TOYOTA NORTH AMERICAN

2013 ENVIRONMENTAL REPORT

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Welcome to Toyota's 2013 North American Environmental Report. Here you will find information about our environmental activities in the United States, Canada and Mexico.

Information, data and stories cover all aspects of the vehicle life cycle – research and development, manufacturing, logistics and sales. We also describe our relationships with suppliers and dealerships, as well as how we support our communities through environmental stewardship and education initiatives.

This report covers the Toyota, Lexus and Scion brands in North America. The period covered in this report is fiscal year 2013 (April 1, 2012 through March 31, 2013) and product model year 2013. If data is presented with different dates, this is clearly indicated.

We listened to your comments and suggestions about last year's report and used them to improve this report. We would appreciate your feedback. You may participate in a survey found here.

This report was published in November 2013.

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Dear Readers,

At Toyota, we strive for a better tomorrow. We look to a future where mobility can meet the needs of society without impacting the environment. We hope to be a role model for others as we move closer to that sustainable future.

As I write this, Toyota continues to grow in North America. So does our responsibility to reduce our environmental footprint. We believe in continuous improvement in all facets of our operations. This includes the smallest of improvements to major technology breakthroughs. We also believe in sharing progress with others in the industry, as well as with the communities in which we do business. We want to understand how people imagine environmental sustainability in the future. That's why we strive for a high level of transparency with this report and encourage an open dialogue with our stakeholders.

Still, we have far to go to address the pressing challenges of our time. Global climate change. Resource depletion. Water scarcity. Habitat destruction.

These are critical issues facing communities in North America, and the same issues we identified – through a comprehensive environmental materiality assessment – as our core areas of focus for the North American region. We are now developing strategies for each of these areas that will not only improve our environmental performance throughout the region, but also will help us create positive environmental results in our communities.

We are able to do all this more effectively through the newly-created Toyota North American Environmental organization. For the first time, Toyota's North American companies are coordinating their environmental activities at every level and setting strategic direction with one voice. This was a big step forward for us, and has positioned us to tackle these core issues more quickly and efficiently.

This is an exciting time for Toyota and I am honored to head up this new organization. Going forward, we will be setting short- and long-term targets for all of Toyota's North American companies in a comprehensive Environmental Action Plan – beyond those already set by each individual company. And we will be communicating more with our business partners and stakeholders, to get them involved, to keep them informed, and to learn from them.

During 2013, we saw many notable accomplishments for our vehicles and in our operations. Some examples include:

In North America, we exceeded the two million mark in Toyota and Lexus hybrid vehicle sales, while globally, Toyota exceeded the five million mark. Toyota estimates that the use of those five million hybrids around the world has avoided 34 million tons of CO_2 emissions.

We introduced the all-new 2013 Avalon Hybrid, the first Toyota vehicle to be fully styled, developed and built in North America. It is also one of the more fuel-efficient vehicles in the mid-size segment, achieving an impressive EPA-estimated 40 mpg.

The U.S. Environmental Protection Agency presented Toyota's manufacturing division with their ninth ENERGY STAR award, and presented our U.S. sales and logistics division with their third WasteWise award.

Ten of our North American manufacturing plants have achieved "zero waste to landfill." Over the last decade, our returnable packaging program has seen cumulative savings of 308 million pounds of wood and 185 million pounds of cardboard.

We are saving 61 million gallons of water annually through the implementation of four reverse osmosis concentrate recovery systems.

We have a total of 36 Toyota and Lexus dealerships certified to LEED® in the U.S. and Canada, a testament to their commitment to sustainable building design, construction and maintenance.

And finally, we have many examples of environmental philanthropy and volunteerism, including the continuation of our groundbreaking partnership with World Wildlife Fund in the Galápagos Islands, an extension of our signature partnership with the National Audubon Society and the TogetherGreen™ program, and improvements to biodiversity at our facilities through our partnership with Wildlife Habitat Council and their "Corporate Lands for Learning" and Wildlife at Work" programs.

The following pages cover these stories and more. Each year, we also feature a different Toyota Way concept. This year, we present examples of ***yokoten*** – how we share lessons learned across the organization to improve environmental performance. We invite you to learn more about the Toyota Way and how it drives continuous improvement in all aspects of our business.

I am pleased to present Toyota's 2013 North American Environmental Report. I hope you enjoy our story.

Kevin M. Butt
Regional Environmental Director,
Toyota North American Environmental
November 2013

2013 At A Glance

Vehicles	• In the United States, Toyota is the most fuel-efficient full-line automotive manufacturer.
	• Toyota's Prius *c* earned the title of Greenest Car of the Year from the ACEEE in their annual Greenest Vehicles list. Prius and Prius Plug–in tied for third.
	• The 2013 Avalon Hybrid is the first Toyota vehicle to be fully styled, developed and built in North America. It achieves an impressive EPA-estimated 40 mpg combined.
Operations	• Toyota's North American manufacturing division received its ninth ENERGY STAR Sustained Excellence Award for leadership in energy management. Energy use has been reduced by 22 percent per vehicle since fiscal year 2002.
	• With the implementation of brackish reverse osmosis systems, four of our assembly plants are saving 61 million gallons of water per year.
	• Since 2002, Toyota's parts and accessories returnable container program has saved over 308 million pounds of wood and 185 million pounds of cardboard.
Business Partners	• Toyota's truck assembly plant in Texas reduced landfill waste by 71 percent in 2013 through an innovative partnership with Waste Management that turns trash into fuel.
	• Toyota and Lexus lead the industry with 36 dealerships in the U.S. and Canada certified to LEED®. Combined, these dealerships have over 2.1 million square feet of LEED-certified building space.
	• Of our 36 LEED certified dealerships, three are certified Platinum, the highest level of certification granted by the U.S. Green Building Council.
Communities	• WWF and Toyota have been working together for over a decade to transform the Galápagos into a model of community-based conservation and sustainable development.
	• Now in its sixth year, Toyota TogetherGreen has engaged nearly half a million participants in conservation action in all 50 states.
	• Thanks to a grant from Lexus Eco Challenge, a middle school in South Carolina was able to increase local curbside recycling by 16 percent.

> VISION & ACTION

Respect for the Planet. Simply stated, this is Toyota's commitment to the environment.

We challenge ourselves to minimize environmental impacts at all stages of the vehicle life cycle: in research and development, manufacturing, logistics, sales, in use and at end-of-life. We look at our own operations as well as those of key business partners – suppliers and dealerships. And, we partner with our communities to support environmental programs and initiatives.

Our success comes from following the pillars and principles of the Toyota Way. The Toyota Way transcends language and nationality; it is applied in every Toyota region at every level. The Toyota Way provides a framework for constantly making improvements and steadily encouraging innovation and evolution.

"Continuous Improvement" is one of the pillars of the Toyota Way. It combines *kaizen* (change for the better) with standardized work, an evolutionary process that helps eliminate inefficiencies.

When a project finishes at Toyota, we methodically try to preserve what went well and create countermeasures for what did not. Lessons learned are incorporated into the standard process so that when we repeat it, we improve over the last time. We share these insights with our colleagues in a process we call *yokoten*.

When we practice *yokoten*, we share not only the methods and procedures, but also the reasons changes were made and what mistakes were made. By openly communicating and sharing this information horizontally across the organization, we foster a learning organization. Successful practices become the new standard.

Continuous Improvement is a repeating cycle. We strive, through *kaizen*, standardization and *yokoten*, to achieve an ideal situation. But there is always room for further improvement – that's why we refer to successful practices instead of best practices. So once a *kaizen* is successfully implemented, we are ready to start the next round of *kaizen* and continue the cycle of improving.

Throughout this report, we highlight instances where *yokoten* is helping us improve our environmental performance across North America. We also feature a number of stories about our efforts to increase efficiency and eliminate waste, such as:

- **Creating a Closed-Loop System for Biodiesel**
- **The Road to Zero Waste Goes Through Princeton, Indiana**
- **Packaging Reductions**
- **Waste Management Turns Toyota's Trash Into Fuel**
- **Toyota Partners with WWF in the Galápagos**

All of the steps we take to reduce our environmental footprint – through *kaizen* and *yokoten*, in waste and in other areas – are part of our long-term view of sustainable growth that shows respect for the planet at every turn.

STRATEGY

Toyota's global commitment to the environment is stated in the company's Global Vision, announced in 2011 and founded on a commitment to quality, constant innovation and respect for the planet. The Global Vision articulates the kind of company we strive to be – a company that shows consideration to the environment and investigates and promotes sustainable systems and solutions.

Toyota's values are outlined in the Guiding Principles and Earth Charter. The Guiding Principles challenge the company to "be a good corporate citizen," "dedicate ourselves to providing clean and safe products," and "pursue growth in harmony with the global community." Environmental responsibility is key to each of these.

The Earth Charter was developed in 1992 (and revised in 2000) to exemplify our comprehensive approach to managing environmental issues. The Earth Charter instructs us to strive for "growth in harmony with nature," "zero emissions," and "building close and cooperative relationships" with a wide range of stakeholders interested in preserving the environment.

FG1 • Toyota's Vision and Principles

TOYOTA GLOBAL VISION

Toyota will lead the way to the future of mobility, enriching lives around the world with the safest and most responsible ways of moving people.

Through our commitment to quality, constant innovation and respect for the planet, we aim to exceed expectations and be rewarded with a smile. We will meet challenging goals by engaging the talent and passion of people, who believe there is always a better way.

TOYOTA'S GUIDING PRINCIPLES

Adopted January 1992, Revised April 1997

1. Honor the language and spirit of the law of every nation and undertake open and fair corporate activities to be a good corporate citizen around the world.
2. Respect the culture and customs of every nation and contribute to economic and social development through corporate activities in local communities.
3. Dedicate ourselves to providing clean and safe products and to enhancing the quality of life everywhere through our activities.
4. Create and develop advanced technologies and provide outstanding products and services that fulfill the needs of customers worldwide.
5. Foster a corporate culture that enhances individual creativity and teamwork value, while honoring mutual trust and respect between labor and management.
6. Pursue growth in harmony with the global community through innovative management.
7. Work with business partners in research and creation to achieve stable, long-term growth and mutual benefits, while keeping ourselves open to new partnerships.

TOYOTA'S EARTH CHARTER (APRIL 2000)

The Toyota Earth Charter, published in 1992 and updated in 2000, describes Toyota's Basic Action Policy and Action Guidelines regarding environmental improvements.

I. BASIC POLICY

1. Contribute toward a prosperous 21st century society
Aim for growth that is in harmony with the environment, and set a challenge to achieve zero emissions throughout all areas of business activities.

2. Pursue environmental technologies
Pursue all possible environmental technologies, developing and establishing new technologies to enable the environment and economy to coexist.

3. Take action voluntarily
Develop a voluntary improvement plan based on thorough preventive measures and compliance with laws, that addresses environmental issues on global, national and regional scales, while promoting continuous implementation.

4. Work in cooperation with society
Build close and cooperative relationships with a wide spectrum of individuals and organizations involved in environmental preservation, including governments, local municipalities and related companies and industries.

II. ACTION GUIDELINES

1. Always be concerned about the environment

Work toward achieving zero emissions at all stages, i.e., production, utilization and disposal;

Develop and provide products with top-level environmental performance;

Pursue production activities that do not generate waste;

Implement thorough preventive measures;

Promote businesses that contribute toward environmental improvement.

2. Business partners are partners in creating a better environment

Cooperate with associated companies.

3. As a member of society

Actively participate in social actions;

Participate in creation of a recycling-based society;

Support government environmental policies;

Contribute to nonprofit activities.

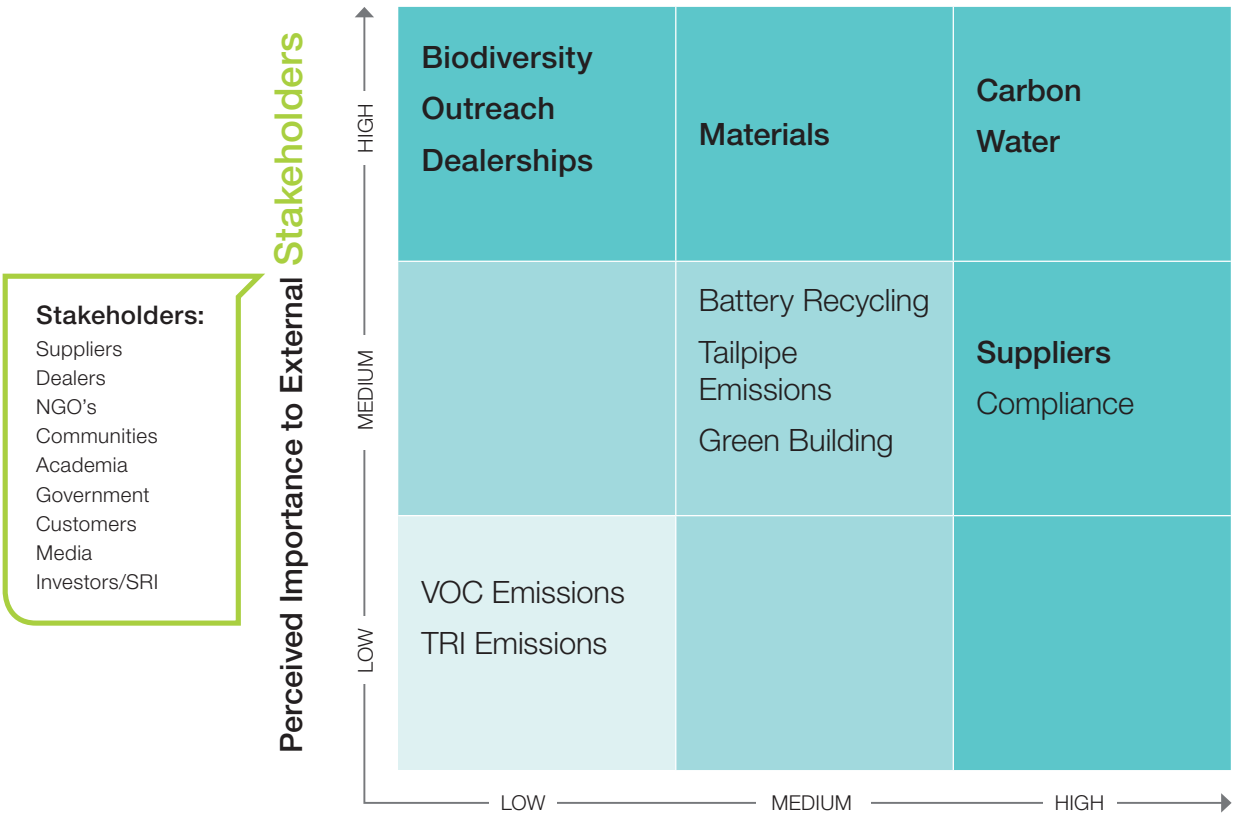
4. Toward better understanding

Actively disclose information and promote environmental awareness.

To more effectively implement Toyota's Global Vision, Guiding Principles and Earth Charter, the company has been moving toward a regional structure. Decentralizing certain functions allows each region to consider their own culture, geography and frames of reference. In North America, we are translating the global vision of Respect for the Planet into concrete action for our region.

We began by undertaking an environmental materiality assessment for North America. We evaluated the relative significance of the environmental topics facing us in the region. We also undertook to determine how important these topics are to our stakeholders. We are continuing to implement a formal stakeholder engagement process, to confirm the accuracy of our assessment. Our plan is to have ongoing periodic assessments to stay up to date with changing conditions and new developments.

FG2 • Environmental Materiality Assessment for North America



Our environmental materiality assessment evaluates how relevant and significant environmental aspects and impacts are to Toyota and to our stakeholders. Our assessment identified 13 topics that we manage – and will continue to manage – on an ongoing basis. Of these, we identified the aspects in bold as having the most material impacts, meaning they are the most relevant and significant at this time. These are the aspects we have prioritized and will increase focus on in our next environmental action plan.

Based on our initial assessment, we identified four core areas of focus for operations in North America:

- **Carbon** – vehicle fuel economy, vehicle fuels diversity, and energy and greenhouse gas emissions from operations
- **Water** – water use, water discharge and impacts to water bodies
- **Materials** – chemical, raw material and waste management
- **Biodiversity** – habitat and species protection and enhancement

Within each of these areas, we consider impacts from our own activities, impacts at our **Suppliers** and **Dealerships**, and **Outreach** with external stakeholders. We are in the process of developing strategies for each of these areas of focus, including goals and targets encompassing the entire North American enterprise. We have already begun to align metrics and key performance indicators (KPIs) across all business functions.

In the meantime, we are still working toward meeting our annual environmental action plan targets in the areas of compliance, air (volatile organic compounds), energy, greenhouse gases, waste and water.

FG3 • FY2013 Targets and Results

	FY2013 ENVIRONMENTAL TARGETS	RESULTS
Compliance	Zero complaints and violations	O
Air	Reduce VOCs from the body paint process at manufacturing plants to 13.8 g/m^2	⊙ 13.0 grams per square meter
Energy	Reduce energy consumption at manufacturing plants 2% per year to 7.12 MMBtus per vehicle	⊙ 6.72 MMBtus per vehicle
Greenhouse Gases	Reduce GHG emissions at manufacturing plants to 0.78 metric tons CO_2 per vehicle produced	⊙ 0.61 metric tons CO_2 per vehicle produced
Waste	Reduce non-saleable waste from manufacturing plants 2% per year to 17.50 kilograms/vehicle	X 18.41 kilograms/vehicle We missed this target, mainly due to an increase in the amount of wastewater shipped off site for treatment. Two of our plants experienced issues with their wastewater treatment systems; countermeasures have been implemented.
	Achieve zero waste to landfill* at manufacturing plants **Defined as not sending waste directly to landfill (excluding ash from waste sent to incineration and waste-to-energy facilities)*	Δ Achieved by 10 of 14 plants. 4 plants missed the target. We are working with these locations to find suitable alternatives to landfill.
Water	Reduce water usage at manufacturing plants 1% per year to 0.91 kilogallons per vehicle	⊙ 0.87 kilogallons per vehicle

⊙ Target Exceeded O Target Achieved Δ On Track X Target Missed

In this report, we describe environmental initiatives and performance in North America across our various business functions – research and development, manufacturing, logistics and sales. Information is organized by issue to allow for better readability and ease of navigation. In each chapter, we highlight those initiatives and partnerships that increase efficiency and eliminate waste. As one of our core areas of focus, we are proud of the good work already being done to reduce waste across the region.

GOVERNANCE

In 2013, we formed the Toyota North American Environmental (TNAE) organization. TNAE reports to the North American Executive Committee and serves as the chief environmental body representing all Toyota entities in North America. TNAE, in cooperation with the Toyota North American Environmental Committee (which is comprised of members from the Executive Committee), establishes activities and provides one voice for appropriate responses to environmental issues in North America. TNAE's primary responsibilities include setting policy and direction for the region, developing consolidated environmental action plan goals and targets, and developing the annual North American Environmental Report.

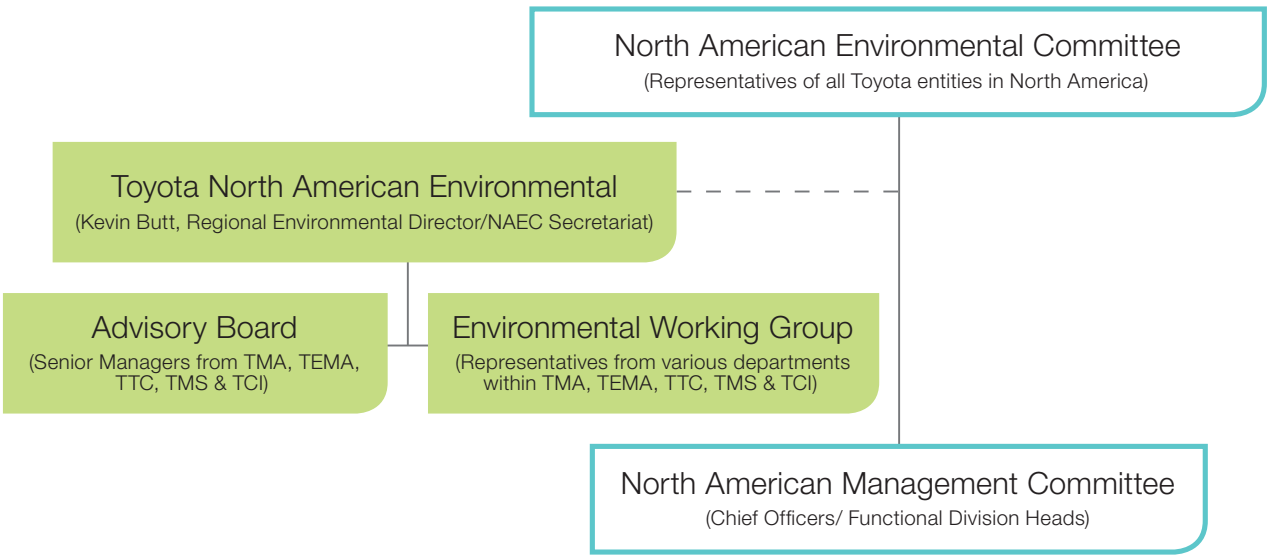
The TNAE organization includes an Advisory Board and Environmental Working Group. Both are comprised of environmental experts and representatives from four of Toyota's North American companies:

- Toyota Motor North America, Inc. (TMA)
- Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA)*
- Toyota Motor Sales, U.S.A., Inc. (TMS)
- Toyota Canada Inc. (TCI)

**** TEMA includes both manufacturing and the Toyota Technical Center (TTC), Toyota's North American research and development division.***

This report contains information from these four companies. Representatives from these companies also participate in focus groups that concentrate on a particular environmental issue (such as water or biodiversity). These focus groups report to the Environmental Working Group and help develop and implement environmental action plan targets, develop strategies for the region, perform benchmarking and data gathering activities, and raise awareness.

FG4 • Environmental Governance in North America



ENVIRONMENTAL MANAGEMENT SYSTEMS

Environmental management systems are an essential part of Toyota's overall effort to minimize risks and achieve leading levels of environmental performance. Each location's environmental management system (EMS) identifies significant environmental aspects and impacts of its operations, and has corresponding controls, goals and targets to manage and reduce these impacts over time.

Toyota's EMS is part of a redundancy of systems put in place to protect the environment. We have used and enhanced these systems in North America for 25 years. Employees from various functions frequently speak at events to share their EMS knowledge with others.

Performance

In fiscal year 2013, all of Toyota's North American manufacturing plants and logistics sites and several office complexes had an environmental management system certified to the ISO 14001 standard, the International Organization for Standardization's core set of standards for designing and implementing an effective environmental management system. These 41 locations are listed in Figure 5. Our plant in Delta, British Columbia, was the first Toyota facility in North America to achieve this certification and has maintained it for 16 consecutive years.

We also encourage our suppliers to pursue third-party certification of their environmental management systems. Over 600 direct Tier 1 suppliers to our North American plants are certified to ISO 14001.

In addition, Toyota's Tecate plant has received two **Clean Industry (Industria Limpia) Certificates** from Mexico's Federal Agency for Environmental Protection (PROFEPA). PROFEPA awards Clean Industry Certificates as part of its voluntary audit program to companies committed to maintaining high standards of environmental protection, particularly in the areas of hazardous waste management, wastewater and water recycling, and environmental security. Each certificate is valid for two years.

Thanks to the efforts of Toyota team members, including Luis Molinar, Julia Návar and Leonardo Bassi, Toyota's Tecate plant earned a Clean Industry (Industria Limpia) Certificate from Mexico's Federal Agency for Environmental Protection (PROFEPA). This certificate shows the plant's commitment to maintaining the highest standards of environmental protection.

FG5 • ISO 14001 Certifications of Toyota's North American Facilities

	LOCATION	ORIGINAL CERTIFICATION DATE	DATE OF LATEST RECERTIFICATION
Manufacturing Plants	Manufacturing Headquarters in Erlanger, Kentucky	2000	2009
	Huntsville, Alabama	2004	2010
	Long Beach, California	1998	2010
	Princeton, Indiana	1999	2011
	Georgetown, Kentucky	1998	2010
	St. Louis, Missouri	1998	2010
	Troy, Missouri	1998	2010
	Blue Springs, Mississippi	2012	—
	Jackson, Tennessee	2007	2010
	San Antonio, Texas	2008	2010
	Buffalo, West Virginia	2000	2013
	Woodstock, Ontario	2009	2012
	Cambridge, Ontario	1998	2010
	Delta, British Columbia	1997	2012
	Baja California, Mexico	2006	2012
Vehicle Distribution Centers	Georgetown, Kentucky*	1998	2010
	Lafayette, Indiana	2008	2011
	Long Beach, California	1999	2011
	Port Newark, New Jersey	2000	2011
	Portland, Oregon	2004	2011
	Princeton, Indiana*	1999	2011
	San Antonio, Texas	2007	2010
	Toronto, Ontario	2002	2011
	Montreal, Quebec	2003	2011
Parts Distribution Centers	Aurora, Illinois	2004	2012
	Cincinnati, Ohio	2001	2010
	Glen Burnie, Maryland	2001	2011
	Hebron, Kentucky	2003	2012
	Kansas City, Missouri	2000	2010
	Mansfield, Massachusetts	2000	2012
	Ontario, California	2002	2011
	Portland, Oregon	1999	2011
	San Ramon, California	2001	2010
	Torrance, California	2001	2011
	West Caldwell, New Jersey	2003	2012
	Toronto, Ontario	2001	2011
	Vancouver, British Columbia	2002	2011
Sales and Regional Offices	Canadian Sales Headquarters in Toronto, Ontario	2001	2011
	Pacific Region and TFS	2002	2011
	Quebec Regional Office and TFS	2005	2011
	Atlantic Regional Office and TFS	2006	2011

*Vehicle distribution centers in Kentucky and Indiana are certified with the manufacturing plants. They do not have separate certifications, even though they are separately managed facilities.

TOYOTA'S EMS AT WORK AT OUR OLDEST PLANT

In 2012, we celebrated the 40th anniversary of our oldest plant in North America, TABC. Located in Long Beach, California, TABC is a supplier of components for the Tacoma truck manufactured at Toyota's North American assembly plants in Texas and Baja California, Mexico. TABC provides sheet metal components, welded sub-assemblies, steering columns and painted axle housings.

TABC is a perfect example of how Toyota's environmental management system (EMS) works. Our EMS provides a framework for compliance with all applicable regulatory requirements, but also paves a path for going above and beyond. TABC has held ISO 14001 certification since 1998, consistently achieving recertification every three years. This achievement means TABC is one of seven Toyota facilities in North America to have held the certification for 15 consecutive years.

