45,000
- 00: 55,000
- 02: 65,000
- 04: 75,000
- 06: 85,000
- 08: 95,000

- Peak: 95,000

**Production (In Millions)**

- 90: 0.5
- 92: 1.0
- 94: 1.5
- 96: 2.0
- 98: 2.5
- 00: 3.0
- 02: 3.5
- 04: 4.0
- 06: 4.5
- 07: 5.0

- Peak: 5.0

**Local Purchasing (In Billions)**

- 90: $1.0
- 92: $1.5
- 94: $2.0
- 96: $2.5
- 98: $3.0
- 00: $3.5
- 02: $4.0
- 04: $4.5
- 06: $5.0
- 07: $5.5

- Peak: $5.5

**Toyota’s North American Growth**
“To become the most admired and respected automobile manufacturer by demonstrating continuous environmental performance improvements resulting in environmental leadership and sustainability.”
Toyota’s Environmental Initiatives

- 1990
- 1991 - 1995
- 1996 - 2000
- 2001-2010

1963
Production Environment Committee est.

1992
Toyota Environmental Committee est.
Earth Charter

1998
Sustainability Report

2000
Earth Charter revised

1999
Zero Landfill Waste

5 Year Action Plans
Annual Plans
Environmental Performance Improvements

Plan
Action
Check
Do
Goals of Enhanced Environmental Management System (EEMS)

- Compliance / No Complaints
- Compliance With Law
- Proactive Prevention
- Improvement of Environmental Performance
- Minimization of Environmental Risk
- World No.1
- Regional No.1
Environmental Management System
Energy Consumption

Average Energy Consumption per Vehicle Produced

<table>
<thead>
<tr>
<th>Year</th>
<th>MMBTU/Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>9.4</td>
</tr>
<tr>
<td>FY02*</td>
<td>8.6</td>
</tr>
<tr>
<td>FY03*</td>
<td>8.3</td>
</tr>
<tr>
<td>FY04*</td>
<td>7.8</td>
</tr>
<tr>
<td>FY05*</td>
<td>7.1</td>
</tr>
<tr>
<td>FY06*</td>
<td>6.6</td>
</tr>
<tr>
<td>FY07*</td>
<td>6.7</td>
</tr>
<tr>
<td>FY08*</td>
<td>6.9</td>
</tr>
</tbody>
</table>

27% Reduction Since 2000

*Fiscal Year (FY): Runs April-March
CO2 Reduction

**Toyota U.S. CO₂ Metric Tons per Vehicle Produced**

- **2000**: 1.20 metric ton/vehicle
- **2002**: 1.09 metric ton/vehicle
- **2003**: 1.05 metric ton/vehicle
- **2004**: 0.99 metric ton/vehicle
- **2005**: 0.94 metric ton/vehicle
- **2006**: 0.96 metric ton/vehicle
- **2007**: 0.92 metric ton/vehicle

*23% Reduction Since 2000*

*2012 U.S. DOE Climate VISION program target*
Example of Reducing CO2 Emissions

REDUCE BOOTH LENGTH

Conventional booth

Development and introduction of slim robots “simple slim”

New booth

ELIMINATE PRIMER DRYING OVEN

Waterborne “3-Wet” painting process introduced

Electrocoating Bath

Drying Oven

Other

CO2 Emission Volume

Past

Present

15%
ENERGY STAR Sustained Excellence

• Energy use 21 percent
• CO2 emissions 20 percent
• Equal to 17,000 U.S. homes
• Savings of $26 million
Recycling & Improved Resource Use

Average Kilogallons Water Used per Vehicle Produced

[FY04*] 0.96
[FY05*] 0.85
[FY06*] 0.83
[FY07*] 0.80
[FY08*] 0.84

26% Reduction Since 1999

*Fiscal Year (FY): Runs April-March
Recycling & Improved Resource Use

Nonsaleable Waste per Vehicle

<table>
<thead>
<tr>
<th>Year</th>
<th>Waste per Vehicle (kg/vehicle)</th>
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</thead>
<tbody>
<tr>
<td>FY06*</td>
<td>40.0</td>
</tr>
<tr>
<td>FY07*</td>
<td>27.9</td>
</tr>
<tr>
<td>FY08*</td>
<td>21.6</td>
</tr>
</tbody>
</table>

46% Reduction Since FY06

*Fiscal Year (FY): Runs April – March
Zero Landfill Achievement

“The 5 Rs”

Refine, Reduce, Reuse, Recycle and Recover

North American plants achieved zero landfill
Compost Process
Compost Process

1,571 meals for needy families

OR

about $3,500 worth of food
HQ Office is now Zero Landfill

We are now Zero Landfill

TEMA Waste Generation & Recycling

<table>
<thead>
<tr>
<th>Material Generated (tons)</th>
<th>Yearly Waste Generated (Actual)</th>
<th>Recycled Material (Yearly Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2003</td>
<td>266.9</td>
<td>5.64</td>
</tr>
<tr>
<td>FY2004</td>
<td>212.09</td>
<td>104</td>
</tr>
<tr>
<td>FY2005</td>
<td>218.57</td>
<td>110.786</td>
</tr>
<tr>
<td>FY2006</td>
<td>172.4875</td>
<td>69.95</td>
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<tr>
<td>FY2007</td>
<td>175.07</td>
<td>105.219</td>
</tr>
<tr>
<td>FY2008</td>
<td>145.18</td>
<td>145.18</td>
</tr>
<tr>
<td>FY2009</td>
<td>220</td>
<td>57.79</td>
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</table>

Fiscal Year

0 50 100 150 200 250 300

Material Generated (tons)
Line-side Waste Segregation
**Environmental Kaizen Stories**

**BEFORE**  
*TMMWV used to throw out plastic pipe caps*

**NOW**  
*Recycle 100%  
Equal to more than three tons, the weight of a Tundra*

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**BEFORE**  
*Various plastics were either recycled or disposed*

**NOW**  
*All plastics – 140 tons or 280,000 pounds annually – from TMMWV is given to a local disabled center who sells the plastic to a local recycling center*

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**EQUAL TO 65 Siennas**
Sustainable Plant Activities

• **TMMMS:** One of Toyota’s four Global Sustainable Plants
  
  *To build the world’s most popular gas/electric hybrid vehicle – the Toyota Prius*

  *Geothermal, reforestation and solar energy*

• **TMMAL:** Also leading the way in North America
  
  *Install 5 kilowatt solar panel*

  *Perform reforestation and improvement activities*
Toyota’s Partnerships

**Audubon Society (TogetherGreen)**

A program to fund conservation projects, train environmental leaders, and offer volunteer opportunities to significantly benefit the environment.
4-H (4-H2O)

4-H2O will connect youth to water conservation issues and environmental engagement. Six states will participate where Toyota has operations (CA, KY, MI, MS, TX and WV)
World Wildlife Fund

Partnership to help communities including the Galapagos on environmental issues such as energy sustainability, oil recycling, ISO 14000 training and waste management
Wildlife Habitat Council

Cooperation to enhance and restore wildlife habitats in local communities
Business Partners - LEEDing the Way
Empowering Team Members

Encourage team members to take ideas home
Thank you

Kevin M. Butt
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