



# Greening Your Business

A look at Subaru of Indiana Automotive  
The Industry Leader in Environmental Stewardship

Presented by:

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Elwood Haynes in his first car in 1894

Photo courtesy of the Elwood Haynes Museum Archives, for "Elwood Haynes," an Indiana Local Legacies project

# Aerial View of SIA



# SIA Model Lineup



OUTBACK



LEGACY

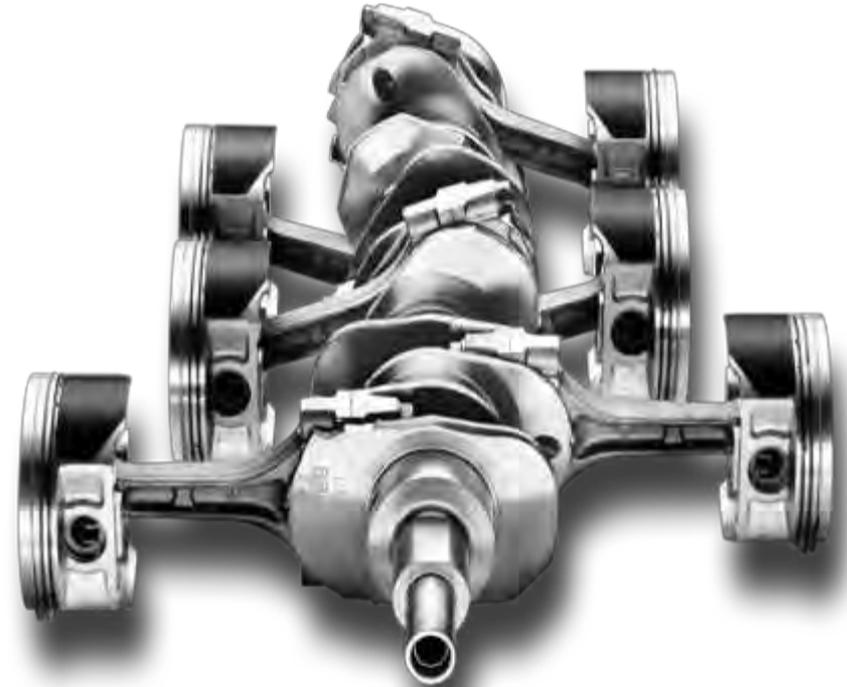


TRIBECA



CAMRY

# Subaru Core Technology



# SIA World Exports



# Importance of Product Quality

Subaru is the ONLY brand with the highest possible crash test rating for EVERY model

**IIHS TOP Safety Pick**

**NHTSA 5 Star Crash Test**

**Consumer Reports “Recommends” ALL Subaru products**

**Only 13 models achieved top safety pick – Subaru took 3 of them!**



**Impreza**



**Outback**



**Legacy**



**B9 Tribeca**



**Forester**

# Environmental Awards for SIA



2007



2003



2006



2006



**SUBARU of INDIANA AUTOMOTIVE**

**IE**  
INDUSTRIAL  
ENGINEER

Engineering & management solutions at work

**A CLEAN,  
GREEN  
SET OF WHEELS**

Indiana auto plant goes completely waste-free

# SIA Environmental Milestones

1994 – Banned all indoor smoking

1998 – Achieved ISO 14001 certification

2002 – Began operation of on-site solvent recovery system that produces dry still bottoms

2003 – Designated a Backyard Wildlife Habitat by the National Wildlife Federation

2004 – Achieved Zero Landfill status



**REDUCE**

**REUSE**

**RECYCLE**



# REDUCE

- ❑ 55% Reduction in TRI Emissions since 2000
- ❑ 20% Reduction in CO2 Emissions since 2000
- ❑ 47% Reduction in lbs/unit of Steel since 2000
- ❑ 45% Reduction Waste Generated since 2000  
(459 lbs/unit to 251 lbs/unit)

# Reduction Projects



**Solvent Recovery System**  
*79% Reduction  
in Waste Discharged*



**Oil Purification**  
*6,000 gal. Annual Reduction  
In Waste Discharged*

# REUSE

<input type="checkbox"/> <u>Engine Plant Return Project*</u>	<u>1,930 tons</u>
<input type="checkbox"/> <u>Pallets</u>	<u>812 tons</u>
<input type="checkbox"/> <u>Oil &amp; Oil Absorbent</u>	<u>22 tons</u>

**Total 2007 = 2,764 tons\*\***

\*Includes cardboard, styrofoam, steel braces, and plastic

\*\*Does not include standard returnable packaging or containers

# Reuse Projects



**Plastic Caps Returned to Japan**



**Plastic Engine Trays Returned to Japan**



**Brass Lug Nuts Returned to Supplier**

# RECYCLE

<input type="checkbox"/> <u>Steel</u>	13,142 tons
<input type="checkbox"/> <u>Cardboard &amp; Paper</u>	1,448 tons
<input type="checkbox"/> <u>Various Plastics &amp; Foams</u>	194 tons
<input type="checkbox"/> <u>Pop Cans &amp; Bottles</u>	20 tons
<input type="checkbox"/> <u>Solvent Soaked Rags</u>	10 tons
<input type="checkbox"/> <u>Light Bulbs</u>	4 tons

**Total 2007 = 14,818 tons**

**Recycling Rate = 99.8%**

# Recycle Projects



**Cardboard/Paper Recycled**



**Pop Cans and Bottles, Newspaper**



**Styrofoam Sheets Recycled**

# SIA 2007 Recycling Benefits

## 29,200 MATURE TREES

This represents enough saved timber resources to produce more than 361,788,000 sheets of newspaper!