TABC's EMS stresses following a process and, when a problem arises, performing root cause analysis. By following Toyota's well-developed EMS, team members are proactive, wherever possible identifying risk and making corrections to prevent a problem from occurring.

TABC, like many of the North American plants, is evolving. Organizational changes are part of this evolution, and new team members have recently taken on the responsibility of environmental activities. So the plant's Environmental Department went back to basics, identifying and reconfirming high-risk areas, reviewing and revising policies and procedures, raising awareness on the shop floor every day, and checking for compliance and conformance.

TABC's Facilities Engineering and Environmental group receives support from TABC's Executive Management, Toyota's North American manufacturing headquarters, and the Environmental Department at Toyota Motor Sales. This cooperation led to a major upgrade that significantly increases the reliability of the wastewater operations. In addition, secondary containment systems for the wastewater and paint processes were improved to prevent the risk of groundwater and stormwater contamination. The skills and capabilities of the team members at TABC were utilized to design, engineer and implement these projects using the latest technologies, with a ***kaizen*** mind and continuous improvement at the forefront of all activities, never afraid to think "outside the box."

Using the EMS process, team members have combed over the Long Beach site to find opportunities for improvement and ensure everything is up to Toyota standards. This past year, team members focused on wastewater operation upgrades and secondary containment.

Over the years, TABC's environmental team has developed a great partnership with Toyota's North American manufacturing headquarters – Toyota Motor Engineering & Manufacturing, or TEMA, with TEMA providing additional implementation resources and expertise. TEMA, as a central repository of ***kaizens*** for all of North America's manufacturing plants, facilitates the ***yokoten***, or sharing, of ideas and lessons learned to improve the performance of the plants. As one of Toyota's smaller plants, TABC's environmental team is always willing to participate, share their ideas and learn from environmental initiatives at other North American plants.

"Working in one of the oldest Toyota plants in North America presents its own challenges with the age of some of the equipment," said David Cooper, Environmental Assistant Manager at TABC. "Much of the technology Toyota uses today in the other plants doesn't exist at TABC, making retrofits more fun! But with dedication from all departments at every level in the organization, we get it done."

COMPLIANCE

Many of our activities in vehicle development, manufacturing and logistics are subject to local, state, provincial and federal laws that regulate air emissions, water discharges, stormwater management, greenhouse gas emissions, waste treatment and disposal, and chemical management. These regulations vary by facility based on the type of equipment we operate and the functions performed.

Toyota is one of a number of companies named as a potentially responsible party (PRP) at the Portland Harbor Superfund Site in Portland, Oregon, and at a waste management site in Calvert City, Kentucky. We continue to work on groundwater remediation at our Newark vehicle distribution center with the New Jersey Department of Environmental Protection and the New York/New Jersey Port Authority. At the Long Beach, California, vehicle distribution center, we are working with the Regional Water Quality Control Board to monitor and improve a groundwater quality issue related to a minor fuel release, which occurred during the replacement of underground storage tanks with new aboveground storage tanks.

TARGET AND PERFORMANCE

Target: Zero violations, zero complaints (achieved)

In fiscal year 2013, our North American manufacturing plants and logistics sites had zero regulatory violations. Our Canadian logistics sites achieved their 15th consecutive year with no dangerous goods violations.

In addition to regulatory violations, the manufacturing plants also track the number of complaints made by third parties. There were no complaints in fiscal year 2013.

FG6 • Complaints and Non-Compliance

DESCRIPTION	FY11	FY12	FY13
Complaint Cases	0	0	0
Notices of Violation	2	1	0

VEHICLES

> VEHICLES

For more than 35 years, Toyota's North American engineering and research and development activities have been headquartered in Ann Arbor, Michigan.

Team members at our design and research centers are engaged in engineering design, prototype building, vehicle evaluation, evaluation and design of parts and materials, regulatory affairs, emissions certification and technical research. Toyota's Ann Arbor technical center is widely regarded as Toyota's leading technical center outside Japan.

A fundamental step in the design of our vehicles is *yokoten* – sharing knowledge and lessons learned between vehicle development teams. Each time we undertake a vehicle redesign or begin the development of a new vehicle, we take into account

what we've learned from previous projects, then find better ways to apply or improve on that knowledge.

By applying *yokoten* and other principles of the Toyota Way, we are finding ways to innovate more "green" into our products – for example, by finding ways for our vehicles to go longer distances on fewer gallons of fuel. We are also building a portfolio of advanced technologies to reduce emissions and meet future mobility needs.

Our efforts to make fuel-efficient vehicles with low emissions stem from our commitment to eliminate waste in all aspects of our business. Vehicles with poor gas mileage are inefficient – they "waste" fuel and money. So during the vehicle design stage, we set targets for a vehicle's fuel economy and tailpipe emissions levels.

The lighter the vehicle, the more fuel-efficient it can be. This past year, we introduced the all-new Avalon Hybrid, the first Toyota vehicle to be fully styled, developed and built in North America. Thanks in part to its low mass, the Avalon Hybrid achieves an impressive EPA-estimated 40 miles per gallon combined.

Throughout this report, we highlight examples of our efforts to eliminate waste. The many awards won by our vehicles for outstanding fuel efficiency and low tailpipe emissions are further examples of our commitment to efficiency and waste reduction.

SHARING

The Japanese word ***yokoten*** is translated loosely as sharing lessons learned. When a project finishes at Toyota, we methodically try to preserve what went well and create countermeasures for what did not. Lessons learned are incorporated into the standard process so that when we repeat it, we improve over the last time. When we practice ***yokoten***, we share not only the methods and procedures, but also the reasons changes were made and what mistakes were made. By openly communicating and sharing this information horizontally across the organization, we foster a learning organization.

FUEL EFFICIENCY & GHG EMISSIONS

Toyota is pursuing multiple technology paths to reduce fuel consumption and greenhouse gas emissions in our global markets. We try to match technologies to best meet customer needs in each specific region. This means evaluating vehicle powertrains, weight, aerodynamics and other design factors to boost vehicle efficiency while preserving the vehicle size, power, driving range and affordability that customers demand – and without sacrificing world-class vehicle safety and performance. Hybrid technology is becoming increasingly important in satisfying this vast array of sometimes conflicting requirements across different regions, and hybrids remain at the core of our technology portfolio as well as our compliance strategy.

In the United States, the Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) have established fuel economy and greenhouse gas (GHG) emissions standards for passenger cars and light trucks through the 2025 model year. By 2016, the new vehicle fleet must meet a GHG standard of 250 grams of CO_2 per mile, equivalent to a Corporate Average Fuel Economy (CAFE) standard of 35.5 miles per gallon; by 2025 cars and light trucks are required to yield a combined 54.5 mpg. While overall compliance is based on a fleet average, each vehicle has a fuel economy/GHG target based on its footprint. Many of our hybrid products are already capable of meeting their respective future targets for fuel economy and GHG standards.

One significant challenge to meeting these standards will be having technology options available that consumers are able and willing to purchase in sufficient quantities. At this point, it is nearly impossible to predict such outcomes so far into the future, since preferences will largely be determined by factors such as fuel price, economic conditions and infrastructure development – most of which are beyond an auto manufacturer's control. These factors have begun to be monitored under the mid-term review process, which will re-evaluate the feasibility of the 2022-2025 model year standards. A determination on feasibility will be made by 2018.

Toyota believes any evaluation should treat vehicles and fuels as a system. Higher octane and/or reduced sulfur can enable additional greenhouse gas emissions reductions and fuel savings from several engine technologies, while biofuels have the potential to reduce the carbon intensity of the fuel.

In Canada, Toyota supports a harmonized approach with the United States to setting emissions standards. The Canadian federal government introduced a greenhouse gas emissions regulation under the Canadian Environmental Protection Act for the 2011 through 2016 model years, and is in the process of proposing greenhouse gas emissions regulations for the 2017-2025 model years.

In Mexico, the government has proposed GHG standards modeled after the U.S. requirements. The standards require automakers to meet a single sales-weighted fleet average over the period 2014 through 2016, and allow credits generated in 2012 and 2013 to be used toward compliance. These standards have been appropriately tailored to the unique driving conditions and product mix associated with the Mexican market, and contain similar compliance flexibilities and lead

time as those offered in the United States. Starting with model year 2014 implementation, we will begin reporting on Toyota's performance in this program.

FUEL ECONOMY AWARDS

Toyota offers several models that achieved best-in-class fuel economy ratings in 2013.

FG7 • Best-in-Class Fuel Economy Ratings

Our CAFE and CAFC performance is driven by high volume sales of our most fuel-efficient vehicles. Toyota offers several models that achieved best-in-class fuel economy ratings in 2013, according to a number of sources:

Natural Resources Canada's ecoENERGY Awards for 2013

TACOMA

Ranked 1st in the pickup class

PRIUS *v*

Ranked 1st in the station wagon class

The U.S. Department of Energy's www.fueleconomy.gov

CLASS	LEADER IN **MPG** COMBINED
mini-compact	Scion iQ 37 MPG
compact	Prius *c* 50 MPG
midsize	Prius Liftback 50 MPG
midsize station wagon	Prius *v* 42 MPG
small pickup truck	Tacoma 2WD 23 MPG
small sport utility *(front wheel drive)*	Lexus RX 450h 30 MPG
standard sport utility	Highlander Hybrid 28 MPG

(These segment classifications are determined by EPA's measurement of a vehicle's interior volume; ratings exclude PHEV and pure EV vehicles.)

U.S. Department of Energy's Top 10 EPA-Rated Fuel Sippers for 2013

Prius	Prius *c*	Prius *v*	Lexus CT 200h	Lexus ES 300h
tied for 1st, 51 city/48 hwy	tied for 1st, 53 city/46 hwy	tied for 4th, 44 city/40 hwy	tied for 4th, 43 city/40 hwy	ranked 5th, 40 city/39 hwy

(These ratings exclude PHEV or pure EV vehicles.)

Kelley Blue Book

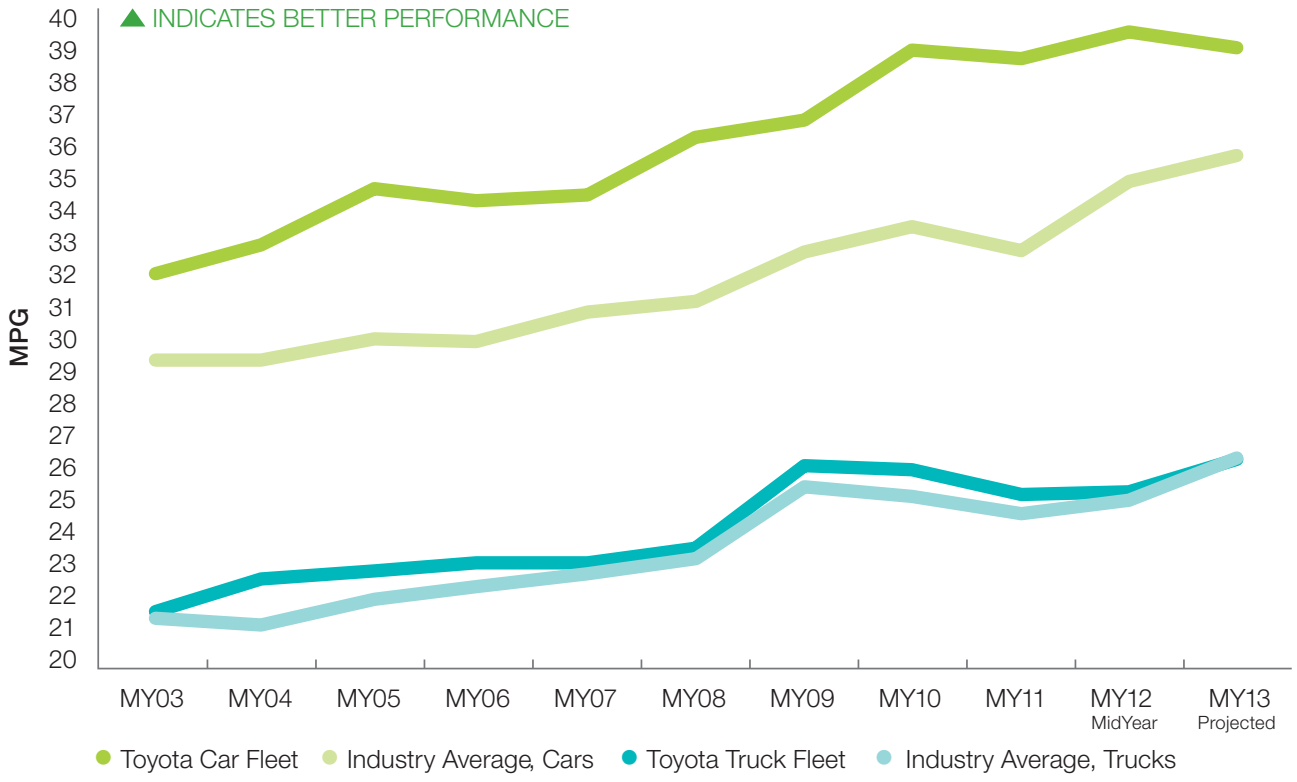
- Ranks the Toyota Avalon Hybrid and Toyota Prius Plug-in as two of the **10 Best Green Cars of 2013**.
- Ranks the Lexus RX 450h (in first place), Toyota Highlander Hybrid and Toyota RAV4 as three of the **10 Most Fuel-Efficient SUVs of 2013**.

PERFORMANCE

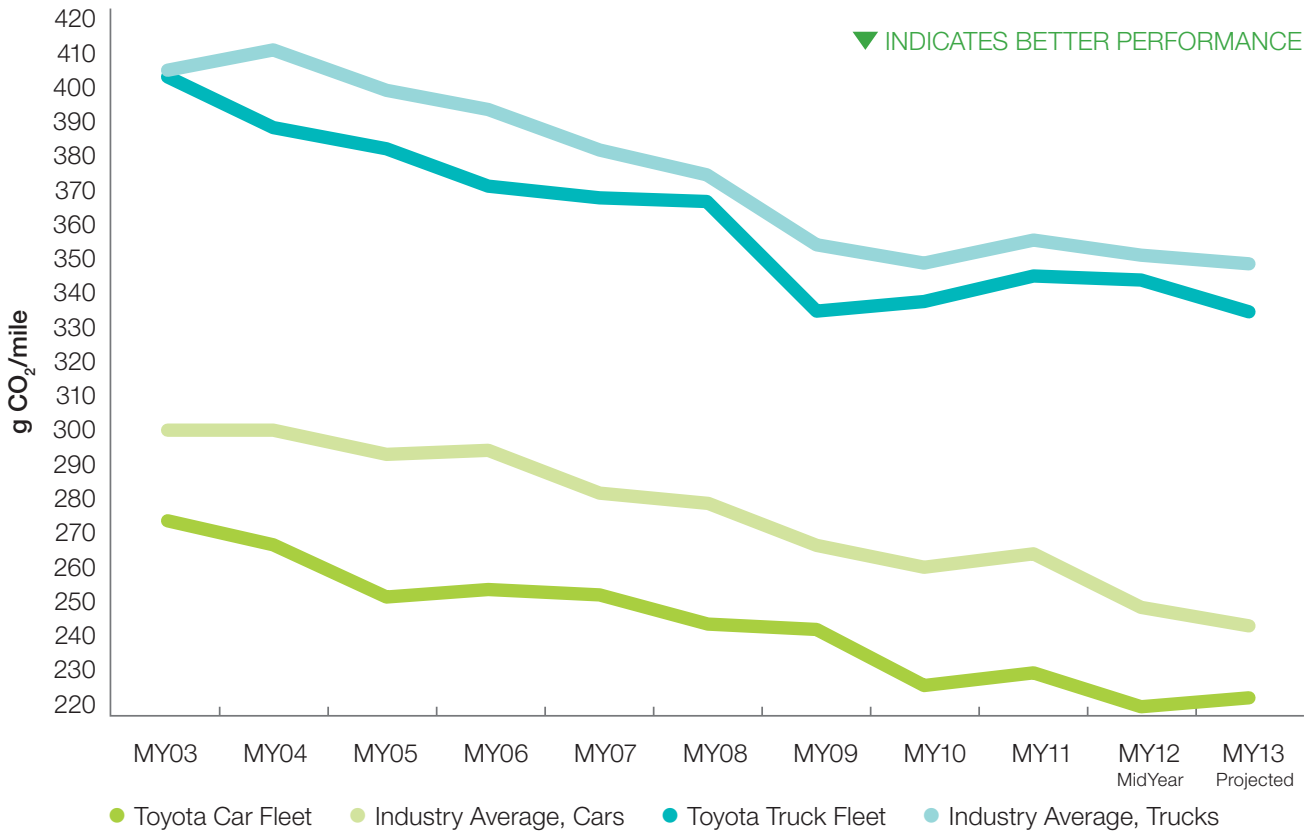
Fuel economy is the distance a vehicle can be driven using a certain amount of fuel, measured in the United States as miles per gallon (mpg). Fuel consumption is the quantity of fuel burned over a defined distance, and in Canada is measured as liters of fuel burned per 100 kilometers traveled (L/100 km). The amount of fuel burned is directly related to emissions of carbon dioxide (CO_2), a greenhouse gas: The more fuel burned, the more CO_2 emitted.

In the United States, Toyota is the most fuel-efficient full-line automotive manufacturer. In the United States, Toyota's model year 2013 fleet achieved the required U.S. Corporate Average Fuel Economy (CAFE) standards. Toyota met the required GHG standards in both the United States and Canada.

FG8 • U.S. Car Corporate Average Fuel Economy, or CAFE



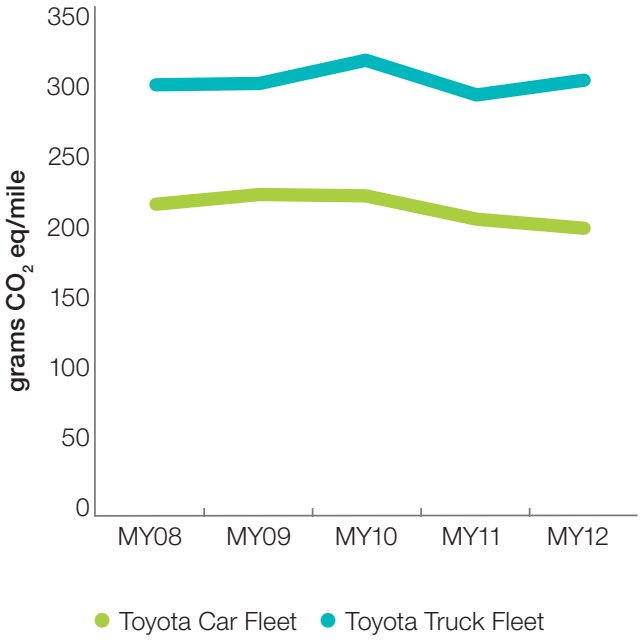
FG9 • Annual CO_2 per Kilometer, Toyota U.S. Fleet



*This data represents CAFE fuel economy performance in terms of CO_2 (grams per mile) and does not reflect provisions in the U.S. EPA GHG program (starting 2012 model year) such as air conditioning credits.

FG10 • Canadian Car Company Average Fuel Consumption, based on GHG Emission Regulation

▼ INDICATES BETTER PERFORMANCE



*This data is based on CO_2 emissions data reported to Environment Canada.

RELATED TOPICS

- For more information on our advanced technology vehicles including our hybrid fleet, please visit **Future Transportation**.
- For information on how we manage CO_2 emissions in operations, please visit **Operations/Carbon**.

CRITERIA POLLUTANT TAILPIPE EMISSIONS

Hydrocarbons, nitrogen oxides (NOx) and carbon monoxide – all byproducts of fuel combustion – are linked to various air quality issues, including smog and acid rain, as well as a number of health effects. Limiting these emissions from our vehicles helps to reduce some of the environmental impacts of driving.

The U.S. Environmental Protection Agency (EPA) and the state of California have certification programs to categorize vehicles in terms of their level of tailpipe emissions. EPA's certification program categorizes vehicles into Tier 2, Bins 1 through 8. Lower bin numbers correspond to vehicles with lower tailpipe emissions; Bin 1 is for vehicles with zero tailpipe emissions. This program requires a manufacturer's fleet average to meet a Tier 2 NOx standard of 0.07 grams per mile (gpm). (The Canadian and U.S. federal programs have equivalent standards.)

In California, the Low-Emission Vehicle II (LEV II) regulations categorize vehicles as LEV (Low Emission Vehicle), ULEV (Ultra Low Emission Vehicle), SULEV (Super Ultra Low Emission Vehicle), ZEV (Zero Emission Vehicle), or AT-PZEV (Advanced Technology Partial Zero Emission Vehicle). For the 2013 model year, the California LEV II regulations required an auto manufacturer's fleet average to meet an emission standard for non-methane organic gas (NMOG) of 0.035 gpm for passenger cars and light-duty trucks up to 3,750 pounds, and 0.043 for other light-duty trucks.

The LEV II standards are in effect through the 2014 model year. LEV III was adopted in California on December 31, 2012, and will be effective in the 2015 model year.

We expect the current federal vehicle emission standards to change, based on EPA's anticipated issuance of their Tier 3 rule. Environment Canada has announced they will also pursue Tier 3 regulations aligned with the proposed U.S. Tier 3 rule.

Toyota, along with other auto manufacturers, supports efforts to harmonize the new California LEV III and federal Tier 3 programs. We are working with federal and state agencies, through their regulatory processes, to help develop rules that are both effective and feasible. Our goal is to maintain the flexibility to build vehicles based on customer preferences. In setting tailpipe emission regulations, we believe standards should be performance-based and take into account the interaction with other vehicle rules – such as fuel economy/greenhouse gas standards – to ensure the total package of requirements is effective and acceptable to the consumer. As with greenhouse gas emissions, fuels must be considered with vehicle technologies as a holistic system. Reduced sulfur levels in gasoline, already available for the LEV III program, are needed to enable the after-treatment systems being designed for Tier 3 compliance.

PERFORMANCE

Toyota annually complies with the state of California, U.S. and Canadian federal vehicle emissions programs, and we have met the requirements for the 2013 model year.

The Toyota Prius *c* earned the title of Greenest Car of the Year from the American Council for an Energy Efficient Economy (ACEEE) in their "Greenest Vehicles of 2013" list. The list is notable in that it takes into account a variety of criteria when determining the greenest car, including the car's emissions, emissions from the electric grid on which it charges, and energy necessary to build and dispose of the car.

The Scion iQ was one of only two all-gasoline cars to make the ACEEE "Greenest Vehicles of 2013" list.

Prius (shown here) and Prius Plug–in Hybrid tied for third place on ACEEE's "Greenest Vehicles of 2013" list.

Prius and Prius Plug–in Hybrid (shown here) tied for third place on ACEEE's "Greenest Vehicles of 2013" list.

More information about the emissions performance of Toyota, Lexus and Scion vehicles sold in the United States can be found in EPA's ***Green Vehicle Guide***.

FG11 • Toyota and Lexus SULEVs

Specifically for vehicles offered in the 2013 model year, 40 percent of all Toyota, Lexus and Scion passenger car vehicles and 13 percent of truck vehicles are certified to SULEV or better. These vehicles include:

Avalon Hybrid
Prius
Prius *c*
Prius *v*
Prius Plug-In Hybrid
Camry Hybrid
Camry PZEV
Highlander Hybrid
RAV 4 EV
Lexus ES 300h
Lexus GS 450h
Lexus RX 450h
Lexus LS 600h L
Lexus CT 200h

*Data is U.S. only and is not sales-weighted.

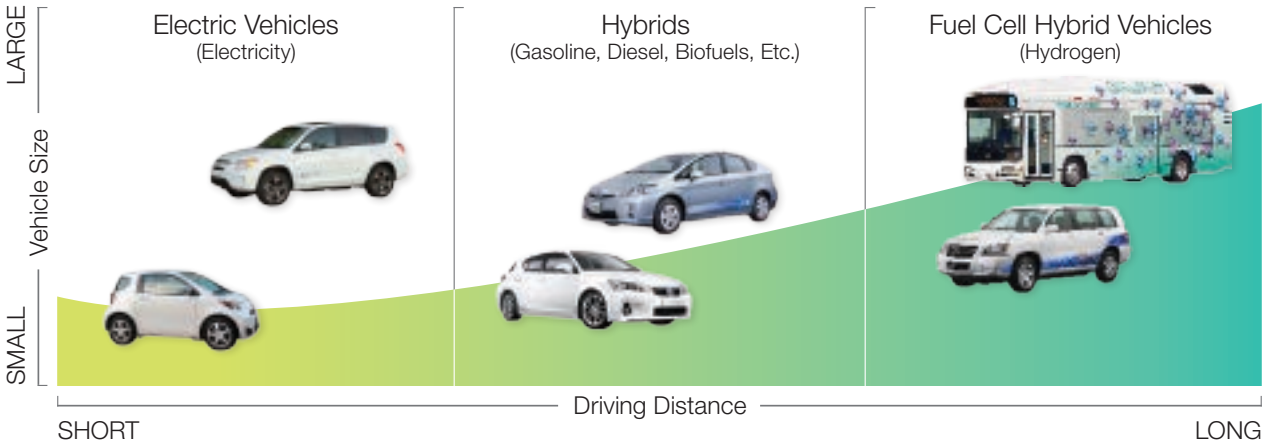
FUTURE TRANSPORTATION

Toyota's approach to future transportation focuses on developing a suite of technologies to meet the world's mobility needs sustainably and with flexibility. We acknowledge that one technology will not be the "winner," and that a mobility system in New York could look very different from systems in São Paulo, Toronto, London or Shanghai. So Toyota is rolling out conventional hybrids across our entire lineup and improving the efficiency of our conventional engines and powertrains, while also investing in a portfolio of advanced technologies – battery electric, plug–in hybrid and fuel cell.

Toyota addresses customers' needs for driving distance and vehicle size using different portfolio technologies. Our vision for battery electric vehicles, for example, is based on short trips originating from home, while our Plug–in Hybrid and Fuel Cell Vehicles (FCVs) are meant for longer driving distances.

Our investments in advanced technology address all aspects of the vehicle life cycle. Our commitment to ***yokoten*** – sharing learning across the organization – has resulted in significant improvements with each generation of our advanced technology vehicles. We continue to innovate for better fuel efficiency and lower emissions.

FG12 • Energy Sources for Toyota's Advanced Technology Vehicles



The vehicles shown from left to right are: Scion iQ EV, RAV4 EV, Lexus CT 200h, Prius, FCHV-adv and a fuel cell hybrid bus.

FG13 • Advanced Technology Vehicle Milestones

2012

The Avalon Hybrid debuts, the first Toyota vehicle to be fully styled, developed and built in North America.

2012

Toyota launches the RAV4 EV, an all-electric SUV with an EPA estimated driving range of about 100 miles.

2008

Toyota announces FCHV-adv, which achieves cruising range of approximately 780 km.

2006

The Camry Hybrid launches, the first hybrid vehicle to be assembled in the U.S.

2003

The second-generation Prius is introduced with Hybrid Synergy Drive.

1997

The Toyota RAV4 EV, powered by Ni-MH batteries, launches in the U.S.

1996

Toyota develops FCEV equipped with original fuel cell stack and hydrogen-absorbing alloy tank.

2012

The Lexus ES 300h debuts, the fifth Lexus hybrid to be launched in North America.

2012

Toyota launches the Prius Plug-in Hybrid, available in both the U.S. and Canada.

2010

Toyota announces collaboration with Tesla Motors and debuts a new RAV4 EV at the Los Angeles Auto Show.

2007

The prototype Prius plug-in hybrid vehicle debuts, powered by a double Ni-MH battery pack.

2000

The first mass-produced hybrid passenger vehicle in the world, the Prius, is introduced in the U.S. (launched in Japan in 1997).

1998

The CNG Camry debuts in the U.S. Vehicle is sold for fleet applications.

1997

Toyota eCom car debuts at the Tokyo Motor Show.

Advanced Powertrains + Alternative Fuels

Our portfolio approach takes into account the diversity of alternative transportation fuels currently available, as well as those on the horizon. Ethanol, biodiesel, natural gas and electricity are already in the marketplace here in North America, while hydrogen will be arriving soon. The availability and diversity of these alternatives to gasoline and diesel play a key role in helping countries realize their energy security and greenhouse gas emissions reduction goals.

The National Petroleum Council recently released a report, "Advancing Technology for America's Transportation Future." The study responds to the U.S. Department of Energy's request for advice on accelerating development of alternative fuel vehicles through 2050 for passenger and freight transport, with an eye toward economically reducing the U.S. transportation sector's 2050 petroleum use and life-cycle greenhouse gas (GHG) emissions. Research was conducted over a period of two years and with the participation of a number of companies, including Toyota. Key findings include:

- Existing technologies can substantially increase vehicle fuel economy.
- Overcoming 12 priority technology hurdles, such as increasing battery energy density and reducing the cost of vehicle light-weighting, is essential for commercialization of advanced fuels and vehicles.
- Increasing the diversity of economically competitive fuels and vehicles will bolster the nation's energy security.
- Continued investment in multiple combinations of advanced fuels and vehicles could yield solutions that benefit American consumers and significantly reduce GHG emissions.

A number of Toyota's advanced technology vehicles are designed to use alternative fuels such as electricity and hydrogen. But as the study notes, there are several hurdles to overcome before these vehicles can realize full-scale commercialization. Infrastructure development is one of these hurdles.

Through the California Fuel Cell Partnership (CaFCP), the Fuel Cell and Hydrogen Energy Association (FCHEA), and the California Plug–in Electric Vehicle Collaborative, Toyota is working with government agencies (including the U.S. Department of Energy), other auto manufacturers, utilities and other key stakeholders to support the development of necessary infrastructure for advanced technology vehicles.

PARTNERSHIP: CREATING A CLOSED-LOOP SYSTEM FOR BIODIESEL

Toyota Motor Manufacturing, Alabama builds four-cylinder engines for Camry, RAV4, Venza, Sienna and Highlander, and V6 and V8 engines for Tacoma, Tundra and Sequoia. The plant is located in Huntsville, less than 10 miles from Alabama A&M University.

Alabama A&M University is committed to searching for new knowledge through research and its applications. In 2010, our Alabama plant formed a partnership with the university to learn about possible applications of biofuel at our North American manufacturing plants. Under the leadership of Dr. Ernst Cebert, a professor in the Department of Biological and Environmental Sciences, A&M University students are using diesel engines from our parts delivery trucks as a real-world laboratory. Together, we are working toward creating a closed-loop system, where waste oil from our cafeteria eventually comes back to us as biodiesel for use in on-site shunt trucks.

Biodiesel is a cleaner-burning alternative fuel often produced from renewable resources such as plant oils, animal fats, used cooking oil and even algae. Biodiesel itself contains no petroleum, but is typically blended at various levels with petroleum to create a biodiesel blend that works in diesel engines over a wide range of temperatures, with few modifications. When compared to burning regular diesel, burning biodiesel-gasoline blends results in lower exhaust emissions of the pollutants that form smog, ozone and acid rain.

The Huntsville plant delivers between 55 and 100 gallons per month of used cooking oil to Alabama A&M University, where the waste oil is converted to biodiesel using a Springboard Biodiesel BioPro™ 190 unit. The unit is designed to produce ASTM-quality fuel, and is about the size of a stand-up arcade game. One 55-gallon drum of waste oil from Toyota's plant makes approximately 30 gallons of biodiesel.

The volume of biodiesel is still quite small, but the opportunity for the university to use Toyota's equipment in a real-world setting is priceless. "You never know where the next great idea is going to come from," said David Absher, Manager at Toyota North American Environmental. "Dr. Cebert works in the George Washington Carver building at the University. Dr. Carver suggested using peanut oil to power automobiles over 100 years ago. One of Dr. Cebert's students might discover the key to improving the biodiesel process."

There are many players in this partnership, from team members at Toyota, to professors and graduate students, to the makers of the BioPro 190. And everyone involved is learning. We are learning about the biofuel specifications and what it takes to convert waste oil into a workable fuel. This gives us a better understanding of the technological implications of scaling up a project like this, or even of sharing it – practicing ***yokoten*** – with another Toyota plant. Small projects like this may eventually lead us to our next great breakthrough.

Dr. Cebert and his students at Alabama A&M University are working with team members at our Huntsville plant to create a closed-loop system, where waste oil from our cafeteria eventually comes back to us as biodiesel for use in on-site shunt trucks.

RELATED TOPICS

- Watch a short video about **TOYOTA's innovative partnership with Alabama A&M University**.

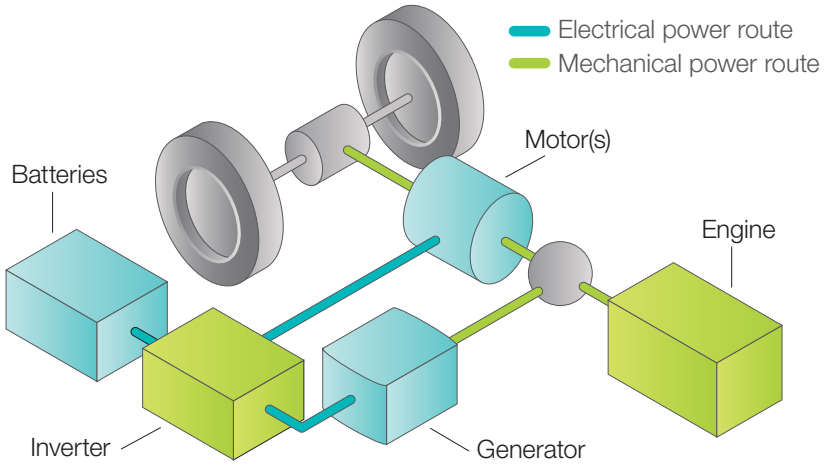
Hybrid Vehicles

Toyota and Lexus have 12 hybrid vehicles currently on the market, all using our unique series-parallel hybrid system. Hybrid technology is the foundation of Toyota's approach to minimizing the environmental impacts of gasoline-powered vehicles. Knowledge gained from hybrid development and deployment is helping Toyota accelerate the introduction of future powertrains that can utilize a wide variety of energy sources and fuels, including hydrogen, biofuel, natural gas and electricity.

FG14 • Toyota Hybrid System and Fleet

Depending on driving conditions, the engine and the electric motor(s) can work together, or the motor(s) alone can propel the vehicle.

Series Parallel Hybrid



Hybrid Fleet

The current fleet of Toyota and Lexus hybrids includes:

MODEL	YEAR LAUNCHED
Prius	2000
Highlander Hybrid	2005
Lexus RX 400h/RX 450h	2005
Camry Hybrid	2006
Lexus GS 450h	2006
Lexus LS 600h L	2006
Prius *v*	2011
Lexus CT 200h	2011
Prius *c*	2012
Prius Plug-in Hybrid	2012
Lexus ES 300h	2012
Avalon Hybrid	2012

*Launch dates refer to North American launches of the first generation of these vehicles.

Toyota reached a milestone at the end of March 2013, when global hybrid sales topped the five million mark. Since introducing the first hybrid vehicle in 1997, Toyota's global fleet of 20 hybrid models has resulted in an estimated 34 million fewer tons of CO_2 emissions than those emitted by gasoline-powered vehicles.

Between January 2013 and the end of 2015, Toyota plans to introduce 18 new hybrid models worldwide and expects global sales of its hybrids to be at least one million units a year. About one third of these will be sold in North America.

Over two million Toyota and Lexus hybrids – including more than 1.4 million Prius Family vehicles and 229,000 Lexus hybrids – have been sold in North America (hybrid sales data YTD as of June 2013).

Toyota and Lexus have 12 hybrid models on the market in North America. Toyota and Lexus hybrid vehicles make up 70 percent of both the U.S. and Canadian auto industry's total hybrid sales to date. In the U.S., three of every four luxury hybrids sold is a Lexus hybrid.

SPOTLIGHT: THE 2013 AVALON HYBRID

Toyota's all-new 2013 Avalon Hybrid is the first Toyota vehicle to be fully styled, developed and built in North America. This is also the first time vehicle crash testing was performed in North America, at our facility in York, Michigan, and the first time a prototype was built in North America, also in Michigan. The Avalon Hybrid is assembled at our plant in Georgetown, Kentucky (using U.S. and globally sourced parts).

While the 2013 Avalon Hybrid is noteworthy for its distinctive styling and performance, it is also one of the more fuel-efficient vehicles in the mid-size segment. The key to the Avalon's superior fuel efficiency is its low mass.

Avalon Chief Engineer Randy Stephens and his development team at Toyota Technical Center in Ann Arbor, Michigan, worked toward a goal of making Avalon lighter, yet more rigid, to help improve overall driving performance. "Our target was to dramatically improve all aspects of dynamic performance," Randy explained, "especially in the areas of fuel efficiency, handling and performance."

Engineering for weight reduction requires examination of all elements of vehicle design and componentry. By installing a higher class of high-performance polypropylene resin, we were able to decrease the general thickness – and weight – of the front and rear bumpers. Also, by

using a higher content of high-strength steel in various vehicle parts, we were able to conserve mass while maintaining crash performance targets.

Our suppliers also played a role in helping us reduce the overall weight of the vehicle. Thanks to Johnson Controls and Superior Wheels, the weight of the seats was reduced by 20 pounds, and the weight of the wheels was reduced by 11 pounds.

As a result of these efforts, the new 2013 Avalon is 110 pounds lighter than the 2012 model. The lighter weight of the 2013 Avalon Hybrid helps it achieve an impressive EPA-estimated 40 miles per gallon combined.

The 2013 Avalon Hybrid is noteworthy for its distinctive styling and performance. It also achieves an impressive EPA-estimated 40 miles per gallon combined.

Plug–in Hybrid Vehicles

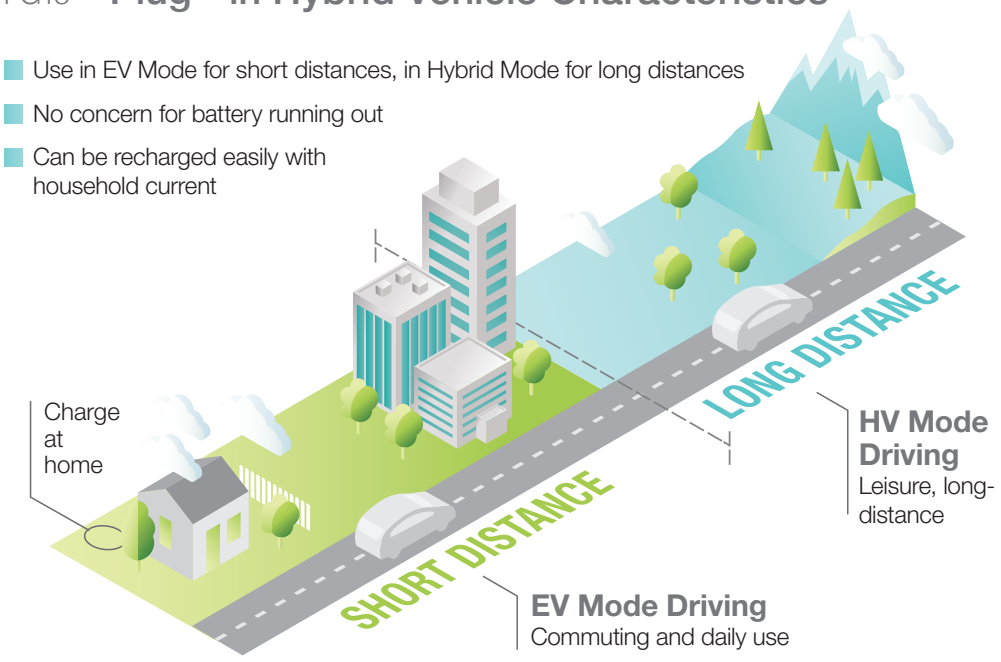
Plug–in hybrid vehicles use electricity from the power grid to partially offset the use of gasoline. As such, these vehicles typically release fewer emissions while in operation than a conventional vehicle. While the life cycle implications vary, based on the source of the electricity, Toyota views the plug–in hybrid vehicle as a way to reduce fuel consumption and tailpipe emissions (including CO_2) beyond a standard gasoline-electric hybrid vehicle.

In 2012, we launched the Prius Plug–in Hybrid, available in both the United States and Canada. Toyota's Prius Plug–in offers all the advantages and utility of a conventional hybrid vehicle. Its 4.4 kWh lithium-ion battery can be charged using a 120V outlet in about three hours (with a dedicated 15 amp circuit). Depending on the driving profile, regular recharging can reduce gasoline consumption by up to one third over a conventional Prius, which in turn reduces both greenhouse gas and tailpipe emissions.

The Prius Plug–in can operate on battery power alone at speeds up to 62 miles per hour and is rated by the U.S. EPA with an EV Mode range up to 11 miles. For longer distances and at speeds above 62 miles per hour, the Plug–in automatically switches to hybrid mode and operates like a regular Prius.

The EV mode fuel economy for the Prius Plug–in is EPA-rated at 95 mpge (miles per gallon equivalent). In hybrid mode, the Prius Plug–in has a combined EPA rating of 50 miles per gallon. The total EPA-rated driving range is 540 miles on a single charge and single tank of gasoline. Drivers who charge the vehicle regularly and use it for street driving on frequent short trips will realize the biggest reduction in gasoline usage.

FG15 • Plug—in Hybrid Vehicle Characteristics



A Plug—in Hybrid Vehicle is the integration and innovation of HV and EV technologies

PLUG–IN HYBRID BATTERIES

The lithium-ion (Li-ion) batteries powering the Prius Plug–ins are built in conjunction with PEVE (Panasonic EV Energy Company, LTD), a joint venture with Toyota. Toyota designed the Prius Plug–in Hybrid around a battery pack smaller than competitive plug–ins or EVs for several reasons. A smaller battery, while providing less EV-only range, weighs less, which maintains the high fuel economy of a hybrid vehicle once the vehicle is no longer in EV mode. In addition, a smaller battery is easier to package in the vehicle, can quickly charge using a standard household outlet, and costs less to build.

To further improve the ease of vehicle charging, we recently began working on wireless battery charging technology so that eventually, there will be no need to plug in.

A STUDY OF PLUG–IN HYBRID VEHICLE CHARGING BEHAVIOR

As with other alternative fuel-vehicle systems, Toyota studies the entire vehicle ecosystem. For plug–in hybrids, enabling wide-scale vehicle charging will require smart charging, such that all vehicles are primarily charged off-peak, and not all at the same time. To study this in the real world, Toyota partnered with the Renewable and Sustainable Energy Institute (RASEI) at the University of Colorado Boulder and Xcel Energy to examine customer response to various types of managed charging and electricity pricing. All of the project partners gained valuable insight into wide-scale vehicle charging and how to minimize the impact to the grid.

The SmartGridCity® Program is a technology pilot in Boulder, Colorado, exploring smart-grid tools in a real-world setting. This pilot provided the study partners with a unique opportunity to evaluate plug–in hybrid vehicle charging. The study wrapped up in 2012, with some interesting results.

Data was collected from 27 Prius Plug–in Hybrid vehicles rotated through 138 Boulder households that, combined, took 12,000 vehicle trips totaling 91,000 miles. The average fuel economy during the study was just under 68 miles per gallon. Households averaged three trips per day, where each trip averaged 7.5 miles. Fuel economy peaked at over 90 mpg for trips of five miles or less. When charging, the average amount of electricity consumed per charge was 2.3 kilowatt-hours. Electricity displaced up to 30 percent of total energy consumed per mile.

One-on-one interviews were conducted both before and after the six-week driving rotation. By and large, households actively managed their charging; however, most were not interested in using a website to check their electricity usage or manage their smart-chargers. Customers wanted an easy and seamless “set it and forget it” method to manage charging, and electricity pricing, more than any other factor, drove charging management behavior.

SPOTLIGHT: TOYOTA PLUG-IN IS MOST FUEL-EFFICIENT HYBRID IN GREEN RALLY

Toyota Canada's Prius Plug–in entry in the 2013 ***Rallye Monte Carlo des Energies Nouvelles*** earned the title of most fuel-efficient hybrid and finished fifth overall, out of a total of 113 entries. The Monte Carlo rally is the world's oldest and most prestigious green rally, and is one of 13 rallies around the world in the Fédération Internationale de l'Automobile (FIA) ***Alternative Energies Cup*** series. Drivers were challenged to consider driving behavior, fuel use and energy regeneration.

Over the course of the four day rally, Toyota Canada's Prius Plug–in traveled more than 1,500 kilometers (930 miles) through Monaco, France and Italy, climbing and descending mountain elevations of more than 960 meters (3,150 feet).

Toyota's Prius Plug–in was driven by Vinh Pham, an Advanced Technology and Powertrain Engineer at Toyota Canada. Vinh also competed in the 2012 ***Rallye Monte Carlo des Energies Nouvelles***, placing 21st of 149 competitors, and in the 2011 and 2012 ***Rallye Vert de Montreal*** races, where he won both times. Navigator Alan Ockwell is a multiple Canadian national champion. Since his debut, he has established himself as one of the top co-drivers in Canada, with two national titles and a dozen event victories.

Our Prius Plug–in achieved a consistent average fuel consumption of 3.9 L/100 kilometers (60 mpg) during the rally. "We're proud the Prius Plug–in's real-world fuel efficiency was proven on such an aggressive course," said Stephen Beatty, Vice President at Toyota Canada Inc. "We're also extremely proud of Vinh and Alan for their commitment to showcasing what's possible with a Prius."

Electric Vehicles

Toyota engineers have been studying electric vehicles (EVs) for nearly 40 years. Alongside the company's groundbreaking hybrid, plug–in hybrid and fuel cell vehicles, EV technology represents another component of Toyota's long-term vision for future mobility.

Toyota's latest entry into the EV market is the second-generation RAV4 EV, developed in partnership with Tesla Motors, Inc. The RAV4 EV – the only all-electric SUV on the market in North America – went on sale in September 2012 through select California dealers, focusing on four major metropolitan markets. Tesla builds and supplies the battery as well as other related powertrain parts and components; the vehicle is built at Toyota's manufacturing plant in Woodstock, Ontario.

For two weeks in September 2012, we introduced the vehicle to the public during an innovation tour along the coast of California. At the wheel was Graham Hill, founder of two of the sustainability movement's most respected websites: Treehugger.com and LifeEdited.com. During his trip, Graham gave Californians a chance to test-drive the RAV4 EV at events like National Plug–in Day and Green Drive Expo.

"We were excited to take the new RAV4 EV on this amazing road trip," said Graham Hill, founder of Treehugger.com and LifeEdited.com. "We explored innovative technologies that set California apart."

The RAV4 EV has an EPA-rated driving range of 103 miles and a fuel economy of 76 combined miles per gallon equivalent (MPGe).*

The vehicle has a 41.8 kWh lithium-ion battery pack. When plugged into a Level 2, 40-amp, 9.6-kW output charging unit, the RAV4 EV's battery pack can be fully replenished in as little as five hours.**

The vehicle comes equipped with a 120v charging cable for use when Level 2 charging is not available.

* EPA-rated driving range when vehicle is fully charged. Excludes driving conditions. Actual mileage will vary. MPGe based on 2013 EPA ratings. Actual MPGe will vary based on driving habits, charging practice, battery age, weather, temperature, and road/traffic conditions. Battery capacity will decrease with time and use. For more information on MPGe and range, please see www.fueleconomy.gov.

**Charging times when vehicle is in Normal Mode and ambient temperature is at 77 degrees F. Charging times will vary with ambient temperature.

In early 2013, we announced our first fleet program partner for the Scion iQ EV. The University of California Irvine has placed 30 iQ EVs for use in their ZEV NET car sharing program. Car sharing is an increasingly viable mobility model in urban areas. The Scion iQ EV is a fleet-only vehicle, and only 100 of these vehicles have been produced.

EV consumers embrace the technology for its smooth drive, excellent acceleration and zero tailpipe emissions, yet they represent a small percentage of the overall vehicle market. For most consumers, limited vehicle range and battery recharge time remain barriers to consideration. As such, Toyota has active research in battery technology – both lithium-ion and "beyond lithium." While EVs may not be the solution for every customer, they are one option in our portfolio of advanced technologies.

Fuel Cell Vehicles

Toyota's fuel cell vehicles are powered by fuel cells that generate electricity from hydrogen. Hydrogen gas is fed into the fuel cell stack where it's combined with oxygen from air. The electricity produced by this chemical reaction is used to power the vehicle's electric motor and charge the battery.

We believe hydrogen holds great potential as a clean, renewable, economically-viable fuel. A fuel cell vehicle emits only water vapor; the exhaust contains no particulate matter, hydrocarbons or other pollutants. Hydrogen can be manufactured using natural energy sources like solar, wind, and landfill and bio-gases, helping to break society's reliance on oil.

Since the 2002 introduction of the first-generation Fuel Cell Hybrid Vehicle (FCHV), Toyota engineers have continued to improve the FCHV's range, durability and efficiency through advances in the fuel cell stack and the high-pressure hydrogen storage system, while achieving significant cost reductions in materials and manufacturing processes. The latest FCHV iteration, the FCHV-advanced (FCHV-adv), was introduced in 2008 and boasts an estimated range increase of more than 150 percent over the first-generation FCHV. The FCHV-adv fuel cell system features four compressed hydrogen fuel tanks, an electric motor, a nickel-metal hydride battery and a power control unit. Toyota has deployed more than 100 FCHV-adv vehicles with universities, private companies and government agencies in California, Connecticut, Massachusetts and the New York metro area as part of a national demonstration program.

Last year, Toyota Motor Corporation (our parent company in Japan) unveiled a new fuel cell stack with more than twice the power density compared to the stack currently used in the FCHV-adv, at approximately half the size and weight. The new stack has an output power density of 3.0 kW/L.

The performance of the fuel cell system as a whole has been further improved by using a newly-developed, high-efficiency boost converter. Increasing the voltage has made it possible to reduce the size of the motor and the fuel cell stack.

This concept model is a highly practical FCV. Unique arrangement of the fuel cell stack allows the vehicle to accommodate up to four passengers and boasts impressive luggage space. A production version of a fuel cell sedan is expected to be brought to market in 2015.

We want to ensure our customers will have sufficient access to hydrogen fuel when we launch our fuel cell vehicle in 2015. To that end, we continue to partner with industry and government to support the growth of the hydrogen fueling infrastructure.

In the spring of 2013, we completed the expansion of our Technical Training Center in Glen Burnie, Maryland, which serves Toyota's Central Atlantic region. This facility is Toyota's first technical training center in the United States with the majority of the required infrastructure to train on future fuel cell vehicles. Currently, Toyota's FCHV-adv vehicles throughout the United States are serviced by staff out of our engineering and development technical centers. When we bring a sedan-based fuel cell vehicle to market in 2015, we will need to ensure dealership service center technicians are trained to work on this technology. With this center's expansion, we are getting a jump on the 2015 date by integrating special features to allow for an easy transition to hydrogen vehicle service.

With the expansion of our Technical Training Center in Glen Burnie, Maryland, we are getting a jump on the 2015 launch of our fuel cell vehicle. This center integrates special features to allow for an easy transition to hydrogen vehicle service.

OPERATIONS

> OPERATIONS

Toyota has 14 manufacturing locations across North America where team members produce 13 vehicles: the Lexus RX 350 and the Toyota Avalon, Camry, Corolla, Highlander, Matrix, RAV4, RAV4 EV, Sienna, Sequoia, Tacoma, Tundra and Venza.

We also have 41 sales and logistics locations across North America, including sales offices, port facilities on both coasts, and vehicle and parts distribution centers that serve both the manufacturing plants and our network of 1,850 dealerships.

In the process of manufacturing and transporting over one million vehicles each year in North America, Toyota uses raw materials,

energy and water; we manage large tracts of land where our manufacturing facilities are located; and we occupy offices in a number of different cities. All of these activities result in impacts to the environment.

To find ways to minimize these impacts, we teach our team members and associates how to practice the pillars and principles of the Toyota Way. In this report, we highlight examples of the practice of *yokoten* – sharing lessons learned – across the organization. In water, for example, the transfer and adoption of brackish reverse osmosis systems to four of our assembly plants is saving us 61 million gallons of water per year.

Throughout this report we also highlight examples of our waste elimination activities. "Waste" includes trash, air emissions and wastewater, as well as the inefficient use of energy or water.

Waste, or *muda*, is one of the three elements of "work." The other elements are value-added work (what the customer perceives as value) and incidental work (work that doesn't add direct value but is required to be performed, such as budgeting for projects).

There are seven *mudas*, or wastes, at Toyota:

- Waiting – for example, waiting for meetings to start; waiting for materials or tools
- Motion – for example, chasing information; repetitive motion from poor ergonomic design
- Rework – for example, work that is missing information; scrap
- Conveyance – for example, unnecessary processing of information; unplanned premium freight
- Over-processing – for example, unnecessary steps; equipment with an unbalanced flow

- **Inventory – for example, excessive backlog of work to be processed; making what we can instead of what customers need**

- **Over-production – for example, too many reviews and approvals; making parts to keep machines running**

Each time we implement a *kaizen* or practice *yokoten*, we are eliminating *muda* and reducing our impact on the environment. Our story about reducing parts shipments expedited by air, for example, addresses conveyance waste; the result is a reduction in greenhouse gas emissions. Our story about reducing the volume of sealer waste in the paint shop of our Cambridge assembly plant addresses over-processing waste; the result is the elimination of a hazardous waste stream. These stories and more can be found below.