## 670,000 GALLONS OF OIL

This represents 15,952 barrels of No.2 fuel oil. This is enough energy to heat and cool more than 3,321 homes for one year!



## 53,116,000 KW-HRS OF ELECTRICITY

This is enough power to fulfill the annual electricity needs of more than 6,478 homes!



In 2007, SIA recycled  
13,142 tons of scrap metal  
1,448 tons of cardboard & paper,  
903 tons of wood

## 34,700 GALLONS OF GASOLINE

This is enough gasoline to drive 971,600 miles in A Subaru.



## 34,500 CUBIC YARDS OF LANDFILL AIRSPACE

This represents enough airspace to fulfill the municipal waste disposal needs for a community of 44,298 Americans for one year!



The recycling of this quantity of packaging and raw materials avoided their manufacturing and disposal, thereby conserving<sup>1</sup>:

## 10,136,000 GALLONS OF WATER

This represents enough water to meet the daily freshwater needs of 135,147 Americans



<sup>1</sup> Each ton of fiber recycled conserves: 17 mature trees; 463 gallons of oil; 24 gallons of gasoline; 4,100 kw-hrs of electricity; 7,000 gallons of water; 3.5 cubic yards of landfill airspace. Each ton of pallets recycled conserves 5.1 mature trees and 3.5 cubic yards of landfill airspace. Each ton of scrap metals recycled conserves 3,590 kw-hrs of electricity and 2.0 cubic yards of landfill airspace. Sources: U.S. Environmental Protection Agency, Institute of Scrap Recycling Industries, Gaylord Corporation, Swiss Federal office of Environment and Waste Management.

# How SIA Achieved Zero Landfill Status

- Associate Kaizen Suggestions
  - generating cost savings by eliminating waste (muda)
  - creative ideas for re-use and recycling
  - proactive involvement in environmental management system



Paper Bottles  
Cans Trash



NO SMOKING

NO SMOKING





# How SIA Achieved Zero Landfill Status

- Cooperation of Suppliers
  - elimination of unnecessary packaging
  - investment in re-usable containers
  - switch to recyclable packaging materials
  - 81% are ISO 14001 certified





# How SIA Achieved Zero Landfill Status

- Assistance of Allegiant Global
  - on-site collection/sorting of recyclable materials
  - advice on recyclable/reusable materials
  - creation of markets for recyclable materials





# How SIA Achieved Zero Landfill Status

- Support of Parent/Affiliated Companies
  - creation of Subaru North American Environmental Committee
  - setting of annual environmental targets
  - all Subaru affiliates in North America are ISO 14001 certified

# North American Energy Conference at SIA 2007



# Energy Conservation / CO<sub>2</sub> Reduction

## Major Projects (2006-2007):

Reduced Excess Lighting	228 tons of CO <sub>2</sub> reduction
Reduced Oven Run Time	4,598 tons of CO <sub>2</sub> reduction
Lowered Plant Air Pressure	663 tons of CO <sub>2</sub> reduction
Eliminated Air Leaks	215 tons of CO <sub>2</sub> reduction
Installed Air Shut-off Valves	17 tons of CO <sub>2</sub> reduction

5,721 tons of CO<sub>2</sub> reduction

# Energy Conservation / CO<sub>2</sub> Reduction

## Ongoing Projects:

- Implemented staggered starting of equipment
- Installed soft-start apparatus on equipment
- Began utilizing variable pitch fans in paint shop
- Increased number of light switches (reduced lighting bank size)
- Changed lighting ballast
- Replaced incinerators
- Closed paint oven doors between shifts

# Subaru S★T★A★R★S★ Program

## Students & Teachers Achieving Recycling Success

- ★ An SIA outreach program to encourage local high schools and high school students to follow the 3 R's – Reduce, Reuse, and Recycle
- ★ Started in 2005, currently over 3,600 students are participating
- ★ Schools compete for the top award in five categories:
  - Waste Reduction
  - Recycle Rate
  - Creative Reuse of Waste
  - Community Outreach
  - Promotion

# Subaru S★T★A★R★S★ Program













**SMA**







# Impact of Environmental Stewardship on the Customer

**“I drive a Subaru, and have been pleased with the safety that it has provided my wife and I in the bad winter weather in upstate, and its reliability has been great. It makes me even more proud to drive a Subaru after realizing the company’s commitment to reducing their environmental impact.”**

***-Baloghblog, February 19, 2007***

**“When making your decision about what sort of vehicle you plan to purchase next it seems important to include other factors like reliability, safety and quality design. We’d like to add another to your list: Environmentally Responsible Manufacturing. How much landfill waste will the production of your next car have created before you even drive it off the lot? If you select a Subaru than you can safely say none.”**

***-GroovyGreen.com, February 16, 2007***

**“Interface- a world leader in the commercial interiors industry- maintains a fleet of light-duty vehicles. Interface recently chose to add 100 Subaru Outback Limited Wagon 2.5i models to its fleet during an 18-month period.”**

***-Drive Magazine, Winter 2007***

*Go for it!*

*Reduce, reuse, recycle*

*Energy conservation*

*Employees are your best  
source for Kaizen ideas*

*Natural is nice and  
noteworthy*



 SUBARU