SHARING

The Japanese word ***yokoten*** is translated loosely as sharing lessons learned. When a project finishes at Toyota, we methodically try to preserve what went well and create countermeasures for what did not. Lessons learned are incorporated into the standard process so that when we repeat it, we improve over the last time. When we practice ***yokoten***, we share not only the methods and procedures, but also the reasons changes were made and what mistakes were made. By openly communicating and sharing this information horizontally across the organization, we foster a learning organization.

AIR

The primary area of concern for air emissions is smog (for information on greenhouse gas emissions, see Carbon/Greenhouse Gas Emissions). Smog is formed as particulate matter, nitrogen oxides and volatile organic compounds (VOCs) react with sunlight. Smog has been linked to a number of health issues and is particularly prevalent in dense urban areas with heavy traffic, industrial activity and sunny, warm climates.

Toyota's painting operations generate the majority of our VOC emissions. We have a North American Manufacturing VOC Working Group studying aspects of the vehicle body painting process to find ways to reduce VOC emissions. Group members review painting operations as a whole, as well as the components of the process, to find big and small opportunities for improvement, or ***kaizen***. We benefit from sharing and transfer of knowledge and lessons learned, or ***yokoten***, from one plant to the next.

TARGET AND PERFORMANCE

Target: Reduce VOCs from the body paint process at manufacturing plants to 13.8 g/m^2 in FY2013 (achieved)

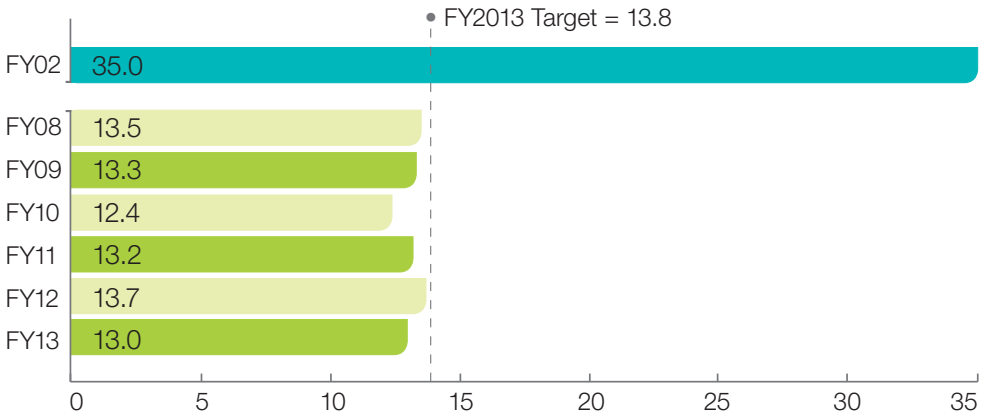
There are many factors to consider when setting VOC targets, including fluctuations in production volumes, model change activity and the introduction of different painting methods. Although we have been successful in meeting our annual VOC targets, we are working hard to assure that our annual results are consistent and that we can continue to find ways to reduce our emissions.

Toyota's North American plants measure grams of VOCs emitted per square meter of vehicle surface area coated (g/m^2). Our target in fiscal year 2013 was to reduce VOC emissions from our 2012 target level of 13.9 g/m^2, to an average 13.8 g/m^2 for all North American plants. We not only achieved this target but exceeded it, reducing average VOC emissions to 13.0 g/m^2.

Team members at the plants have made continuous improvements to equipment work practices (e.g., purging lines, cleaning equipment and reducing overspray) to reduce chemical usage and resulting VOC emissions. Team members at the manufacturing headquarters facilities in the U.S. and Japan have improved designs to equipment such as paint cartridge robots. Using cartridge robots has reduced the amount of paint wasted from purging and cleaning out the lines for color changes, and allows more precise painting, which reduces overspray. Recently, Toyota has been moving paint applicators (spray guns) closer to the vehicle to further reduce overspray, which also reduces overall paint usage.

Over the last decade we have reduced VOC emissions by 63 percent, from 35.0 to 13.0 g/m^2. This achievement is the result of the combined efforts of Toyota team members at the plants and at the headquarters facilities in Japan and the United States.

FG16 • VOC Emissions



63%
REDUCTION
SINCE FY02

g/m² of vehicle surface area coated

Fiscal Year (FY) runs April to March

Scope: Manufacturing Plants

BIODIVERSITY

Biodiversity refers to the variety of animal and plant life on Earth. The diversity of living organisms, and the habitats in which they live, are crucial for the functioning of ecosystems and the resources and benefits they provide – fresh water, fertile soils, medicines, shelter and recreation, to name a few examples. Because the well-being of species living within an ecosystem are so interlinked, human activities can have great influence – both positive and negative – on biodiversity.

Since the company's founding, Toyota has believed in the pursuit of growth that is in harmony with nature. We strive to understand our surroundings and put practices in place not only to minimize our environmental impacts, but also to protect and restore habitats. Our approach to protecting biodiversity centers on the habitats within the 21,000 acres of land owned by our North American manufacturing and R&D facilities in the United States, Canada and Mexico.

FG17 • Relationship Between Business Activities & Biodiversity

One unlikely habitat is the wall on one of our buildings on Cherry Blossom Way in Georgetown, Kentucky. Every spring, wandering swarms of honeybees would appear on or near one of the buildings at our Georgetown assembly plant, prompting safety concerns. At first, we thought we only had two options: ask a local beekeeper to capture the bees, or extermination. We didn't like the extermination option, because pollinator populations are in decline nationally, and we have even noticed fewer and fewer honeybees pollinating our garden plants. So our desire to protect pollinators and the honeybees' need for a home led to Cherry Blossom Honey. Each spring, we now establish hives on our site by placing the swarms of honeybees in a new home. This has increased our garden yields, eliminated all safety concerns, and created delicious local honey for team members to enjoy. This is a small but important example of how we value biodiversity and how we confront challenges with determination and innovative thinking.

TOYOTA PLANTS A FOREST IN INDIANA

Toyota Motor Manufacturing, Indiana (TMMI) opened in Princeton in 1996 and today assembles the Sequoia full-size sport utility vehicle, the Sienna minivan, and the Highlander mid-size sport utility vehicle. Starting in 2013, the Princeton plant also began production on the Highlander Hybrid. With over 4,500 team members assembling 290,000 vehicles each year, Toyota has created a place where doing more than just the minimum is a given. In addition to having top levels of environmental performance in its operations, the plant has become a steward of the land: The plant has had thousands of trees planted on the site and has plans to forest almost 230 acres with native Indiana hardwoods.

The idea for using the plant's acreage to grow trees began 16 years ago, when the plant's president, Seizo Okamoto, had a vision of a nature trail featuring species native to Indiana, adjacent to Toyota's child development center. With the help of a local landscape architect, 10,000 saplings of 17 species were planted along five different sections along a one-mile loop.

Each section of the nature trail was named by children from the child development center: Bluebird Trail, Mayapple Loop, Brookside Path and Larkspur Way

Over the years, the trees along the nature trail have matured, and the idea of featuring native tree species grew into an afforestation plan. As one of Toyota's Model Sustainable Plants, the Indiana assembly plant has spent the last five years implementing an afforestation program, converting mowed grass fields into a forest. Tree planting activities are taking place in phases, with a goal of planting over 125,000 trees by the end of 2014.

The new forest areas are creating habitat for native animals to live and prosper, such as White-tailed Deer and Red-tailed Hawks. Neal Bogan, a naturalist with the Wesselman Nature Society, helped perform a species survey of the reforested area. "Toyota's reforesting efforts are helping wildlife. I saw several locally rare species of migratory birds on the property, some I believe to be nesting there. These include Bell's vireo, woodcock, common yellowthroat, and bobwhite. They also have attracted several large mammal species including deer, coyote and rabbits," said Neal. "The species found here could use the area as a starting to point to move out into the surrounding properties and possibly repopulate some of the surrounding area."

A striking example of biodiversity in the growing forest at Toyota Motor Manufacturing, Indiana is this Red-tailed Hawk and two chicks in a nest. (Photo courtesy of team member Allen H.)

All of our tree seedlings are locally grown from a nursery run by the state's Department of Natural Resources, which provided valuable advice to us during this project. In addition to the Department of Natural Resources, the Princeton plant also worked with Purdue University and a certified forestry company at the start of the project.

Trees were planted using mechanical equipment, a fast and efficient way to get so many seedlings in the ground. But one of the main objectives of this project was to engage team members, so team members and their families were invited to hand plant on two acres. They planted 1,000 trees in just a few hours.

"The afforestation project is just one of the legacies left by TMMI's first president, Seizo Okamoto – and one we are honored to continue today," said TMMI President Norm Bafunno. "The goal of sustainable growth that is in harmony with the environment is part of our Global Vision. TMMI is proud to support and enhance the communities where we live and work through environmental stewardship of our land, community service, and the environmental education programs we offer to our local school children each year."

So far, over 90,000 native tree species have been planted on 160 acres. Phase four of the five-phase plan took place in the spring of 2013; phase five is planned for 2014.

FG18 • The 5 Phases of Planting

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
2008 Planting = 40.5 Acres/ 22,275 Trees	2011 Planting = 42.5 Acres/ 23,375 Trees	2012 Planting = 42.25 Acres/ 23,100 Trees	2013 Planting = 40.2 Acres/ 22,100 Trees	2014 Planting = 63.0 Acres/ 34,650 Trees

Toyota's manufacturing plant in Princeton, Indiana, has a goal to plant over 125,000 trees on its property by the end of 2014. This is part of the plant's efforts to protect and enhance biodiversity on the 228 acres surrounding the assembly plant.

RELATED TOPICS

- For more information on environmental education initiatives sponsored by Toyota's Indiana plant, please visit **Communities/Local Community Engagement**.

WILDLIFE HABITAT COUNCIL CERTIFICATION

Our partnership with the Wildlife Habitat Council (WHC) began at our Georgetown plant. In 2008, it became the first Toyota plant to obtain certification to the Wildlife Habitat Council's "Wildlife at Work" and "Corporate Lands for Learning" programs. Since then, more facilities have become involved in these programs as we practice ***yokoten*** (sharing our learning). Toyota Motor Manufacturing Canada has been certified, and our assembly plant in Indiana, as well as our North American manufacturing headquarters in Erlanger, Kentucky, submitted applications for certification during the summer of 2013.

In 2008, our plant in Georgetown, Kentucky, became Toyota's first plant to obtain certification to the Wildlife Habitat Council's "Wildlife at Work" and "Corporate Lands for Learning" programs. By the end of 2013, we hope to have a total of four sites certified.

The Wildlife Habitat Council's Corporate Wildlife Habitat Certification/International Accreditation Program recognizes commendable wildlife habitat management and environmental education programs at individual sites. Certification criteria are stringent. Sites must demonstrate programs have been active for at least one year, and have a management plan listing goals, objectives and prescriptions as well as complete documentation of all programs. The Certification Review Committee, a panel of WHC wildlife biologists and staff, reviews the materials for certification eligibility and recognizes deserving projects under an appropriate category.

The Wildlife Habitat Council is a nonprofit group of corporations, conservation organizations and individuals dedicated to restoring and enhancing wildlife habitat. WHC works with corporations and other landowners to create tailored voluntary wildlife habitat enhancement and conservation education programs on corporate facilities and in the communities where they operate.

We are focusing on three common biodiversity themes for our North American manufacturing plants: native habitat restoration, native landscaping and pollinator protection. With our plants working toward a common goal of preserving and protecting the environment, our efforts will have the greatest impact.

CARBON

Toyota is concerned about the possible impacts of climate change and is committed globally to fostering a "low-carbon society." Energy use is our main source of greenhouse gas (GHG) emissions. We work hard to reduce our energy use at our facilities and in our logistics; we are also looking into renewable energy as a means of reducing our carbon footprint.

We measure our energy consumption and GHG emissions on a per vehicle basis. We strive for efficiency, because the more efficient we can be, the less we waste. Efficiency and waste reduction activities are highlighted throughout this report. In the following sections, we describe our efforts to use energy more efficiently, reduce GHG emissions and save money.

Energy Consumption

According to the Institute of Energy Research, 78 percent of the energy consumed in North America is generated from burning fossil fuels such as coal and natural gas. These resources are non-renewable, meaning they cannot be naturally replenished for consumption.

Mining, drilling and burning fossil fuels to generate power result in negative impacts to air, water and land. These impacts, combined with the rising cost of energy, make energy efficiency a high priority for companies in all industry sectors.

In North America, Toyota consumes over one billion kilowatt-hours of electricity each year. Much of this electricity is consumed by our 14 manufacturing plants. To manage both the environmental impacts of our energy consumption and the cost, we focus on energy efficiency first. By identifying ***kaizen*** opportunities, then using the concept of ***yokoten*** to transfer lessons learned from one facility to another, we are reducing inefficiencies and eliminating wasteful practices.

ENERGY STAR® AWARDS

The U.S. Environmental Protection Agency (EPA) presented Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA) with its ninth consecutive **ENERGY STAR Partner of the Year** – Sustained Excellence Award for continued leadership in protecting the environment through superior energy management. Toyota's nine Sustained Excellence Awards are the most among any automaker assembling vehicles in the United States.

Since 2002, energy use has been reduced by 22 percent per vehicle produced, and the cumulative cost savings at Toyota's 14 North American vehicle, engine and parts plants have totaled more than $410 million. The total energy saved would power 30,000 average households for 10 years.

"The award gives us greater motivation to identify ways to minimize our impact on the environment while helping our bottom line," said Robin Haugen, General Manager of TEMA Production Engineering—Plant and Environmental Engineering. "Our team members' commitment to reducing energy consumption across our operations demonstrates that when

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good ideas are shared, great things can happen."

In addition to the Sustained Excellence award, several Toyota facilities were certified with the **Energy Star label**, including our plants in Indiana, Kentucky and Texas, our North American Parts Center warehouse in Kentucky, and two office complexes in California: Toyota Plaza and Gramercy Plaza. For a facility to earn an Energy Star label, it must perform in the top 25 percent based on the Energy Performance Indicator (EPI). The EPI was originally developed for assembly plants, defined as welding, painting and assembly operations in the same location, by the Auto Focus Group, of which Toyota was a founding member. The EPI for assembly plants normalizes energy consumption for vehicle size and location to show how efficiently a specific plant is performing. The Energy Star label may be awarded to manufacturing plants and commercial buildings.

The ENERGY STAR Challenge for Industry is designed to recognize individual industrial sites. Any manufacturing site whose company is an ENERGY STAR partner is eligible to enroll. Sites take the challenge by committing to improve their energy efficiency by 10 percent over five years. The following plants are currently taking the challenge:

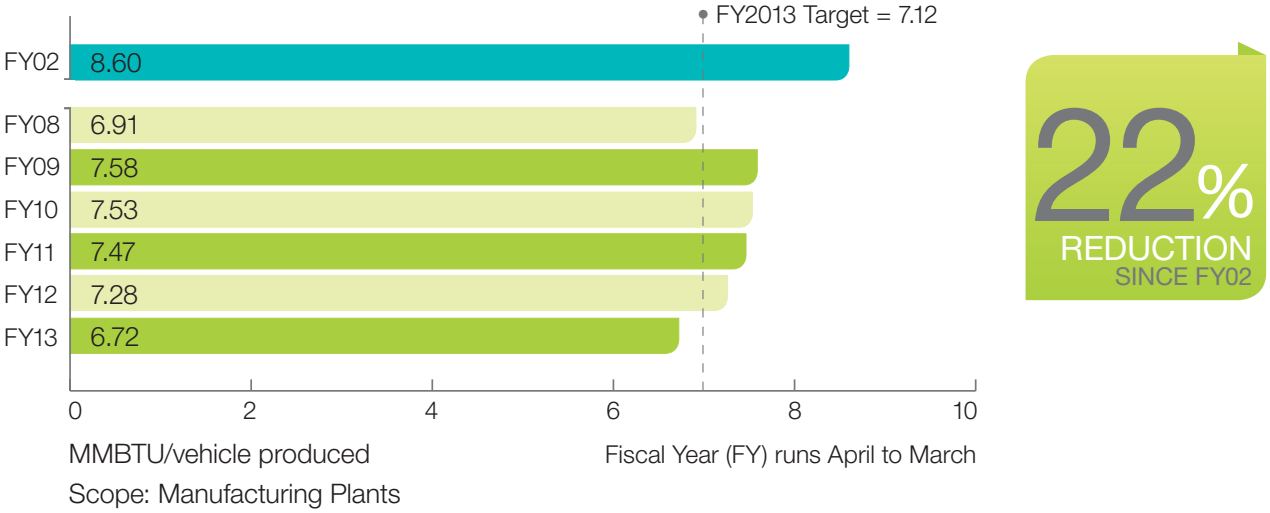
- Bodine Aluminum in Troy, Missouri
- Bodine Aluminum in St. Louis, Missouri
- Bodine Aluminum in Jackson, Tennessee
- Canadian Autoparts Toyota, Inc. in Delta, British Columbia
- Toyota Motor Manufacturing de Baja California in Mexico
- Toyota Motor Manufacturing, Alabama in Huntsville
- Toyota Motor Manufacturing Canada in Cambridge, Ontario
- Toyota Motor Manufacturing Canada in Woodstock, Ontario
- Toyota Motor Manufacturing, Indiana in Princeton
- Toyota Motor Manufacturing, Kentucky in Georgetown
- Toyota Motor Manufacturing, Texas in San Antonio
- Toyota Motor Manufacturing, West Virginia in Buffalo

TARGET & PERFORMANCE

2013 Target: Reduce energy consumption at manufacturing plants to 7.12 MMBtus per vehicle (achieved)

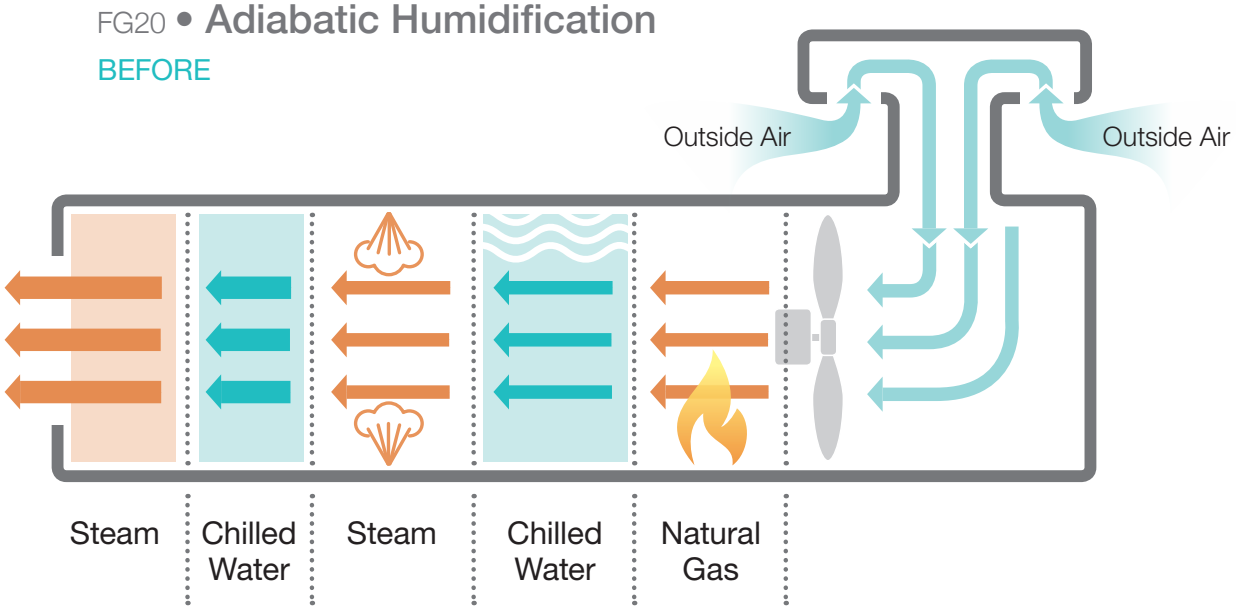
Toyota's North American manufacturing facilities had an annual target for fiscal year 2013 to improve energy intensity to 7.12 MMBtus per vehicle produced. We use MMBtus for this target as a way to combine several energy sources, including electricity and natural gas, into a single metric. We achieved this target and reached 6.72 MMBtus per vehicle, in part thanks to the identification of three major energy reduction opportunities in our paint shops: adiabatic humidification, oven air flow reduction, and pre-heating regenerative thermal oxidizer (RTO) combustion air. Combined, these reduction opportunities total almost 1.2 million MMBtus, equivalent to 349 million kilowatt-hours and almost 11 percent of total energy consumption from our manufacturing plants. We have already begun implementing these reduction opportunities at some of our plants, and plan to have them implemented in all North American assembly plants by the end of fiscal year 2015.

FG19 • Energy Consumption



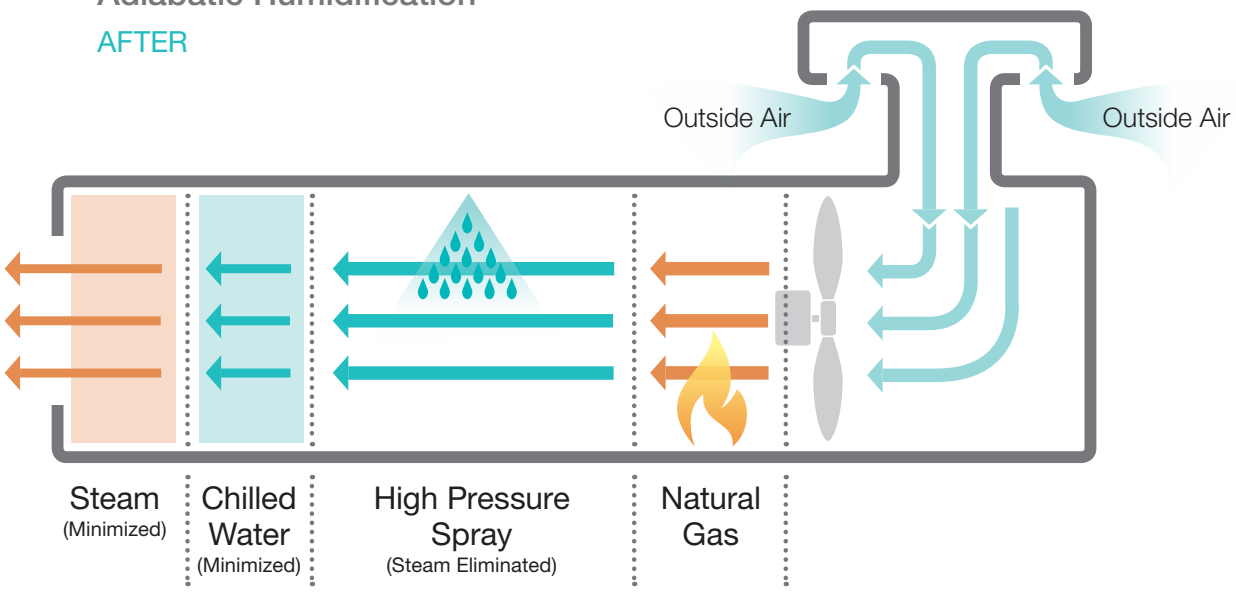
FG20 • Adiabatic Humidification

BEFORE



Adiabatic Humidification

AFTER



These illustrations show the streamlining of the repetitive heating and cooling cycles that condition the air used to paint vehicles. Air for the spray painting process must be maintained at specific temperature and humidity levels to ensure paint adhesion and quality. The standard paint process consumes natural gas, steam and chilled water to reach these set points. Adiabatic humidification uses atomized high pressure water instead of steam.

Specific examples of ***kaizens*** completed over the last year include:

- **Bodine Aluminum (Troy, Missouri)**: Replaced a 20-year old oxidizer (used to control emissions of volatile organic compounds) with a new, more energy-efficient oxidizer, improving energy efficiency by nearly 14 percent and saving $75,000 annually.
- **Toyota Motor Manufacturing Canada**: The Woodstock plant installed a cooling system using outside air to chill water during the cold season, reducing energy use by nearly two percent and saving more than $100,000 annually. The Cambridge plant installed linkage-less boiler burner controls, improving boiler efficiency by more than 15 percent and saving more than $112,000 annually.
- **Toyota Motor Manufacturing, Indiana**: Installed an adiabatic humidification system in the paint booth, improving energy efficiency by 35 percent and saving more than $1.1 million annually. The plant also reduced paint booth downdrafts by an average of 15 percent in all automatic zones, saving more than $600,000 annually with zero investment.
- **Toyota Motor Manufacturing, Kentucky**: Installed an adiabatic humidification system in the paint and plastics shops that cut steam consumption by more than 65 percent and total energy use by 12 percent, resulting in savings of more than $1.4 million annually.
- **Toyota Motor Manufacturing, Mississippi**: As Toyota's Model Sustainable Plant for the North American region, Mississippi has used innovative design and successful practices from other Toyota facilities to become the most energy-efficient Toyota plant in the region. For example, the paint shop utilizes a three-wet system that eliminates the need for a paint oven, saving over 6,000 MMBtus in energy annually.
- **Toyota Motor Manufacturing, Texas**: Installed modified burner controls on a Regenerative Thermal Oxidizer (RTO), improving energy efficiency by more than 16 percent and saving $25,000 annually. An RTO destroys VOC emissions from the paint shop.
- **Toyota Motor Manufacturing, West Virginia**: Installed a compressed air metering system to improve system control. This improvement cut energy use by four percent, resulting in savings of more than $300,000 annually.

In addition to energy reductions at our manufacturing facilities, we also continue to find reduction opportunities at our sales and distribution locations. In fiscal year 2013, we upgraded from metal halide to T-8 lamps at the Vancouver and Toronto parts distribution centers, and to T-5 lamps with motion and daylight sensors at the Los Angeles parts distribution center. The Los Angeles project was the final distribution center in the United States to complete a lighting upgrade.

An example of the difference in lighting quality as a result of a lighting upgrade is shown above. After upgrading, the lighting at the Los Angeles Parts Distribution Center is brighter without requiring more energy use, and the individual fixtures are now controlled by motion sensors.

RELATED TOPICS

- For more information about our strategy for implementing adiabatic humidification projects, please visit the 2012 North American Environmental Report (see **Eco-Efficient Operations/Energy & Greenhouse Gases/Energy Consumption**, then scroll down a little to the section on ***Strategy: Adiabatic Humidification***)

PARTNERSHIP: MEXICO'S ENVIRONMENTAL LEADERSHIP PROGRAM

In 2011, Mexico's Secretary of Environment and Natural Resources invited leading companies to join its "Environmental Leadership Program for Competitiveness," a nationwide effort to encourage companies to reduce their environmental footprint. Toyota's plant in Tecate was selected to be a regional group leader in Baja California and has been working with 14 companies to reduce energy consumption, greenhouse gas emissions and water use. This is an innovative way to practice ***yokoten*** of ideas across companies, share lessons learned and encourage companies to work together for the benefit of environmental protection.

Under Toyota's leadership, the 14 Baja California companies identified projects with the following results:

- Energy savings of 1.6 million kilowatt-hours per year.
- Avoided emissions of over 1,000 tons of CO_2 per year.
- Water savings of 32,000 cubic meters (8.5 million gallons) per year.

The companies were able to recover their investments within only seven months.

Greenhouse Gas Emissions

Greenhouse gases (GHGs) include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These gases (along with water vapor) trap heat in the Earth's atmosphere and cause the greenhouse effect. This is a natural occurrence that normally helps regulate the temperature of our planet. However, over the last 20 years, scientists have raised concerns about human activities causing levels of greenhouse gases to increase at a faster rate than at any other time in human history. The debate is ongoing and predictions vary, but an increase in the greenhouse effect could cause global temperatures to rise, leading to long-term impacts to the environment and human health.

Toyota is concerned about the possible impacts of climate change and is committed globally to fostering a "low-carbon society." Energy use at Toyota's assembly plants is our main source of direct GHG emissions. Our plants carefully manage energy use and have found innovative ways to reduce consumption and corresponding GHG emissions. We are also looking into renewable energy as a means of reducing our carbon footprint.

Paul Houchins is a paint specialist at Toyota Motor Manufacturing, Indiana. He has been working on making the system that conditions air for the paint booth more energy-efficient. His breakthrough came when he realized the conditioned air in the plant's general assembly area could be captured and used in the paint booths before being expelled by exhaust fans. This reduces the need to draw in fresh outside air by 40 percent. The result is a reduction in natural gas consumption, which decreases the Indiana plant's CO_2 footprint by over 7,700 pounds a year. The savings is equivalent to the amount of carbon sequestered annually by 2.9 acres of U.S. forests.

RELATED TOPICS

- Please see **Vehicles/Fuel Efficiency & GHG Emissions** for how we address GHG emissions from our vehicles.

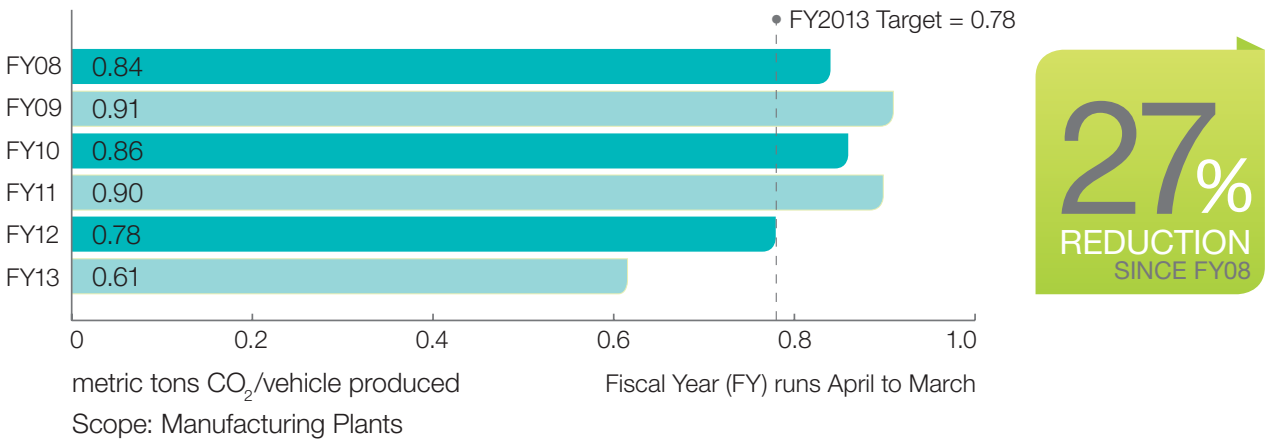
TARGET & PERFORMANCE

2013 Target: Reduce GHG emissions at manufacturing plants to 0.78 metric tons CO_2 per vehicle (achieved)

Our fiscal year 2013 target was to reduce GHG emissions from energy consumption at our North American manufacturing plants from fiscal year 2012 levels to 0.78 metric tons CO_2 per vehicle produced. This target is in line with our energy consumption target. We not only achieved this target but exceeded it, reducing emissions to 0.61 metric tons CO_2 per vehicle in 2013.

Many of the ***kaizens*** discussed in the Energy Consumption section contributed to our success. Energy management activities either implemented or in the implementation phase are predicted to further reduce Toyota's manufacturing CO_2 footprint by more than 380,000 tons per year.

FG21 • Manufacturing CO_2 Emissions



Three of Toyota's North American manufacturing plants were required to report GHG emissions data under EPA's Greenhouse Gas Reporting Program. Individual plant data for our plants in Kentucky, Texas and Indiana are available on the U.S. Environmental Protection Agency's website through its online data publication tool.

We are also disclosing GHG emissions from Toyota's North American companies as a consolidated inventory. Toyota's North American GHG inventory measures GHG emissions from the consumption of electricity and natural gas at plants, logistics sites and owned and leased office space, as well as from fuel consumption by in-house trucking operations and third-party carriers, employee commuting and business travel. The methodology used to calculate emissions is based on ***The GHG Protocol***® developed by the World Resources Institute and the World Business Council for Sustainable Development. The process of preparing this consolidated inventory has helped us better understand where GHG emissions occur and has facilitated information sharing across Toyota's North American companies.

FG22 • North American GHG Emissions by Scope

	SCOPE 1 (Direct)	SCOPE 2 (Indirect - Purchased Electricity)	SCOPE 3 (Other Indirect)
FY2008	437,000	950,000	872,000
FY2009	382,000	767,000	711,000
FY2010	405,000	742,000	710,000
FY2011	395,000	776,000	720,000
FY2012	354,000	710,000	712,000
FY2013	431,000	861,000	789,000

* In keeping with The GHG Protocol®, the above results do not include several *de minimis* sources, which account for less than five percent of our total emissions.

**Scope 3 emissions include indirect emissions from employee commuting, third-party logistics, and business travel. These are emissions which Toyota has influence over but does not directly control.

REDUCING GHGS IN LOGISTICS

Fuel consumption from the transport of Toyota assembly parts, service parts, and vehicles is a significant source of GHG emissions. Our logistics operation is committed to improving fuel efficiency and reducing transportation-related GHG emissions. One way they demonstrate this commitment is through the U.S. EPA SmartWay® program. Our in-house trucking carrier for completed vehicles (Toyota Transport) has renewed its membership in SmartWay as a carrier, and our division managing third-party trucking and rail carriers is a shipper member. Launched in 2004, SmartWay seeks to reduce transportation-related emissions by creating incentives to improve supply chain fuel efficiency.

As part of our efforts to improve fuel efficiency and reduce emissions, we upgraded 90 trucks in our vehicle transport fleet with selective catalytic reduction (SCR) technology. After the exhaust leaves the diesel particulate filter, diesel exhaust fluid is injected into an SCR catalyst. The resulting chemical reaction reduces emissions of nitrous oxides. We are already seeing a 10 percent reduction in GHG emissions per ton-mile traveled (a ton-mile is one ton of freight transported one mile and is a common unit of measure for logistics).

North American Parts Operations (NAPO) also made great strides over the past year in reducing GHG emissions. Previously, the 11 parts distribution centers in the United States filled 95 percent of dealer orders off the shelf of the nearest warehouse. The remaining five percent would ship to the dealer from other locations, often by next day or second day air freight service. NAPO challenged the organization to reduce the number of shipments expedited by air, without increasing lead time to the dealer.

NAPO associates responded to the challenge by collaborating across the supply chain. They stabilized lead times, moving inventory and synchronizing operations to allow more expedited orders to be delivered by truck, with the same speed as shipments made by plane.

The effort paid off. Last year, NAPO leveraged its supply chain to fill 50,000 orders that otherwise would have been filled using air shipments. Reducing the amount of orders shipped by air reduced CO_2 emissions by 3,000 metric tons. This is the equivalent of taking 15 trucks off the highways. It's also a win-win-win: good for the customer, good for the environment, and good for business.

NAPO associates and business partners, including Laura Maule (Toyota) and Patrick Romin (CPC) at the Los Angeles Parts Distribution Center, stabilized lead times, moved inventory and synchronized operations to allow more expedited orders to be delivered by truck, with the same speed as shipments made by plane. The result was a reduction in the amount of orders shipped by air, which also reduced CO_2 emissions by 3,000 metric tons.

Renewable Energy

Renewable energy comes from naturally occurring sources that are not depleted as a result of consumption, such as sunlight, wind, biomass and geothermal. Renewable energy replaces conventional fuels primarily in electricity generation and transportation fuels. There is strong public support for promoting renewable sources such as solar power and wind power. Climate change concerns, coupled with rising oil prices and government support are driving renewable energy legislation, incentives and commercialization.

Toyota has been expanding the use of renewable energy as a means of reducing our carbon footprint and our reliance on non-renewable energy sources. We are evaluating applications of solar, geothermal and stationary hydrogen fuel cells, as well as the purchase of green power either directly from a utility company or through renewable energy credits.

SPOTLIGHT: Investments in Renewable Energy Reduce CO_2 Emissions

Toyota currently has 5,478 kilowatts of renewable energy capacity across North America. We began investing in renewable energy in 2002, when we installed our first photovoltaic (PV) system at our South Campus sales headquarters building in Torrance, California. Since then, we have installed several more PV systems at logistics sites and manufacturing plants, as well as a stationary fuel cell at our sales headquarters in California. We are also experimenting with other types of renewable and alternative energy, such as geothermal systems and landfill gas.

FG23 • Renewable Energy Capacity in North America

TOYOTA FACILITY	TYPE OF SYSTEM	LOCATION	YEAR INSTALLED	KW
Toyota Motor Sales, U.S.A. South Campus	PV	Torrance, California	2003	537
North American Parts Center California	PV	Ontario, California	2008	2,250
Toyota Motor Manufacturing, Alabama	PV	Huntsville, Alabama	2009	5
New York Parts Distribution Center	PV	West Caldwell, New Jersey	2010	1,502
Toyota Motor Sales, U.S.A. Headquarters	Stationary Fuel Cell	Torrance, California	2012	1,110
Toyota Motor Manufacturing, Mississippi	PV	Blue Springs, Mississippi	2013	50
Toyota Motor Manufacturing de Baja California	PV	Tecate, Mexico	2013	24
			Total	5,478

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Three of our newest projects are described below. We are excited, not just because they improve our environmental footprint, but also because they provide an opportunity to learn about new technologies and then share that knowledge with our employees and our communities.

SOLAR ARRAY AT OUR BLUE SPRINGS ASSEMBLY PLANT

As Toyota's Model Sustainable Assembly Plant for the North American region, Toyota Motor Manufacturing, Mississippi has used innovative design and lessons learned from other Toyota facilities to become the most energy-efficient Toyota plant in the region. This plant was built with efficiency in mind, and it's no wonder that its 2,000 team members assemble one of Toyota's more fuel-efficient vehicles, the Corolla.

Toyota's Blue Springs plant opened a new chapter on renewable energy in 2013. Dozens of community members and citizens joined the plant, the Tennessee Valley Authority (TVA), and New Albany Light, Gas & Water (NALGW) at a ceremony to celebrate Earth Day by "powering on" Toyota's new 50 kilowatt solar array. Toyota's solar array is the fourth largest in the state of Mississippi and will generate 50 kilowatts of peak energy for the region, enough to power approximately seven average households for an entire year.

"We are thankful to Toyota for leading by example in its utilization of solar energy. Results will be good for the environment, good for Mississippi, and good for the company's bottom line," said Trudy Fisher, Executive Director of the Mississippi Department of Environment. "Thank you, Toyota, for your continued investment in the State of Mississippi and for your most recent living lessons of the rewards of ***kaizen***."

The array will optimize performance by tracking the sun's movement from sunrise to sunset, and will lay flat at night in "sleep mode." The power generated by the solar array will be redirected back to NALGW, which ultimately transfers back into the grid for public use.

Renewable energy is not new to the Blue Springs plant. Over the past few years, team members have experimented with solar lighting in the visitor parking lot and a geothermal well field. As ideas are tested and proved out, they will be transferred, or shared through ***yokoten***, to other sites.

Kevin Butt, Regional Environmental Director, Toyota North American Environmental, is joined by U.S. EPA Regional Director Beverly Banister, Toyota Motor Manufacturing, Mississippi President Masa Hamaguchi and Vice President Doug Formby, TVA Manager David Sparks, New Albany Mayor Tim Kent, and Trudy Fisher, Executive Director of the Mississippi Department of Environmental Quality, at a ceremony to celebrate Earth Day 2013 by "powering on" the new solar array.

Toyota's solar array is the fourth largest in the state of Mississippi and will generate 50 kilowatts of peak energy a year.

SOLAR ARRAY AT OUR TECATE (MEXICO) ASSEMBLY PLANT

In June 2013, solar panels made by Kyocera Solar, Inc. were installed on a new photovoltaic (PV) carport at Toyota Motor Manufacturing de Baja California (TMMBC). The new carport canopy, which covers a section of the parking area, will harness the sun's energy to power a portion of facility operations and reduce carbon emissions by more than 28 tons each year. Designed and installed by Todo Solar MX, the system features 24 kilowatts (kW) of Kyocera solar modules and an SMA Sunny Boy power inverter to generate up to 121 kilowatt-hours of renewable electricity each day – equivalent to the daily energy requirements of about 15 typical Tijuana-area homes.

"Toyota's commitment to the environment is a way of life, both within our operations and in our products – as exemplified by award-winning vehicles like the Toyota Tundra pickup and Prius hybrid sedan," said Joe Da Rosa, president of TMMBC. "We are pleased to partner with Kyocera to install this solar carport as a visible reminder of our efforts to create a healthier environment for future generations."

The new photovoltaic (PV) carport at Toyota's assembly plant in Tecate, Mexico, generates up to 121 kilowatt hours of renewable electricity each day – equivalent to the daily energy requirements of about 15 typical Tijuana-area homes.

Kyocera and Toyota have a history of collaboration on projects to benefit the environment. Kyocera's solar cells also are integrated into a solar-powered ventilation system available as an option on select Toyota Prius hybrid automobiles.

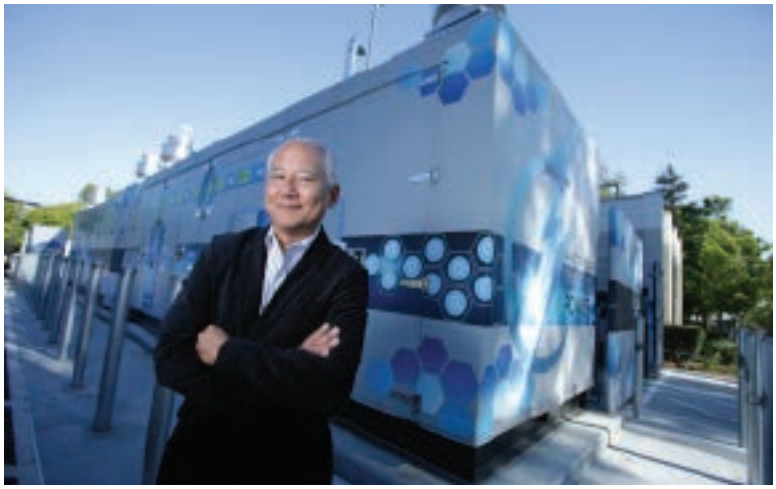
"Kyocera is delighted to assist Toyota in achieving its renewable energy goals," said Steve Hill, president of Kyocera Solar. "We are especially pleased to support applications like the Toyota manufacturing plant in Baja California and the globally renowned Toyota Prius."

STATIONARY FUEL CELL AT OUR SALES AND DISTRIBUTION HEADQUARTERS

Even though it will be a few years before Toyota sells hydrogen fuel cell vehicles in North America, we are already using fuel cell technology. Toyota's U.S. sales headquarters installed a 1.11 megawatt stationary hydrogen fuel cell in late 2012 to generate electricity and reduce utility costs. The fuel cell supplies approximately half of the electricity for six headquarters buildings during peak summer demand.

The fuel cell uses Proton Exchange Membrane (PEM) technology, the same technology used in Toyota's fuel cell vehicle (FCV). PEM fuel cells are used in Toyota vehicles because they can be turned on and off quickly. Using similar technology to responsively provide electricity to our sales campus during peak demand periods demonstrates another reliable use of this technology.

This is the largest PEM fuel cell in the world and is the first application of its kind. "It is an innovative stationary application for fuel cells," said Mark Yamauchi, Real Estate and Facilities Sustainability Strategy Manager at Toyota Motor Sales. "Most other fuel cell technologies need to run continuously to generate baseload power. This project is unique in that we are leveraging the characteristics of the PEM technology to load-follow."

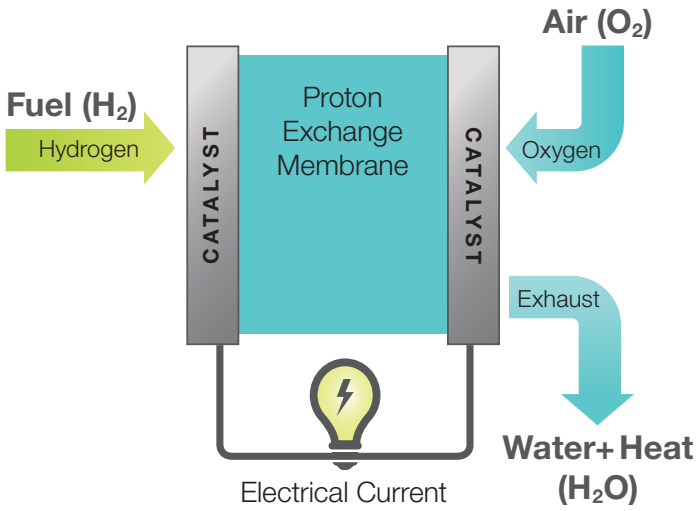


Mark Yamauchi, Real Estate and Facilities Sustainability Strategy Manager at Toyota Motor Sales, stands in front of a 1.11 megawatt stationary hydrogen fuel cell. The clean energy fuel cell system has about twice the capacity of Toyota's existing solar panel on campus, and is expected to reduce CO_2 emissions by 3.3 million pounds during summer peak period operating hours.

The clean energy fuel cell system on average provides enough power for about 765 homes, twice the capacity of Toyota's existing solar panel system on campus. It is expected to reduce CO_2 emissions by 3.3 million pounds during summer peak period operating hours.

The fuel cell uses hydrogen produced off-site from natural gas – from the same hydrogen pipeline supplying the hydrogen filling station adjacent to our U.S. sales headquarters campus, which we use for our fuel cell vehicles. Hydrogen within the dedicated pipeline is provided by Air Products and created from natural gas reformation. To mitigate emissions from the reformation process, hydrogen used on Toyota's campus is offset with the purchase of landfill-generated renewable bio-gas.

FG24 • How a Fuel Cell Works



Toyota's U.S. sales headquarters in Torrance, California, installed a 1.11 megawatt stationary hydrogen fuel cell in late 2012. The fuel cell supplies approximately half of the electricity for six headquarters buildings during peak summer demand. The fuel cell uses Proton Exchange Membrane (PEM) technology, the same technology used in Toyota's fuel cell vehicle.

RELATED TOPICS

- For information about Toyota's FCV, please visit **Vehicles/Future Transportation/ Fuel Cell Vehicles**.

GREEN BUILDING

"Green building" refers to sustainable practices throughout a building's life cycle, from siting to design, construction, operation, maintenance, renovation, demolition and disposal. The objective of green building practices is to reduce the overall impact of the built environment on human health and nature by protecting occupant health, reducing waste and pollution, and efficiently using energy, water and other resources.

According to the Environmental Protection Agency (EPA), the buildings in which we work, shop, play and educate our children in the United States use about $200 billion worth of electricity and natural gas each year. EPA estimates that if the energy efficiency of commercial and industrial buildings in the U.S. improved 10 percent, Americans would save about $20 billion and reduce greenhouse gases equal to the emissions from about 30 million vehicles. In fact, the energy used by commercial and industrial buildings in the United States is responsible for nearly 30 percent of our national emissions of greenhouse gases.

Toyota has over 30,000 employees working in office space, distribution centers and manufacturing plants across North America. Green building principles help us design, build, renovate and manage these spaces in a more sustainable manner.

Toyota's sales and logistics division, Toyota Motor Sales, U.S.A., Inc. (TMS), has been a member of the United States Green Building Council (USGBC) since 2002. The USGBC provides education around green building and administers the Leadership in Energy and Environmental Design (LEED®) program, a point-based program promoting a whole-building approach to sustainable construction, remodeling and operations. LEED certification provides independent, third-party verification that a building is designed, built and operated using strategies aimed at achieving high performance in key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. Through this membership and through other avenues, we have provided advice on sustainable facilities development and operations to a number of organizations, including Yellowstone National Park, surrounding communities, nonprofit organizations and other corporations.

While we do not apply for LEED certification in all cases, we do use integrated design principles and incorporate sustainable elements in each building design phase. We learn from each project as we reflect on what worked and what could have been improved. ***Yokoten*** ensures we standardize successful practices and share them across the organization.

PERFORMANCE

A total of 11 Toyota and Lexus facilities have achieved LEED certification. Ranging from office space to vehicle distribution centers, these facilities represent Toyota's continued efforts to improve the design and efficiency of all operations.

Our U.S. sales headquarters South Campus in Torrance, California, was Toyota's first LEED-certified building. South Campus had its grand opening in 2003 and is certified LEED Gold.

Since 2003, over 5.4 million kilowatt-hours of grid power use have been avoided through the use of our rooftop photovoltaic system. This facility formed the basis for our expertise on green building and is frequently toured by business partners and community members wanting to learn more about green building principles.

Our most recent site to achieve LEED® certification is the Kansas City Technical Training Center in Missouri. The center is located at the region sales office and provides classrooms and training bays for Toyota dealer technicians. Extensive native vegetation rain gardens and swales treat 100 percent of parking lot and roof stormwater runoff, removing 95 percent of pollutants.

We have two buildings registered for pending LEED certification with the U.S. Green Building Council: our Chicago Training Center and the Lexus Eastern Area Office in Parsippany, New Jersey.

FG25 • Toyota's North American Facilities With LEED® Certifications

TOYOTA FACILITY	LOCATION	YEAR	CERTIFICATION LEVEL
Toyota Kansas City Training Center	Kansas City, Missouri	2012	NC Gold
Toyota Inland Empire Training Center	Rancho Cucamonga, California	2010	CI Gold
Toyota Motor North America, Inc.	New York, New York	2010	CI Gold
Toyota Technical Center	York Township, Michigan	2010	NC Gold
Toyota Racing Development North Carolina	Salisbury, North Carolina	2010	NC certified
Lexus Florida Training Center	Miramar, Florida	2009	CI Gold
Toyota Phoenix Training Center	Phoenix, Arizona	2009	CI Silver
North America Production Support Center	Georgetown, Kentucky	2006	CI Silver
Toyota Motor North America, Inc.	Washington, D.C.	2006	CI Silver
Portland Vehicle Distribution Center	Portland, Oregon	2004	NC Gold
Toyota Motor Sales – South Campus	Torrance, California	2003	NC Gold

NC = new construction CI = commercial interiors

RELATED TOPICS

- Since obtaining LEED Certification on our corporate facilities, 36 of our dealerships have followed our lead. Pat Lobb Toyota in McKinney, Texas, was the first automotive dealership in the world to obtain LEED certification. For information on green building programs with our Toyota and Lexus dealerships, please visit **Business Partners/Dealerships**.

MATERIALS

"Materials" refers to everything that goes into making a vehicle, from raw materials such as steel, to chemicals and substances such as paint, plastics and textiles. Not every bit of these materials, however, actually makes it into the vehicle; some of it becomes waste. By becoming more efficient, we gradually reduce the amount of material that becomes waste.

Chemical Management

Many different types of materials and substances are used in the manufacturing of an automobile. These include chemicals in paint, interior plastics, trims, adhesives and textiles. Our engineers incorporate chemical management at the vehicle design stage, where we have the most influence over the chemical content of our products. As a result, Toyota minimizes the impacts to the environment from the use of chemicals in our operations and at the end of a vehicle's life.

Toyota uses the International Material Data System (IMDS) as the primary tool for tracking the chemical composition of parts and accessories. Suppliers are required to enter into IMDS detailed information about the chemical composition of parts and accessories. Through this system, Toyota tracks the use of chemicals on the Global Automotive Declarable Substance List (GADSL), a list developed and maintained by a global automotive stakeholder committee, which Toyota is chairing this year.

Use of IMDS is particularly crucial for ensuring compliance with international recyclability and chemical management laws (such as those in China, Korea, Europe and Japan). Therefore, we adopted IMDS in North America to facilitate tracking and verification of compliance with these laws for vehicles assembled here and exported to international markets. For example, Toyota is exporting the Avalon, Camry, Sienna and Venza from North America to South Korea; using IMDS ensures these vehicles meet South Korea's recyclability laws.

We have completed data collection under IMDS for four vehicles in North America: Camry, Sienna, Venza and Avalon. We are in the process of collecting IMDS data for the nine remaining vehicles we produce in North America. The use of IMDS facilitates the effective management of all types of chemicals, including those of concern but not specifically restricted in international recyclability laws. Our recent experience with using IMDS in North America is helping us better understand its benefit for overall chemical management.

SUBSTANCES OF CONCERN

Our strategy around managing substances of concern (SOCs) initially focused on four heavy metals known to cause environmental and health effects: hexavalent chrome, mercury, lead and cadmium. In 2004, Toyota made a voluntary commitment in North America to minimize these four heavy metals found in parts and accessories to the ***de minimis*** levels specified in the European Union's "Directive on End-of-Life Vehicles" – even though vehicles were not being exported to Europe. After working closely with our suppliers, parts and accessories in North America have not contained hexavalent chrome, mercury, lead or cadmium above levels outlined in the European Union's Directive since 2007.

Our SOC strategy has expanded in recent years to include copper in brake pads, the flame retardant decaBDE, and volatile organic compounds in the vehicle cabin. Copper in brake pads is to be reduced by 2021 to the required ***de minimis*** levels, in alignment with recent legislation in Washington state. The legislation was created due to concerns about copper found in runoff water. We are working with suppliers on finding a suitable alternative.

Decabromodiphenyl ether (decaBDE) is a flame retardant used in many products, including vehicles. The U.S. Environmental Protection Agency and chemical suppliers reached a voluntary agreement to phase out production of decaBDE by December 31, 2013. We worked with suppliers to develop a replacement for decaBDE that meets the federal motor vehicle safety standard FMVSS302 on flammability of interior materials; decaBDE was phased out January 1, 2013.

CABIN VOCS

Materials in the vehicle interior, such as plastics, leather, textiles, glues, sealants and additives, can emit volatile organic compounds (VOCs) even after manufacturing. This is commonly recognized as the "new car smell." We work with our suppliers to develop alternatives that emit lower levels of VOCs in the vehicle cabin. We have developed new tape systems to reduce toluene emissions. More recently, we have been working with our suppliers on reducing formaldehyde and acetaldehyde, which form during leather retanning and finishing.

The Prius, Prius Plug–in Hybrid, Prius ***c***, Prius ***v*** and Camry Hybrid offer available SofTex-trimmed heated front seats. SofTex material weighs about half as much as genuine leather, and its manufacturing process generates 99 percent fewer VOCs than that of conventional synthetic leather.

Toyota's Materials Engineering Department has been studying low VOC paints in the cured form for interior components. We generally use waterborne paints due to their lower VOC content, but studies have shown some waterborne paints contain residual amounts of VOCs, such as aldehydes in the cured form. We identified several paints with a negligible contribution to the overall VOCs of plastic parts. Those paints are already in use by Toyota for interior parts, and we plan to increase their use in the future.

Auto manufacturers are working toward one global standard to test emissions of VOCs in vehicle cabins at the component level. In the meantime, a voluntary standard for the full vehicle cabin exists from the Japan Automobile Manufacturers Association (JAMA). For the 2013 model year, the North American-produced Toyota Sienna, Avalon, Corolla, Venza, Highlander, Camry, RAV4 EV, and Lexus RX 350 conform to this standard. In addition, the 2014 Toyota Tundra (launched in the fall of 2013) also conforms to this standard.

South Korea and China have recently established VOC requirements for passenger vehicles. Toyota has taken steps to ensure the vehicles being exported to those countries, including Venza, Camry, Sienna and Avalon, meet their requirements.

RELATED TOPICS

- For information on how we manage VOC emissions from painting in our operations, please visit **Operations/Air**.

RENEWABLE, RECYCLED AND RECYCLABLE MATERIALS

We use renewable, recycled and recyclable materials where practical. Over the course of a vehicle's life cycle, these materials have a smaller greenhouse gas footprint and generate less waste than their alternatives.

Over the last several years, Toyota has evaluated numerous materials made from renewable resources to assess their performance, appearance, safety and mass production capability. In addition, the automotive industry is working on finding recyclable and renewable alternatives to petroleum-derived plastics, which reduces reliance on fossil fuels.

Toyota is working with SAE's International Green Technology Systems Group on characterizing bio-based materials. This is part of a larger effort by SAE to serve as a guiding body for consensus standards development for environmental sustainability issues in the automotive sector. We have been using bio-based plastics – plastics derived either wholly or in part from plant materials – in numerous parts and components for over a decade. For example, we use bio-based plastics in the seat cushions in the Toyota Prius, Corolla, Matrix and RAV4, and in the Lexus RX 350 and CT 200h. We will continue to use these materials where appropriate.

Waste

Waste refers to everything from office trash, to cafeteria scraps and industrial waste. Minimizing waste and conserving natural resources are fundamental to Toyota's goal of producing vehicles efficiently. Toyota team members and business partners focus on reducing waste using the practices we all know: reduce, reuse and recycle.

These practices help us avoid generating waste in the first place and find the best solution for processing the waste we do generate. We work with our business partners to find ways to reuse or recycle what we can; we compost cafeteria waste in some locations; our waste is used as fuel in waste-to-energy facilities; and we divert as much as we can from going to landfill. We even recycle the vinyl from our billboards into reusable totes, trip planners and other products for the Toyota, Lexus and Scion brands.

RELATED TOPICS

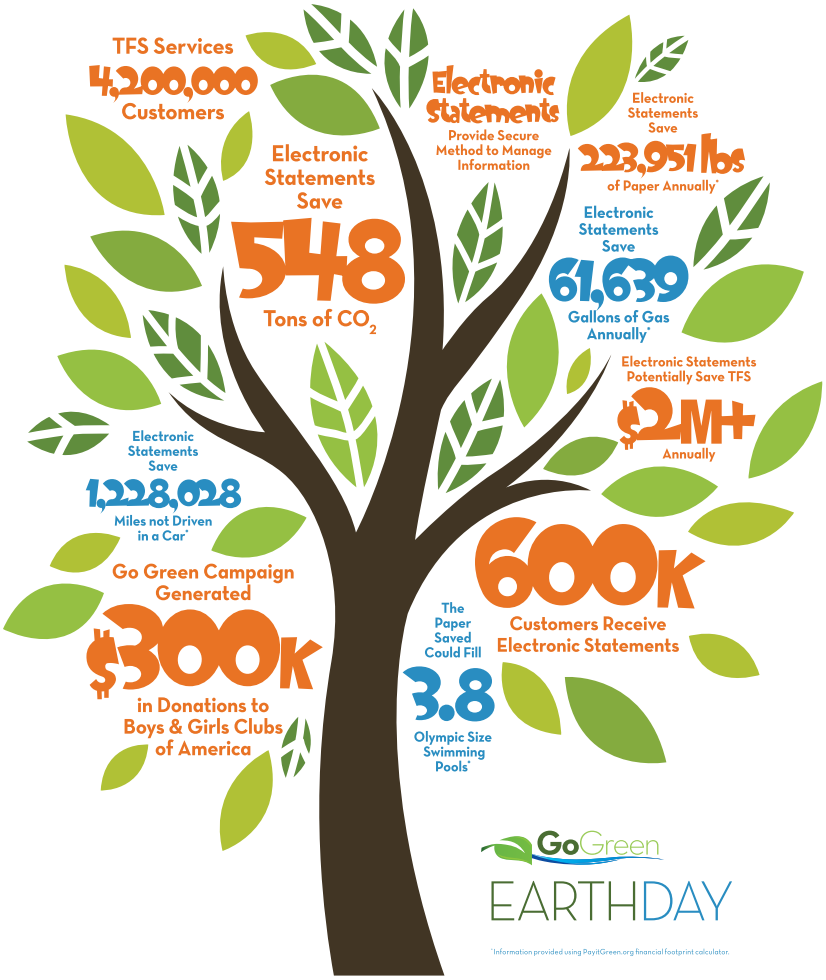
- In addition to minimizing the waste we generate in our own operations, we also work to ensure the vehicles we make are recyclable. Huge shredders allow steel and non-ferrous metals to be recycled, and new processes also enable the recycling of car materials like urethane foam, copper, glass and plastic bumpers. Toyota vehicles are now 85 percent recyclable. We design our vehicles to be made with recyclable materials to facilitate this process. For more information, please see **Materials/ Chemical Management**.
- Our suppliers help us find viable recycling options for our waste. See how Waste Management is helping us turn trash into fuel in **Business Partners/Suppliers**.
- We encourage a recycling-based society by teaching school children about recycling during Earth Week events. For more information on these activities, please visit **Communities/Local Community Engagement**.
- Watch a short video about **TOYOTA'S waste minimization activities at TMMI**.

HELPING OUR CUSTOMERS GO GREEN

Toyota and Lexus Financial Services kicked off its second annual "GoGreen" campaign, encouraging customers to sign up for paperless billing statements. Between January 15th and March 31st of 2013, for every customer signed up to "GoGreen," Toyota Financial Services donated $5 (up to $200,000) to the Boys and Girls Clubs of America.

It didn't take long to reach the $200,000 mark. Over 600,000 customers have signed up for paperless billing, saving almost 224,000 pounds of paper annually. "Our 'GoGreen' campaign has been a great success," says Karen Ideno, Vice President of Product and Marketing. "We started this program less than a year after launching paperless billing, and a record number of customers have already signed up for the program."

FG26 • GoGreen



WASTEWISE RECOGNITION

In 2012, the U.S. Environmental Protection Agency (EPA) recognized Toyota's U.S. sales and logistics division, Toyota Motor Sales, U.S.A., with a **WasteWise Large Business Partner of the Year – Honorable Mention** for our efforts to reduce waste and increase recycling.

This is our third consecutive WasteWise award. In 2011 we were the Large Business Partner of the Year, and in 2010 we received the Waste Reduction in the Workplace Gold Achievement Honorable Mention.

The WasteWise awards are the result of a team effort – all 23 U.S. sales and logistics operational sites participate in the program. This achievement is due in large part to our recycling efforts in packaging; see our story on the use of returnable containers here.

SPOTLIGHT: TOYOTA'S CAMBRIDGE, ONTARIO, PLANT WINS GLOBAL ECO AWARD

Toyota Motor Corporation (TMC) established the Global ECO Awards in 2011 to recognize the environmental achievements of Toyota manufacturing centers around the world. Each manufacturing facility selects ***kaizens*** implemented in the last fiscal year, and the best are submitted to TMC – Toyota North America's parent company in Japan – for consideration. TMC selects six ***kaizens*** from the entire global pool to receive a Gold Award. Winners of the Gold Award travel to Japan to present their ***kaizens*** at the Annual Global Environmental Meeting.

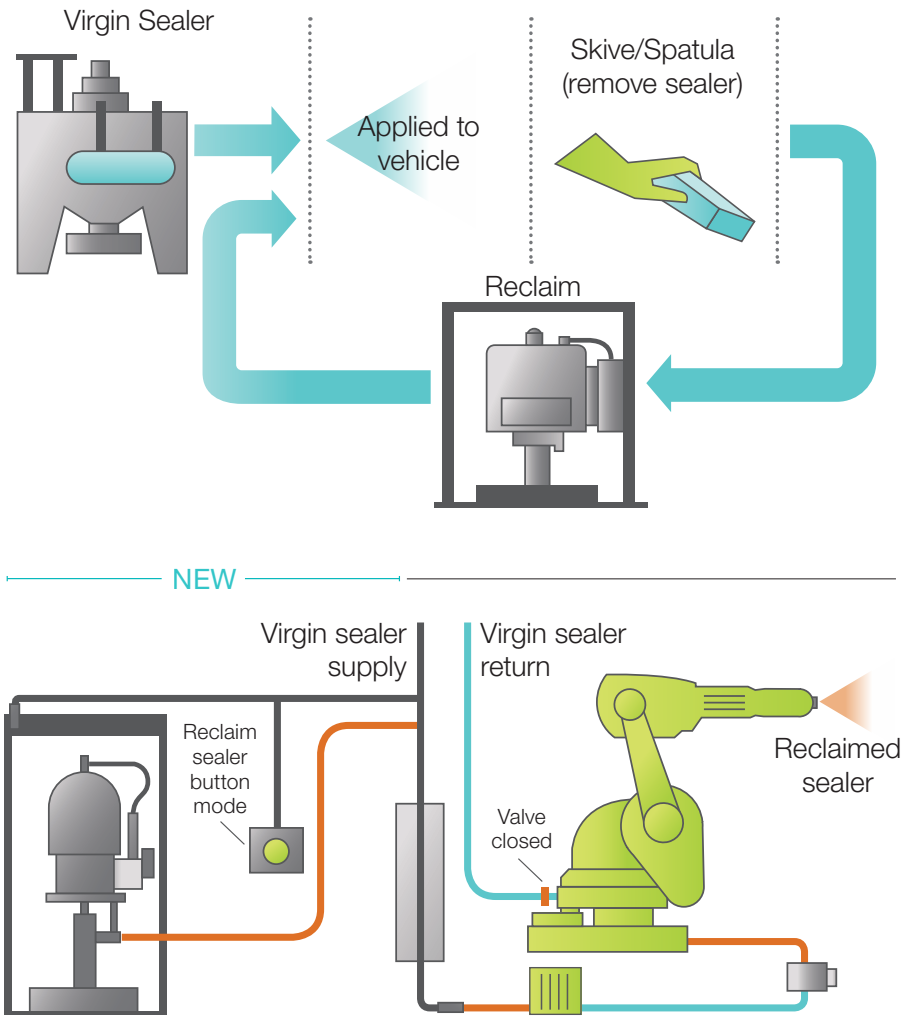
Toyota's North American manufacturing headquarters selected three ***kaizens*** to represent the region in 2012. One of the three ***kaizens*** – a sealer reclaim project implemented in the Lexus paint shop at our Cambridge, Ontario, plant – was selected for a Gold Award. The plant builds approximately 85,000 Lexus RX 350 sport utility vehicles each year. In the paint shop, all of the sealer used was virgin sealer, and all of the excess sealer was required by law to be managed as hazardous waste if disposed. The plant wanted to find a way to reduce the volume of excess virgin sealer ending up as waste, without impacting the quality of the paint finish.

Sealer systems are in continual circulation, so team members had to develop a system to capture excess sealer and reapply it to the vehicle. Team members installed a reclaim pump system with a valve to open and close, allowing them to control when the reclaimed sealer is used. The reclaimed sealer is only applied on non-visible seams in the inner shell of the vehicle.

The Cambridge plant installed a sealer reclaim system in 2012, and it has had great success. This system reduced sealer waste by 97 percent and eliminated 72 barrels of hazardous waste per year – more than 22,000 kilograms (48,500 pounds). ***Yokoten*** is already being applied on this ***kaizen***: Five North American plants have evaluated this project for possible implementation, and our plant in Indiana has already begun planning for installation. This ***kaizen*** was implemented with low cost (the payback period was less than two months) using in-house resources. It is the only known automated system in Toyota reusing sealer on robot lines.

Kevin Butt, Regional Environmental Director, Toyota North American Environmental, presents team members from Toyota Motor Manufacturing Cambridge with a Gold ECO Award. The award is in recognition of the sealer reclaim kaizen that eliminated more than 22,000 kilograms (48,500 pounds) of hazardous waste.

FG27 • The Sealer Reclaim Roboto System



Toyota's assembly plant in Cambridge, Ontario, installed a sealer reclaim system to reduce the volume of virgin sealer ending up as hazardous waste. The reclaim system has eliminated 22,000 kilograms (48,500 pounds) of hazardous waste per year, and is now being transferred through *yokoten* to other plants.

NON-SALEABLE WASTE TARGET & PERFORMANCE

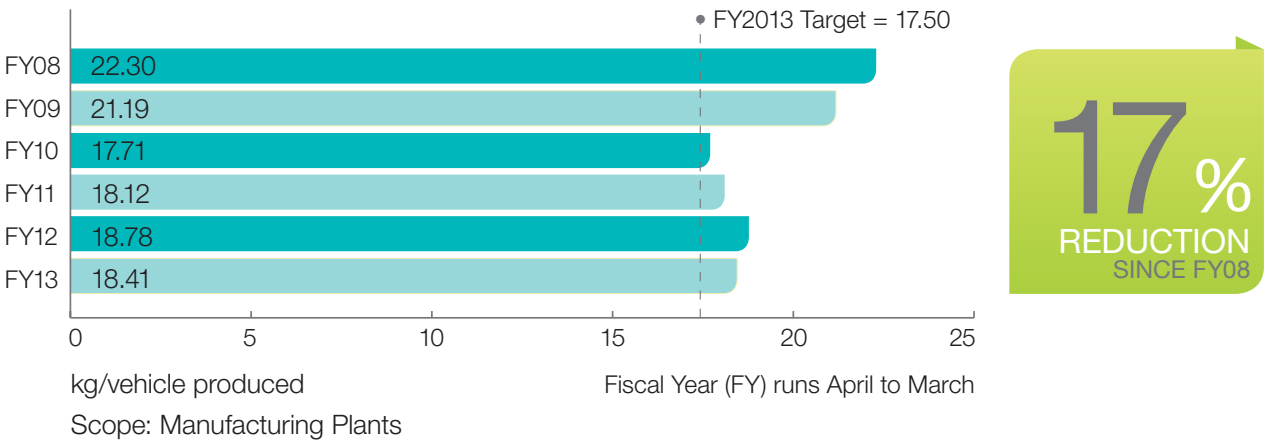
2013 Target: Reduce non-saleable waste from manufacturing plants to 17.50 kilograms per vehicle (missed)

Non-saleable waste is waste we pay to dispose or recycle (such as by incineration, landfill or conversion to energy). Since 2008, we have reduced non-saleable waste by 17 percent.

We set a target for fiscal year 2013 to reduce this type of waste at our manufacturing plants to 17.50 kilograms per vehicle. We reduced this waste from 2012 levels, but missed the target, mainly due to an increase in the amount of wastewater shipped off site for treatment. Two of our plants experienced issues with their wastewater treatment systems; countermeasures are being implemented and we are already seeing positive results.

Many of our waste streams are recycled, including virtually 99 percent of all scrap steel generated by Toyota plants. Toyota's Kentucky plant uses an intricate system to turn scrap steel from the stamping process into reusable product. Scrap steel – in the form of approximately 600-pound cubes – is returned to the mill and is eventually put back into the production process as steel coils. In addition, when doors are made in the stamping process, there is steel from the window area left over. We send these squares of top quality steel to sub-suppliers, who in turn use our steel as their raw material. From this steel, the suppliers make internal structural pieces for the vehicles made at the Kentucky plant.

FG28 • Non-saleable Waste



ZERO WASTE TO LANDFILL TARGET & PERFORMANCE

2013 Target: Achieve Zero Waste to Landfill (achieved by 10 of 14 plants)

Toyota's North American manufacturing plants have an annual target to achieve "zero waste to landfill," meaning they send no waste directly to landfill. Some waste may be sent to incineration and waste-to-energy facilities; those facilities may send the resulting ash to landfills if no beneficial use can be found. In fiscal year 2013, 10 plants achieved this target. We are working with the other plants to find suitable alternatives to landfill.

Our "zero waste to landfill" metric is driven by the Toyota Production System, where the elimination of ***muda***, or waste, in all aspects of business is a main objective. Our parent company in Japan has challenged plants worldwide to send zero waste to landfill. While this has not resulted in the elimination of all waste, it has required significant focus on all three "R's": Reduce, Reuse and Recycle. Countless ***kaizens*** help us get closer to the elimination of all waste. Coupling our goals of "zero waste to landfill" and reduction of non-saleable waste pushes us to steadily move away from landfill, incineration and even low-value recycling, and move toward waste reduction, reuse and high-value recycling.

"Zero waste to landfill" is a goal across all of our operations, not just in manufacturing. At our Canadian sales offices, 96 percent of their waste was diverted from landfill in calendar year 2012. This was achieved by recycling, reusing and composting, and no waste was incinerated.

Our 23 U.S. sales and logistics facilities achieved a combined 90 percent recycle rate in fiscal year 2013. Ten of these locations are zero waste to landfill facilities. Last year, the parts and vehicle distribution centers diverted 98 percent of their waste from landfill and incineration, and recycled over 17 million pounds of material. Noteworthy accomplishments this past year include the following:

- During the rejuvenation of Toyota's Los Angeles vehicle distribution center, 60 percent of the 3.4 million pounds of steel from security cages, bin shelving, pallet racks and bulk modules was reused, and the remainder was recycled.
- Styrofoam™ cups have been eliminated in the cafeterias at our California sales headquarters campus.
- Grease from the cafeterias at our California sales headquarters campus is being recycled into biodiesel.
- Our vehicle distribution center in San Antonio, Texas, found an opportunity to reduce scrap metal waste by returning component parts to the production cycle. On the Toyota Tundra, for example, when a customer requests an upgrade from regular exhaust pipes to dual exhaust pipes, the regular exhaust pipes are sent back to the assembly plant for reuse.

SPOTLIGHT: THE ROAD TO ZERO WASTE GOES THROUGH PRINCETON, INDIANA

Toyota Motor Manufacturing, Indiana (TMMI) was established in 1996. Located in Princeton, this plant assembles the Sequoia, Sienna, Highlander and Highlander Hybrid. In 2003 TMMI took on a significant challenge: become a "zero waste-to-landfill" facility. Zero is defined as zero: 100 percent of the plant's direct waste would have to be reduced, reused, recycled, or otherwise incinerated.

Kevin Miles has been leading the plant's waste minimization efforts since 2003. One of the first waste streams he tackled was the wastewater treatment plant sludge. Ferric sulfate was being applied to the sludge to remove metals, namely nickel. By changing the treatment chemical to a natural non-hazardous mineral, the sludge went from an iron-rich sludge that no one could use, to a calcium-rich sludge that is a perfect replacement for cement in cement kilns. This waste is now put to beneficial reuse.

Combined, the sludge from the wastewater treatment plant and the paint shop once accounted for up to 70 percent of the plant's waste to landfill every month. "We have had to think outside the box to achieve zero waste to landfill," said Kevin. "We have done some innovative things, like making pulp from our paper waste to sell to a paper recycling facility. This goal has made us smarter about how we manage our materials and how we think about waste."

TMMI has been a zero waste to landfill facility since 2010.

Kevin Miles, Specialist at Toyota Motor Manufacturing, Indiana, performs a jar test to demonstrate how lime slurry separates and cleans up wastewater. The lime performs very well, reducing wastewater sludge by four pounds per vehicle. And the plant is able to recycle the lime mixture that's left over by drying it and sending it to a cement kiln.

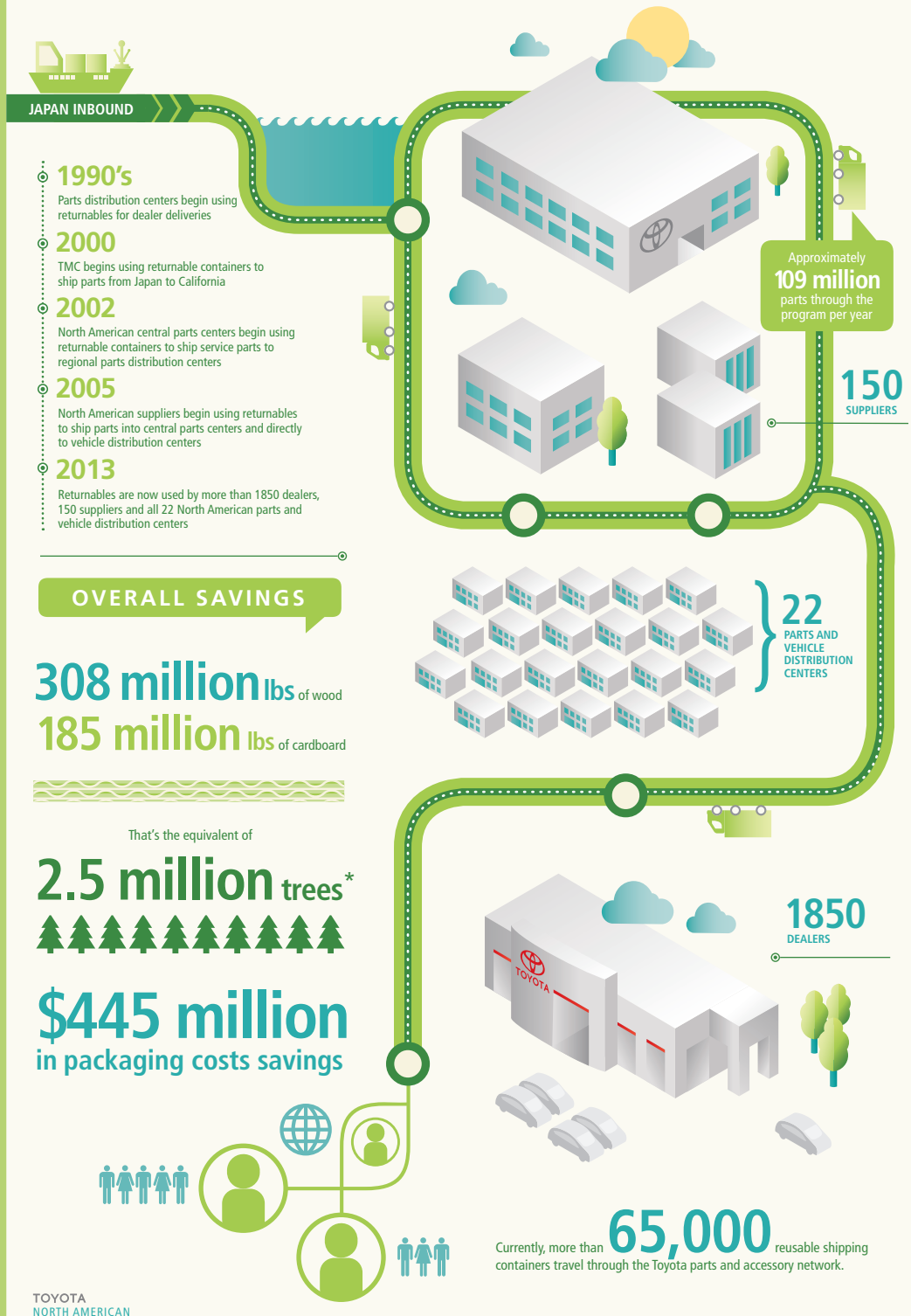
SPOTLIGHT: PACKAGING REDUCTIONS

Toyota's North American Parts Operation uses over 65,000 reusable metal shipping containers in place of cardboard and wood pallets to move over 109 million service and accessory parts between parts distribution centers, dealers and suppliers. The returnable containers are also used increasingly for shipments to Canada, Mexico and Puerto Rico. Close to 150 of our North American suppliers use returnable containers.

During fiscal year 2013, we added 25 suppliers to our returnable container program and saved almost 53 million pounds of wood and 25 million pounds of cardboard.

EVOLUTION OF RETURNABLES

Since 2002, Toyota's parts and accessories returnable container program has saved over 308 million pounds of wood and over $445 million in packaging costs. These savings equal more resources for the future and lower costs for our parts and accessories.



TOYOTA
NORTH AMERICAN
Environmental

*Environmental impact estimates for cardboard only were made using the Environmental Paper Network Paper Calculator Version 3.2.

WATER

There is growing concern about the availability of sufficient fresh water to meet people's needs in the coming decades. In North America, we are concerned with the declining quality of fresh water sources and scarcity during droughts.

Water issues concern a growing number of communities, and many of our North American manufacturing sites have experienced water-related stresses firsthand. For example, at our Georgetown, Kentucky, assembly plant, drought conditions have led to restrictions on water use.

Toyota globally considers water to be a high-priority environmental issue. Effective water management requires consideration of many factors, such as the volume of water used, discharged, recycled and reused, the quality of the water we discharge, and stormwater management. To help us manage these issues, we formed a North American Water Group to develop a water strategy and set targets.

Our water management strategy addresses each level in the water conservation pyramid – Reduce, Reuse and Recycle. Reduce is the foundation, providing the most opportunities for improvement at the lowest cost. It is the fundamental first step in water management. The middle level, Reuse, maximizes the value of the water used. At the top of pyramid is Recycling, the most costly and difficult to implement. Innovation is needed to make recycling a more viable option than it currently is.

STORMWATER MANAGEMENT

Stormwater is rainwater and melted snow that runs off streets, parking lots and other impervious surfaces. Stormwater either flows into streams and rivers, or is absorbed into the ground, filtered and ultimately replenishes aquifers. Impervious surfaces such as pavement and roofs prevent precipitation from naturally soaking into the ground. Instead, the water runs rapidly into storm drains, sewer systems and drainage ditches, and eventually makes its way into rivers, lakes and oceans. If unattended, there is potential for debris, chemicals, sediment or other pollutants to accumulate and contaminate streams and rivers.

Toyota is concerned about the impact of our operations on local water bodies. Because stormwater can potentially contaminate local streams, we start managing stormwater even before our facilities are built. For example, as our plants are designed, we evaluate how water will flow across the property and establish practices to minimize the risk of contamination and ensure compliance with federal, state and local stormwater regulations.

At our vehicle logistics center co-located with our plant in San Antonio, Texas, the outdoor storage of scrap metal and replacement railcar axle assemblies was identified as having the potential to contaminate stormwater runoff. A retractable cover was added to the scrap metal bin and the ends of the axle assemblies were wrapped to prevent rainwater from making contact. These small, inexpensive measures are relatively easy to implement but go a long way toward reducing the risk of contaminated runoff.

NORTH AMERICAN MANUFACTURING PLANTS

Many of our plants were built decades ago, and periodically we need to re-examine our management practices to ensure we are still minimizing risk. During the course of 2011 and 2012, we conducted a stormwater risk assessment at all 14 North American manufacturing plants plus three research and development centers. At each location, engineers from our manufacturing headquarters were joined by a member of the site's facilities group and a member of the environmental department. Together, they reviewed stormwater permits and site drawings to understand how water flows through the site and where water leaves the site.

The risk assessment team performed three activities as part of a ***genchi genbutsu***, or "go and see and find the facts to analyze the root causes:" a roof walk, a perimeter walk and a site drive. During the roof walk, the team evaluated rooftop equipment such as exhaust fans, HVAC units and roof-mounted cooling towers; if this equipment leaks on the roof, run-off has the potential to reach roof drains and eventually make its way to stormwater retention ponds. The team then walked the building perimeter to evaluate equipment, tanks and containment areas. During the site drive, the team examined areas where water leaves the site, in particular sluice gates at stormwater retention ponds. These activities helped the team understand where and how contamination of stormwater could occur.

The team applied concepts of the Toyota Way throughout the assessment to examine the current situation and identify the problem. The assessment led to the creation of a draft Stormwater Master Maintenance Plan, as well as several ***kaizens*** to internal standards, including those for covering scrap metal boxes, inspecting roof equipment, managing valved trench containment, and training for non-standard conditions. Our North American manufacturing plants implemented the following ***kaizens*** in fiscal year 2013:

- Our plant in British Columbia installed a steel liner under a metal chip storage area to further contain the chips and any oil that might be present.
- Our plants in Mississippi and West Virginia modified drainage patterns around ponds to reduce erosion and the potential for suspended solids leaving the site.
- Our plant in Tecate (Mexico) installed piping to allow stormwater collected in the gasoline tank's secondary containment area to be treated at the on-site wastewater treatment plant.
- Our plant in Indiana added secondary containment around cafeteria grease containers and piloted the use of portable plastic containment systems under roll-off boxes stored in yards.
- Our plant in St. Louis, Missouri, added spill kits and point-of-use placarding at truck docks.
- Our plant in Troy, Missouri, integrated stormwater system checks into their existing facility maintenance scheduling program.

These ***kaizens*** were included with a comprehensive list of Stormwater Successful Practices being transferred through ***yokoten*** to all of the plants and research and development facilities.

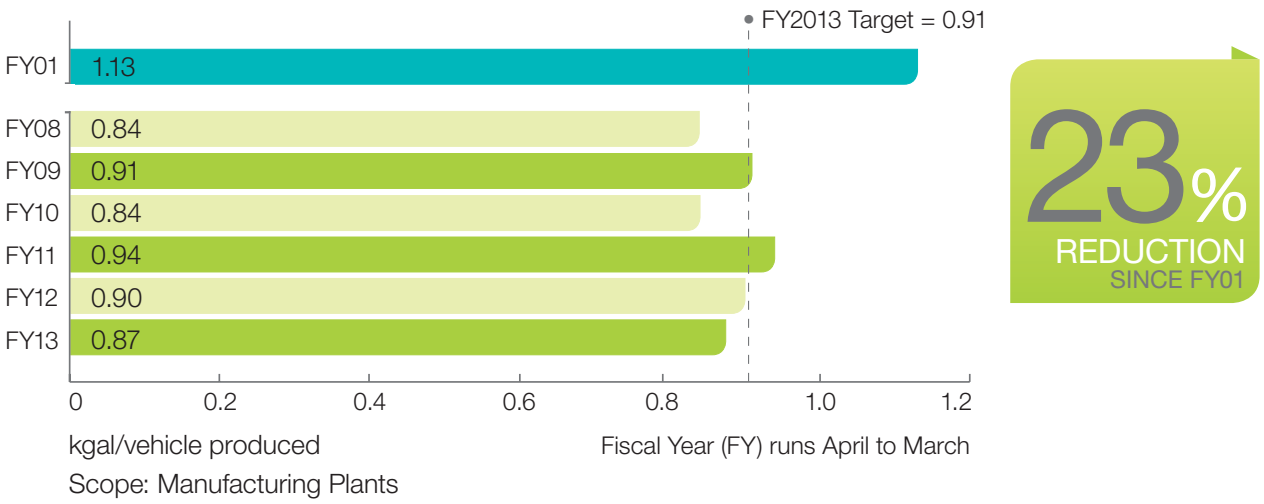
TARGET & PERFORMANCE

2013 Target: Reduce water usage of 0.91 kilogallons per vehicle at Toyota's North American manufacturing plants (achieved)

Toyota's assembly plants are our biggest users of water. Our sales and logistics sites use water primarily for landscaping and sanitation; these volumes are minimal compared to the volume of water used for cooling and painting at our assembly plants.

Toyota's manufacturing plants had a fiscal year 2013 target to reduce water usage from our 2012 target level of 0.92 kilogallons/vehicle, to 0.91 kilogallons per vehicle. We achieved this target and reduced water usage by three percent, to 0.87 kilogallons per vehicle.

FG30 • Water Use



SPOTLIGHT: WATER SAVINGS

At Toyota, we are saving over 61 million gallons of water each year by implementing reverse osmosis concentrate recovery systems. That's the equivalent of about 97 Olympic-size swimming pools, 61 million gallons that we don't have to withdraw from an aquifer or buy from a utility. These systems are being shared and transferred through ***yokoten*** from one plant to the next, and each time, it gets better and better. They are in place at our plants in Cambridge, Ontario; Princeton, Indiana; Georgetown, Kentucky; and Tecate, Mexico.

FG31 • Saving Water

Many processes in Toyota's North American manufacturing plants require very pure water to function properly. As a result, the incoming water must be purified before it can be used. Typically, 25% of the incoming water would be rejected at the filter, and immediately sent to waste.

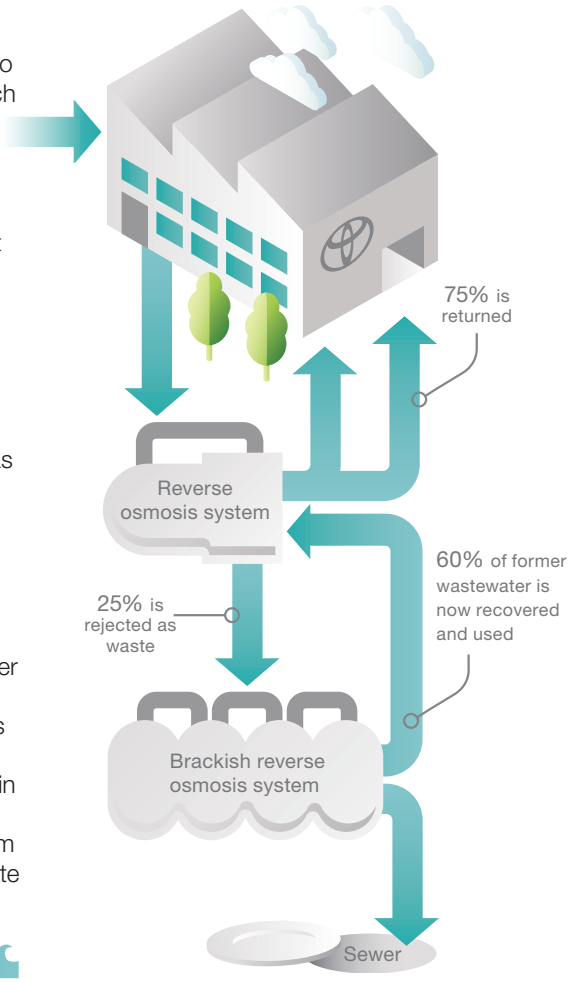
A number of Toyota's plants are implementing brackish reverse osmosis systems. These systems refine very impure water, making more of it usable and saving millions of gallons in the process.

STEP 1 Water comes into the plant to be refined for processes such as painting vehicles.

STEP 2 The water goes through prefilters and is fed into a reverse osmosis system that further separates impurities before being used in the manufacturing process.

STEP 3 (old way) From there, 75% went straight to the process for use and 25% was rejected as waste due to containing the concentrated impurities.

STEP 3 (new way) The 25% that contains impurities now goes into what's called a brackish reverse osmosis system. After further filtering, 60% of that waste is recovered and goes back into the first reverse osmosis system to be used in the manufacturing process. As a result, the overall system improved from a 75% use rate to a 90% use rate.



Toyota is saving **61 million gallons** of water each year. That's the equivalent of about **97 Olympic-size swimming pools**

TOYOTA MOTOR MANUFACTURING CANADA

Last year we reported on the reverse osmosis (RO) concentrate recovery system installed at our assembly plant in Cambridge, Ontario. This system is saving 13 million gallons (50,000 cubic meters) of water per year. The Cambridge plant builds about 260,000 Corollas, Matrix's and Lexus RX 350's annually. A similar system is planned for the Woodstock plant in fiscal year 2014. For more information on the RO system at our Cambridge assembly plant, please see the spotlight story on water savings in the 2012 North American Environmental Report (please visit Eco-Efficient Operations/Water, then scroll down a little to ***Spotlight: Water Savings at our Plant in Cambridge, Ontario***).

TOYOTA MOTOR MANUFACTURING, INDIANA

The State of Indiana, together with Louisiana, accounts for 32 percent of the total fresh surface-water withdrawals in the United States. While water scarcity in the state is not an issue today, Toyota is planning for the future and doing its part to be a responsible water user.

The reverse osmosis concentrate recovery system implemented in Princeton, Indiana, was transferred and adapted – through ***yokoten*** – from our plant in Cambridge. Each plant is a little different, so team members in Indiana made some ***kaizens*** – such as eliminating the need to batch water and reducing the number of pumps – to make the system work for them. The Princeton plant launched the RO concentrate recovery system in late fall 2012 and has achieved impressive results: The plant is saving 15 million gallons per year and reducing per vehicle water use by about 50 gallons, for a savings of over $90,000 per year. This is enough water to supply 137 average U.S. households annually. The plant assembles approximately 290,000 Sequoias, Siennas and Highlanders annually.

Paul Delor, Environmental Specialist at Toyota Motor Manufacturing, Indiana, stands in front of the plant's reverse osmosis concentrate recovery system. This system is saving the plant 15 million gallons of water per year, or enough water to supply over 100 U.S. households annually.

TOYOTA MOTOR MANUFACTURING, KENTUCKY

Toyota's assembly plant in Georgetown is our largest water consumer in North America. The assembly plant uses roughly one million gallons of water each day it operates. The plant assembles approximately 500,000 Camry, Camry Hybrid, Venza, Avalon and Avalon Hybrid vehicles annually, as well as 4-cylinder and V6 engines and powertrain parts. The plant also provides a number of components to other locations.

About 25 percent of the water coming into the plant from Kentucky American Water was rejected by the RO filtration system and was being sent to the Georgetown sewer system. Team members at the plant wanted to use more of this water, so they installed a brackish reverse osmosis system. Now only about 10 percent of the water coming into the plant ends up down the drain. The new system is expected to save 17 million gallons and more than $70,000 annually. The new system paid for itself in just seven months.

"It's a better way to truly reduce water use," said Bill Thiry, Assistant Manager of Utilities Engineering and Energy Management. "Now we're recycling water – we've reached the top of the water conservation pyramid."

In an effort to reduce water use, Toyota team members Bethany Giordano, Jeff Bacchus and Doug Brinker have been implementing a brackish reverse osmosis system at Toyota's Georgetown, Kentucky, assembly plant. This system allows the plant to save nearly 17 million gallons of water a year.

TOYOTA MOTOR MANUFACTURING DE BAJA CALIFORNIA

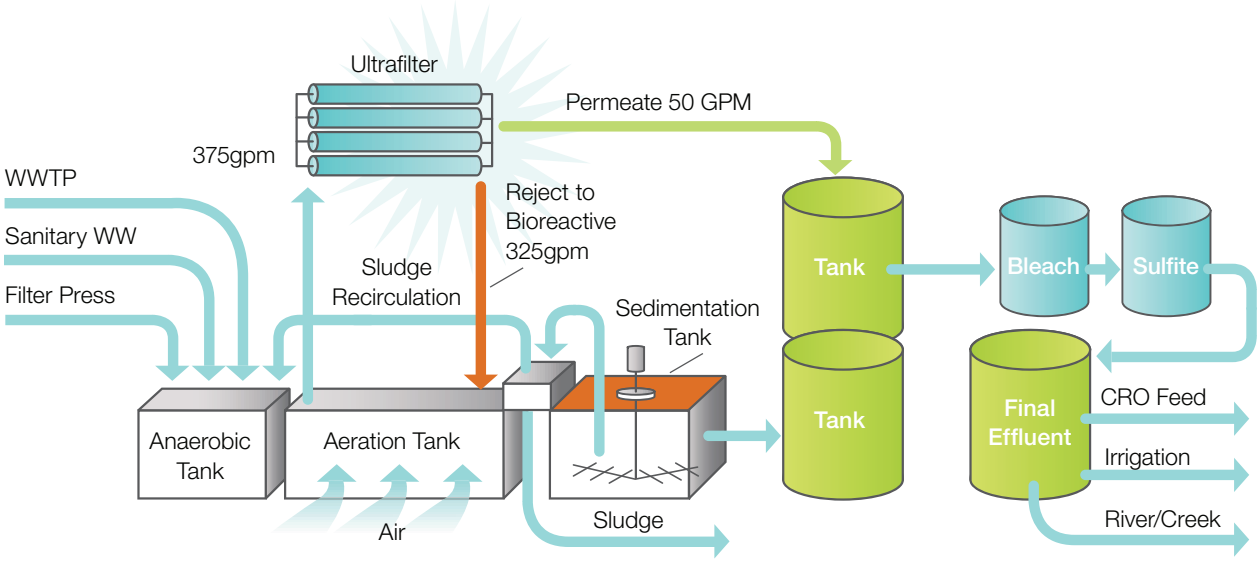
Our plant in Tecate, Mexico, is located in an area identified by the Global Water Tool© developed by the World Business Council for Sustainable Development as "scarce" on its mean relative annual water stress index. This means we pay close attention to the amount of water we withdraw and use here, and make every effort to reduce, reuse and recycle.

We completed a reverse osmosis concentrate recovery project at our Tecate plant that is recycling 700,000 gallons of water per month. This project takes reverse osmosis (RO) reject water and redirects it from the wastewater plant to another RO machine set up for brackish water.

We have also installed an ultrafilter to turn the plant's biological treatment system into a membrane bioreactor. This will enable recycling of 50 gallons per minute of wastewater, which further reduces water use at the plant by eight million gallons per year.

Total water recycled at this location could approach over 16 million gallons per year. We are using this project as a pilot for possible ***yokoten*** to other North American plants.

FG32 • Water Savings Project



Our plant in Tecate installed an ultrafilter that turns the plant's biological treatment system into a membrane bioreactor. The ultrafilter is part of a reverse osmosis system that recycles over 16 million gallons annually.

BUSINESS PARTNERS

> BUSINESS PARTNERS

Toyota's principal business partners are suppliers and dealerships. We work with both of these groups in North America to encourage them to support our environmental values and goals.

When engaging with our business partners, we use the same principles from the Toyota Way that guide our own actions. We practice *yokoten* and promote the process of setting targets and conducting treasure hunts to find *kaizens*, continuous improvement opportunities. Together, we are able to reduce the environmental impacts of building and selling our vehicles.

In Vehicles and Operations, we highlighted examples of our efforts to become more efficient and reduce waste. In this chapter, we highlight similar activities by our suppliers and

dealerships. For example, we've helped our suppliers identify annual energy savings of over 43.5 million kilowatt-hours per year. And, by certifying to the U.S. Green Building Council's LEED® program, a growing number of our dealerships are using less water and energy, recycling more, and generating less waste. By working to increase their own efficiency and reduce waste, our business partners are supporting Toyota's mission to respect the planet and contributing to a more sustainable future.

SHARING

The Japanese word ***yokoten*** is translated loosely as sharing lessons learned. When a project finishes at Toyota, we methodically try to preserve what went well and create countermeasures for what did not. Lessons learned are incorporated into the standard process so that when we repeat it, we improve over the last time. When we practice ***yokoten***, we share not only the methods and procedures, but also the reasons changes were made and what mistakes were made. By openly communicating and sharing this information horizontally across the organization, we foster a learning organization.

SUPPLIERS

Toyota recognizes that environmental impacts extend into our supply chain. We have a vast network of suppliers providing us with everything from parts and accessories, to waste management and cafeteria services and office supplies. We work closely with our suppliers to share our knowledge and experience to help them improve their environmental performance.

PERFORMANCE

We facilitate "treasure hunts" with interested suppliers to help them identify ways to reduce their energy use. This is one way we practice ***yokoten***, or share our knowledge and experience, outside the organization. Since 2008, Toyota has shared our energy treasure hunt process with 180 Tier 1 (direct) suppliers. We have also participated in treasure hunts with 41 suppliers, helping them identify annual energy savings of over 43.5 million kilowatt-hours – equivalent to 15,200 metric tons of CO_2 per year.

During a treasure hunt, participating suppliers agree to host and allow other suppliers to enter their facility. Treasure hunts are conducted from Sunday to Monday to ensure participants see the plant in its rest, start up and production modes. Participants receive training, access to Toyota's energy tools, and support from the engineering team on investigating and designing energy reduction projects.

RELATED TOPICS

- For more information about how we improve our own energy performance, please visit **Operations/Carbon**.

SPOTLIGHT: WASTE MANAGEMENT TURNS TOYOTA'S TRASH INTO FUEL

Toyota's truck assembly plant in San Antonio, Texas, reduced landfill waste by 71 percent through an innovative partnership with Waste Management, Inc. Toyota sends about 65 tons per month of trash from the assembly plant to Waste Management's first-ever process-engineered fuel facility at Covel Gardens. Here, the trash is pelletized into SpecFUEL™, a high-BTU and clean-burning fuel.

Waste Management's SpecFUEL is a sustainable energy alternative to coal, biomass and other traditional solid fuels. It is used to produce steam, electricity or heat for kilns or industrial boilers that typically burn non-renewable fossil fuels to produce energy. Produced under strict, engineered controls, SpecFUEL is created by mechanically extracting beneficial materials contained within municipal solid waste such as recyclables, organics and non-recyclable commodities. What's left is then categorically separated and proportionately recombined to produce fuel pellets.

After two years of testing and evaluations to ensure Toyota's waste met Waste Management's specifications, our Texas plant finally began sending trash to Waste Management's newly completed fuel facility in early 2013.

Green Metals, Inc., our recycling partner in San Antonio, played a vital role in the success of this project. Since 2008, Green Metals has been looking for a viable waste-to-energy option for the Texas plant. "A number of options were on the table early on," said Eddie Metz, Operations Manager at Green Metals. "But when the recession came, things changed. So we kept our eyes and ears open, and when Waste Management began building the facility in Covel Gardens, we knew all the pieces of the puzzle were finally fitting together."

Team members at Toyota's Texas plant are excited about this partnership. Not only does this project help us get closer to our "zero waste to landfill" goal in San Antonio, it is also spurring additional ***kaizens***. For example, team members have improved waste sorting to increase the capture of recyclable material. And, since food waste is too wet to be pelletized, team members are looking for compost options.

The alternative to pelletizing would have been a 600-mile journey for our waste to the nearest waste-to-energy facility. The Covel Gardens plant is only 14 miles from our Texas plant, and the SpecFUEL is used by a cement manufacturing facility 29 miles from Covel Gardens. This partnership is a win for everyone: We reduce waste to landfill and avoid greenhouse gas emissions; Waste Management gets a reliable waste stream; and the use of this fuel reduces emissions from the cement plant of sulfur, mercury and greenhouse gases. This process can also be transferred through ***yokoten*** to our on-site suppliers and to other companies in the San Antonio area.

"Team members here at the Toyota plant in San Antonio are committed to following our company's Global Vision and Earth Charter," said Chris Nielsen, President of Toyota Motor Manufacturing, Texas. "We strive for zero emissions and zero waste, so we are pleased the partnerships with Waste Management and Green Metals have helped us overcome significant challenges in finding a suitable alternative to landfill. Waste Management's waste-to-fuel technology has been a major step forward in our efforts to become a zero waste to landfill facility."

Trash from our Texas assembly plant is sent to Waste Management's fuel facility at Covel Gardens. Here, the trash is pelletized into SpecFUEL™, a high-BTU and clean-burning fuel. And waste to landfill from our Texas plant is reduced by 71 percent. Holding SpecFUEL pellets, Toyota team member Paul Chroniak stands between Eddie Metz and Maria Armijo of Green Metals, our recycling partner in San Antonio who played a vital role in the success of this project.

DEALERSHIPS

There are approximately 1,850 Toyota and Lexus dealerships in the United States, Canada and Mexico. These dealerships are all independently-owned franchises. In keeping with our overall philosophy, it is important we share our environmental values and our know-how with the dealership population and support their efforts to be environmentally responsible.

We work closely with our dealerships to promote green building practices, since buildings – both residential and commercial – have a large environmental footprint. Buildings are responsible for about one-third of the energy consumed in the United States and Canada. Green buildings can reduce energy use and associated greenhouse gas emissions by 25-60 percent, water use by 30-95 percent, and solid waste by 50-95 percent, and they have been shown to improve employee health and productivity.

Both our Toyota and Lexus divisions work with dealers on new construction and remodeling projects through programs that encourage sustainable building practices and the use of the Leadership in Energy and Environmental Design (LEED®) rating system. LEED is a point-based system administered by the U.S. and Canadian Green Building Councils promoting a whole-building approach to sustainable construction and remodeling. LEED certification is based on meeting stringent evaluations in sustainable site development, water savings, energy efficiency, materials selection and indoor air quality.

We emphasize three areas to our dealerships to get the best return on investment from green building practices: using high-quality materials on the building envelope (particularly the insulation and the roof), using LED lighting in both interior and exterior areas, and right-sizing the heating, ventilation and air-conditioning systems. A study performed on LEED-certified Toyota dealerships shows the average dealer who completes the LEED process can save up to 69 percent on their energy costs per square foot per year (based on a 52,000 square-foot building). The often rapid return on investment for environmentally sustainable materials, energy-efficient lighting fixtures and other LEED elements confirms the economic benefit of building green.

Toyota has been working on LEED projects with our dealers since 2005. We have created a body of knowledge about our dealership population by closely tracking utility cost and usage information, from LEED and non-LEED dealerships alike. This data allows us to identify opportunities for improvement, and, by questioning monthly changes in water use, has even led to the identification of a water leak at a dealership in California. By collecting this information and practicing ***yokoten*** – adopting successful practices as standard and then sharing them – Toyota is helping our dealership population understand the many positives of building green.

PERFORMANCE

We are leading the industry with the number of dealerships certified to LEED. So far, we have assisted 36 Toyota and Lexus dealerships in the United States and Canada with LEED certification: 28 Toyota dealerships and four Lexus dealerships in the U.S., and four Toyota dealerships in Canada. Several more dealerships have completed construction and are waiting

for their ratings to be decided. Many more are under construction or in the design and permitting phase and have registered their intent to pursue LEED with the U.S. or Canadian Green Building Councils. In North America, Toyota and Lexus dealerships combined have over 2.1 million square feet of LEED-certified building space.

"Toyota is a proponent of LEED-certified dealerships for many reasons," said Ernest Bastien, Vice President of Retail Market Development at Toyota Motor Sales, U.S.A., Inc. "When a Toyota or Lexus dealer facility team meets green building standards developed by the U.S. Green Building Council, they receive attention not only for the energy cost savings, but also for being responsible members of the community. Toyota and Lexus have more LEED-certified dealers than the rest of the auto industry collectively."

FG33 • North American Toyota and Lexus Dealerships With LEED® Certifications

DEALER NAME	LOCATION	YEAR CERTIFIED	CERTIFICATION LEVEL
OpenRoad Lexus	Richmond, British Ontario, Canada	2013	Silver
DCH Toyota of Torrance	Torrance, California	2013	Gold
Westbrook Toyota	Westbrook, Connecticut	2013	Certified
Toyota of Lakewood	Bradenton, Florida	2013	Certified
Tustin Toyota	Tustin, California	2013	Silver
Kenny Ross Toyota	Coraopolis, Pennsylvania	2013	Certified
Welland Toyota	Welland, Ontario, Canada	2012	Gold
Beaverton Toyota (TCSC)	Beaverton, Oregon	2012	Gold
Grappone Toyota	Concord, New Hampshire	2012	Certified
San Francisco Toyota	San Francisco, California	2012	Platinum
Alamo Toyota	San Antonio, Texas	2012	Silver
Sun Toyota	Holiday, Florida	2012	Gold
Vancouver Toyota	Vancouver, Washington	2012	Silver
Bennett Toyota	Allentown, Pennsylvania	2012	Gold
Toyota of the Black Hills	Grand Forks, South Dakota	2012	Silver
Maguire Toyota	Ithaca, New York	2012	Platinum
Toyota Scion of Bend	Bend, Oregon	2011	Gold
Beaman Toyota	Nashville, Tennessee	2011	Certified
Legends Toyota	Kansas City, Kansas	2011	Gold
Lexus of Henderson	Henderson, Nevada	2011	Gold
Stouffville Toyota	Stouffville, Ontario, Canada	2011	Gold
Dave Mungenast Lexus of St. Louis	St. Louis, Missouri	2010	Silver
Grossinger City Toyota	Chicago, Illinois	2010	Silver
James Toyota	Flemington, New Jersey	2010	Silver
Jerry Durant Toyota	Granbury, Texas	2010	Silver
Kendall Toyota	Eugene, Oregon	2010	Platinum
Stratford Toyota	Stratford, Ontario, Canada	2010	Gold
Toyota of El Cajon Certified Center	Santee, California	2010	Gold
Toyota of El Cajon	El Cajon, California	2010	Silver
Caldwell Toyota	Conway, Arkansas	2009	Gold
Fitzgerald's Lakeforest Toyota	Gaithersburg, Maryland	2009	Gold
Lexus of Las Vegas	Las Vegas, Nevada	2009	Gold
Mark Miller Toyota	Salt Lake City, Utah	2009	Gold
Sewell Lexus Pre-Owned	Fort Worth, Texas	2009	Gold
Toyota of Rockwall	Rockwall, Texas	2008	Gold
Pat Lobb Toyota	McKinney, Texas	2007	Silver

HENDRICK LEXUS

The new Hendrick Lexus facility in Merriam, Kansas, has been completed and is currently in the mid-stage of final documentation submittals to the U.S. Green Building Council for their LEED certification. When it receives certification, it will be the sixth LEED Lexus dealership in North America.

Examples of sustainable strategies implemented to reduce or eliminate impacts to the environment and lower operating costs include:

- Installing a white roof, thermoplastic polyolefin (TPO), and R-30 insulation on all roof surfaces to minimize heat gain and increase energy efficiency.
- Commissioning high-efficiency HVAC equipment with multi-zone variable air volume (VAV) systems, single zone VAV systems, and infrared heaters along with a lighting control system to verify installation, calibration and performance are operating to design requirements.
- Purchasing Green Power from grid-sourced renewable energy technologies.
- Installing lavatory faucets and low-flow plumbing fixtures with sensor flush valves in guest and employee restrooms, and a high-efficiency landscape irrigation system to reduce water consumption by approximately 30 percent.
- Installing low emitting carpet and composite wood products with low volatile organic compound (VOC) sealants and adhesives.
- Implementing a recycling program for both guests and employees.

“We are proud to have the nation’s first side-by-side Lexus and Toyota LEED-certified facilities,” said Rick Ulin of Hendrick Automotive Group. “Green building helps us meet our strong commitments to our customers, communities and the manufacturers we represent by reducing our environmental impact.”

At Hendrick Lexus in Merriam, Kansas, daylight sensors turn off lighting when proper light levels are provided by natural light from skylights and clerestory windows. A programmable lighting control system will automatically turn off facility lighting after hours.

CANADA'S THIRD LEED GOLD DEALERSHIP: WELLAND TOYOTA

Welland Toyota achieved a special milestone. As part of a CAN$3.2 million project to create a state-of-the-art, 2,000-square-meter building, Welland Toyota incorporated a host of green elements to become the third Toyota dealership in Canada to obtain Gold certification in the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System.

The Welland facility boasts many leading-edge features that have resulted in substantially reduced use of water and energy, along with significant waste reductions. Highlights include:

- Savings of 100 percent on landscape irrigation, 97 percent on sewage conveyance, and 85 percent on potable water as a result of low-flow fixtures and a 50-cubic-meter cistern to capture rainwater, plus having an on-site stormwater treatment system.
- Using reclaimed water for washing vehicles, to save 600 cubic meters per year of water.
- Energy cost savings of 54 percent through radiant floor heating, high-efficiency boilers, VRF cooling, state-of-the-art lighting, and a roof finished in reflective materials to reduce energy demands in the summer.
- Using FSC (Forestry Stewardship Council) certified products, ensuring wood products come from sustainably grown forests.
- Diverting 92 percent (131 tons) of construction waste from landfill, while using 17 percent recycled materials in construction, with 25 percent of materials regionally sourced.
- Initiating a comprehensive green housekeeping program.

"We take great pride in this outstanding new facility that demonstrates how good business and doing what's right for the environment can go hand in hand," said George Farlow, Dealer Principal of Welland Toyota. "We're excited about serving our customers in a home that serves as a model in the Niagara region, setting the highest possible standard of excellence in environmental design."

Welland Toyota is our third LEED-certified dealership in Canada. It earned Gold certification by incorporating a host of green elements to reduce energy and water use, recycle, and reduce waste going to landfills.

SPOTLIGHT: TOYOTA'S PLATINUM LEED DEALERSHIPS

Of Toyota's 36 LEED certified dealerships, three are certified Platinum, the highest level of certification granted by the U.S. Green Building Council:

- San Francisco Toyota in California, certified in 2013
- Maguire Toyota in New York, certified in 2012
- Kendall Toyota in Oregon, certified in 2010

One of the focal points of LEED certification is materials management, which encompasses conservation of natural resources, waste minimization, recycling and material sourcing. Buildings with Platinum LEED certification recycle demolition and construction waste as well as paper, plastics, metals and oil from the dealership's daily activities, reduce inefficiencies in water and energy consumption, and use recycled content and sustainable materials in everything from the floors to the furniture. Read on to find examples of these practices at Toyota's three Platinum LEED dealerships.

San Francisco Toyota

Toyota's latest dealership opening in San Francisco is the company's third LEED Platinum-certified dealership in the United States and the first ever for California. Originally a barn in the 1800's used to house horses that pulled cable cars along Geary Street, San Francisco Toyota is the last dealership in what was once a robust auto row. Nearly 100 percent of the original structure was left intact, including the brick walls, wood timber roof and concrete flooring.

Recycled content and sustainable materials, such as bamboo and FSC-certified wood, were used throughout the showroom and in employee areas. In total, over 75 percent of nonhazardous construction waste and demolition debris was recycled.

The showroom features strategic day lighting, high-efficiency heating and cooling systems, and energy-efficient lights. The rooftop photovoltaic solar array produces approximately 80 percent of the building's electrical needs.

In addition to providing training on eco-friendly practices and ensuring all dealer employees understand the sustainable aspects of the building, employees are encouraged to utilize nearby public transportation or bike to work. Employee areas have designated recycling stations for paper, glass, metals and plastics in coordination with San Francisco's mandatory recycling and composting ordinance.

As a leader in providing electric vehicles to the Bay Area, San Francisco Toyota has a designated parking spot for on-site electric vehicle charging. One of the most innovative additions to San Francisco Toyota is the 2013 Toyota RAV4 EV. The 2013 RAV4 EV marries the efficiency of an electrical vehicle with the versatility of a small SUV – and is the only all-electric SUV on the market. A product of a unique collaboration with Tesla Motors, the RAV4 EV combines a Tesla-designed and produced battery and electric powertrain with Toyota's most popular SUV model.

Recycled content and sustainable materials, such as bamboo and FSC-certified wood, were used throughout the San Francisco Toyota showroom. The showroom features strategic day lighting, high-efficiency heating and cooling systems, and energy-efficient lights.

Maguire Toyota

The earth-friendly efforts of the Maguire Family of Dealerships have resulted in a LEED Platinum certification from the U.S. Green Building Council for the Maguire Toyota, Scion, Kia, Volvo, Volkswagen and Audi store in Ithaca, New York. Maguire Family of Dealerships is the first and only multi-brand dealership to receive this prestigious certification in the United States.

Maguire can reuse roof-collected rainwater to wash cars, flush toilets, and landscape. The building's new roof includes 180 solar panels generating 20 percent of the store's electricity. The store can also reuse engine waste oil from customers' oil changes by recycling it into various renewable applications.

Even the renovation and construction practices of the building earned high green marks, as Maguire reused 95 percent of the building's original structure and recycled 97 percent of the project's construction waste.

"We made this investment because it was the right thing to do for both our customers and our community. It was our way to contribute toward making Ithaca a better place to live, visit, and do business," says Tim Maguire, co-owner of the Maguire Family of Dealerships (with Phil Maguire).

Maguire is using 64 percent less water and 45 percent less energy than a building of comparable size. The lighting is more efficient than industry standards; the dealership uses only one watt per square foot.

In 2012, the Maguire Family of Dealerships became the second Toyota dealership to receive Platinum LEED certification. Maguire uses only one watt per square foot for its lighting needs, and reuses rainwater collected from the roof to wash cars, flush toilets, and landscape.

Kendall Toyota

Kendall Toyota in Eugene, Oregon, was Toyota's first Platinum LEED certification. Certified in 2010, the dealership has solar panels to meet 40 percent of the building's energy needs, and captures and recycles 60 percent of the rainwater from the roof using cisterns.

In addition, this facility also features on-site stormwater treatment, high performance HVAC, day lighting, recycled building materials, native landscaping and efficient irrigation. To make the step from Gold to Platinum, the dealership enacted several new procedures including purchasing renewable energy credits and conducting annual life cycle analyses on the building.

In 2010, Kendall Toyota in Eugene, Oregon, became Toyota's first dealership to be certified LEED Platinum, the highest certification level available from the U.S. Green Building Council.

RELATED TOPICS

- For information on Toyota's green building practices, please see **Operations/Green Building**.
- Watch a short video about a **TOYOTA dealership's achieving Platinum LEED certification**.

COMMUNITIES

> COMMUNITIES

At Toyota, Respect for the Planet goes beyond our vehicles and our operations. We believe we can also be a vehicle for change in our communities. That's why we support environmental stewardship and education programs across North America.

We accomplish our philanthropic goals through partnerships with universities, K-12 schools, nonprofits and community organizations. Together, we create programs with lasting impact that support our Global Vision, Guiding Principles and Earth Charter.

We share our expertise with our partners in an effort to make every relationship the best it can be. Toyota has contributed millions of dollars, countless vehicles and hundreds of thousands of volunteer hours to help conserve and protect the environment in North America. The impact of our programs has local, national and even international reach.

We describe a number of our partnerships in this chapter. Throughout this report, we have been highlighting stories about our efforts to increase efficiency and reduce waste, as this is one of our four core areas of focus. In this chapter, we feature a number of partnerships working on recycling and waste reduction. Please see in particular our stories about working with WWF in the Galápagos to implement energy and waste management blueprints; teaching elementary school students in Indiana about recycling and water conservation; and the winner of the Toyota Green Initiative, who helped a university in Louisiana start a recycling program.

These stories and others illustrate our commitment to partnerships that educate and promote environmental stewardship. We often reach one class, one school, one community at a time, but we are encouraged by the positive difference our efforts are making across the region.

SHARING

The Japanese word ***yokoten*** is translated loosely as sharing lessons learned. When a project finishes at Toyota, we methodically try to preserve what went well and create countermeasures for what did not. Lessons learned are incorporated into the standard process so that when we repeat it, we improve over the last time. When we practice ***yokoten***, we share not only the methods and procedures, but also the reasons changes were made and what mistakes were made. By openly communicating and sharing this information horizontally across the organization, we foster a learning organization.

SPOTLIGHT PARTNERSHIP: Toyota Partners With WWF in the Galápagos

For over a decade, Toyota and World Wildlife Fund (WWF) have been working together to transform the Galápagos Islands into a model of community-based conservation and sustainable development.

Our partnership began with the creation of an energy blueprint to address the impacts of the spill of diesel and bunker fuel in 2001 off San Cristobal Island. We then moved on to a waste management blueprint to improve waste handling practices and encourage recycling.

WWF and Toyota have worked together to provide on-site technical expertise to the Municipality of Santa Cruz, helping to design and improve their waste management system. We have provided technical expertise to create a municipal Environmental Department, implement environmental policies, and develop environmental standards and guidelines. We have also furnished expertise and funding for a mechanical composter, which has enabled a significant increase in the amount of organic material collected and put to productive secondary use.

With design assistance from Toyota, a new municipal solid waste landfill has been constructed and is now in use on Santa Cruz Island. The island also has a new recycling center, where plastic, glass, aluminum and paper are collected and shipped to Ecuador for recycling. Over the past year, there has been a 22 percent increase in the amount of waste recycled or composted on Santa Cruz Island, thanks in large part to this unique partnership.

“The situation on Santa Cruz is more sustainable now,” said Kevin Butt, Regional Environmental Director, Toyota North American Environmental. “With the Mayor’s strong support and commitment to these efforts, waste management practices have improved and the community is becoming more engaged. We are proud Toyota know-how has been able to make such a difference here.”

Education and outreach have been key components of everything we’ve done in the Galápagos Islands. As we have grown in our knowledge and experience in working in the islands, we have broadened our scope beyond just energy and waste. We look holistically at what “sustainability” requires, such as building the human capacity of the islands. We hope this project can serve as a model elsewhere in the world for the possibilities partnerships can create.

Toyota has been working with World Wildlife Fund (WWF) to help design and improve the waste management system in the Municipality of Santa Cruz. Pictured here (from left to right): Ulf Hardter, Program Officer, Energy & Waste Management, WWF; Jaycie Chitwood, Toyota Motor Sales; Eliecer Cruz, Eco Regional Director, Galápagos Program, WWF; Lauren Spurrier, Managing Director, WWF; Leopoldo Bucheli, Mayor of Santa Cruz Municipality; and Kevin Butt, Regional Environmental Director, Toyota North American Environmental.

The Municipality of Santa Cruz has a new recycling center, thanks to a unique partnership between Toyota and WWF. Over the past year, recycling on the island of Santa Cruz has increased by 22 percent.

SPOTLIGHT PARTNERSHIP: National Audubon Society

In 2013, Toyota announced a $3.5 million grant to the National Audubon Society to extend Toyota TogetherGreen™, bringing the total funding since 2008 to $23.5 million. Toyota TogetherGreen invests in emerging conservation leaders and funds innovative community-based conservation projects throughout the United States. Now in its sixth year, the program has engaged nearly half a million participants in conservation action in all 50 states.

In 2013, Toyota TogetherGreen continued to support:

- **Fellows**: Forty Fellows received $10,000 grants as well as specialized training to help them with 12-month projects in their communities.
- **Innovation Grants**: Up to 40 grants ranging from $5,000-$80,000 were awarded to support cutting-edge conservation projects to address habitat, wildlife, water or energy issues across the U.S.
- **Exit the Highway**: A summertime digital campaign to inspire people to drive the scenic route and spend more time in nature. By pledging to Exit the Highway and explore nature, participants entered to win a Toyota Prius ***v***. To learn more, visit www.exitthehighway.com.

Each year, Toyota holds a four-day training event for the incoming class of Fellows. Training includes the basics of the Toyota Way, as well as tips on how to communicate their stories effectively so that the projects funded by TogetherGreen can grow and expand into longer-term projects with wider reach.

“Since launching this program in 2008, I have had the privilege each year of helping to train the incoming classes of Fellows” said Kevin Butt, Regional Environmental Director, Toyota North American Environmental. “So, I am able to say from firsthand knowledge that Toyota TogetherGreen is having an important and tremendous impact on the conservation of air, water, energy and habitat in our country, but also we are engaging people from all backgrounds to take an active role in the future of critical conservation work.”

For more information on TogetherGreen, please visit www.togethergreen.org.

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TOYOTA TOGETHERGREEN

Audubon and Toyota created the Toyota TogetherGreen initiative in 2008. Now in its seventh year, funding from Toyota totals $23.5 million.

The program has **EXPANDED THE SCOPE AND REACH** of Audubon's conservation action nationwide with impressive results:

15.6 million gallons of water conserved

2 million pounds of recyclables collected

237,447 native trees and plants planted

33,000 acres restored or conserved

Funding recipients have **MULTIPLIED THEIR IMPACT** by translating their dollars into **$9.1 MILLION IN MATCHING FUNDS** and **$11.1 MILLION** worth of volunteer time.

TOGETHERGREEN GRANTEE EMPOWERS LOW-INCOME YOUTH TO TAKE BACK THEIR NEIGHBORHOOD

San Francisco's Bayview Hunters Point neighborhood is predominantly a low-income community of color (more than 50 percent of its households are considered low or very low income) that has historically served as the dumping ground for the city's most toxic industries.

Literacy for Environmental Justice (LEJ) was founded as an outpost of environmental awareness and urban sustainability in this often overlooked and troubled area of San Francisco. As a bold expansion of the organization's ongoing mission, the Toyota TogetherGreen Innovation Grant they received, "Bringing San Francisco to the Slough," targets the San Francisco Bay tidal wetlands and its many endangered species. In partnership with California State Parks, the California State Parks Foundation and Golden Gate Audubon Society, a core group of five youth leaders from nearby neighborhoods (along with others) are participating in growing and maintaining new plants in the restoration area, along with monitoring the impact on species diversity. In addition, the plant nursery and youth development program will lead volunteers and school groups in growing more than 7,000 plants, then use them to develop an accessible and welcoming new habitat for wild and human life.

TOGETHERGREEN FELLOW SHARES NATURE WITH FELLOW VETERANS

Benjamin Haberthur didn't need to be recognized as a 2012 Toyota TogetherGreen Fellow in order to be seen as a hero. Ben returned in 2003 after serving in Operation Iraqi Freedom, and has been awarded a Combat Action Ribbon, two Marine Corps Reserve Medals, and a Presidential Unit Citation (among other honors). However, Ben says that his project, funded by a Toyota TogetherGreen Fellowship, is his most rewarding achievement. His project helps returning veterans utilize nature and service to help fight Post-Traumatic Stress Disorder (PTSD).

Ben, who has a B.S. in Environmental Science from California State University, Monterey Bay, saw that his personal experience with nature and conservationism could become a broader experience shared by fellow vets who may be struggling with symptoms of PTSD. "I returned to school, anxious to get on with my life, and I discovered, while exploring the coastal areas of California, nature provided a peaceful and calming alternative to the stresses of my former military life."

So, with the simple motto "a country worth protecting is worth preserving," and the support of a $10,000 grant from Toyota TogetherGreen, Ben was able to create Veterans Conservation Corps of Chicagoland. Ben and his team utilize their skills from the Marines and Army to rejuvenate parks, but more importantly, he brings this nature work that healed him to his fellow veterans.

Some organizations aren't able to attract the younger men and women of today returning from Iraq and Afghanistan, and Ben believes this makes his work critical. "My target is younger vets," Haberthur said. "I think they relate differently than in years past." Helping to put these heroes on a path to recovery through nature is a fight all Americans can support.

Arbor Day Foundation

Held on Thursday, April 26, 2013, this year's National Arbor Day holiday marked the fifth anniversary of the Tree Campus USA program. Launched by the Arbor Day Foundation and Toyota in 2008, this program recognizes college campuses – large and small, public and private – that commit to environmental standards to promote tree planting and encourage conservation service in students. So far, 191 distinguished schools have received the Tree Campus USA designation. This year, the program partnered with the African-American sorority, Alpha Kappa Alpha, to encourage service in their chapters. To support this partnership, Tree Campus held additional tree planting events at historic black colleges and universities.

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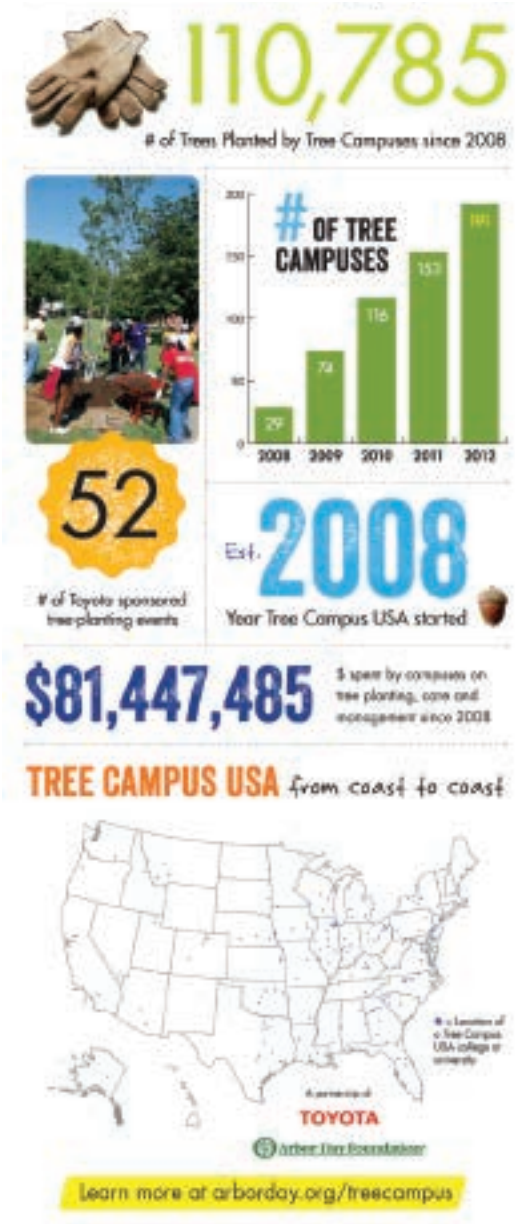


Evergreen Learning Grounds

Toyota in Canada and its dealerships have partnered with Evergreen for over a decade, working together to transform Canadian school grounds into natural learning environments. The Toyota Evergreen Learning Grounds program offers students a close, hands-on relationship with the natural world while educating them about the importance of restoring, protecting and celebrating it. In the process, students transform their traditional school grounds – often a combination of asphalt and turf – into natural learning spaces featuring trees, wildflowers and shaded areas.

The Toyota Evergreen Learning Grounds Program offers schools access to landscape design expertise and a resource library featuring how-to guides and information on native plants. It also provides interactive workshops for teachers and others to show them how they can weave the natural space into their curriculum.

"Bringing nature back to schools is so important, and makes a huge difference to students and their education," said Lynette Nastich, Principal at Frenchman's Bay Public School in Pickering, Ontario. "Frenchman's Bay P.S. is so grateful for the support provided by Toyota Evergreen Learning Grounds and the local dealership, Pickering Toyota. Through their continued support, we can make the student's dreams for a green, naturalized school yard come true."

Since the program's inception, almost 6.7 million people have benefitted from a Toyota Evergreen Learning Grounds project, including 81,279 teachers and over one million elementary and secondary school students at 3,324 schools. Nearly 80 percent of Toyota dealers across Canada have partnered with schools in their local communities.

Frenchman's Bay Public School in Pickering, Ontario, was one of six schools in the Durham Region to benefit from the Toyota Evergreen Learning Grounds program in 2012. Students play and learn in three naturalized areas, including the outdoor classroom pictured here.

National Public Lands Day

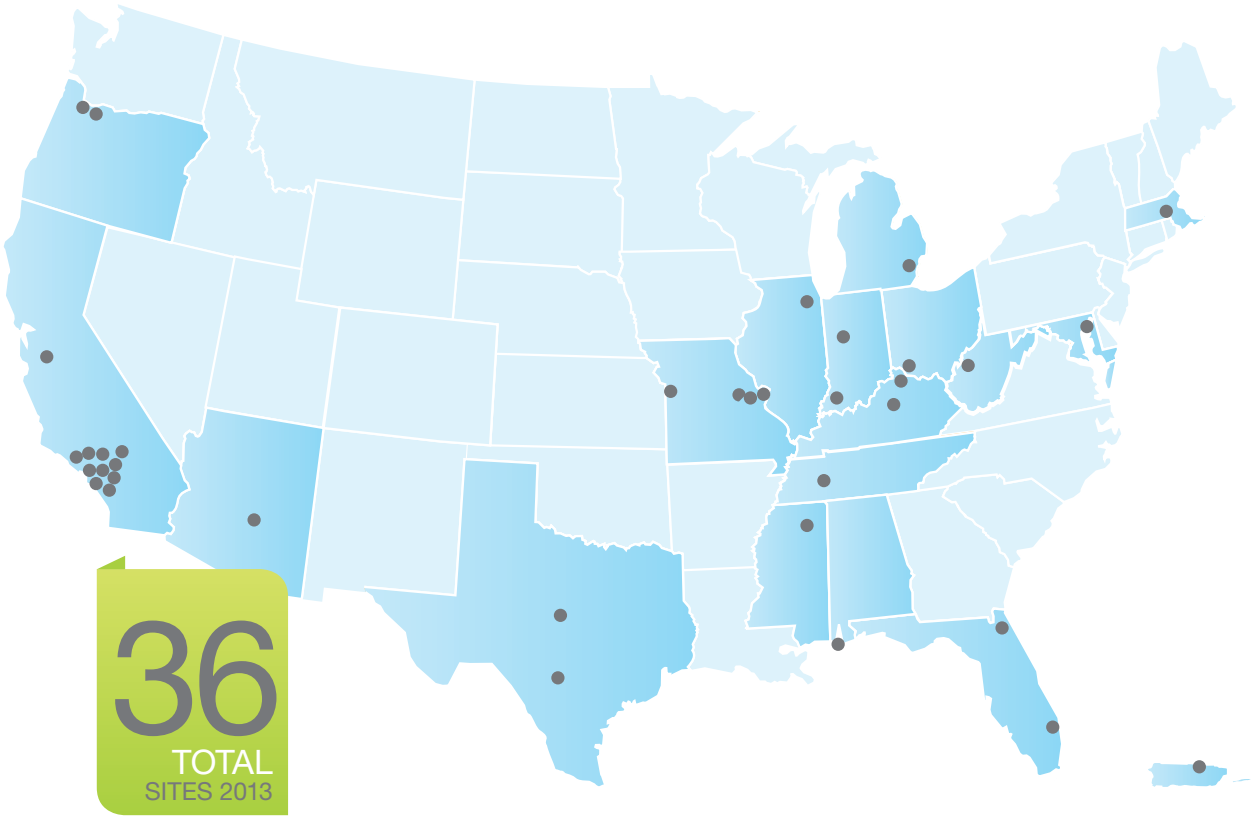
Since 1999, Toyota has been the national corporate sponsor for the National Environmental Education Foundation's (NEEF) Public Lands Every Day Program and its signature event, National Public Lands Day (NPLD). Through this program, NEEF encourages more Americans to enjoy, protect and maintain our public lands. They do this by:

- Fostering collaboration between public land managers and local community groups ("Friends Groups") to educate and engage the public in stewardship.
- Building the capacity of local nonprofit organizations to execute year-round land preservation events while attracting and connecting diverse communities to public lands.
- Mobilizing volunteers to connect to their public lands on National Public Lands Day and throughout the year.
- Educating and expanding the kinds of volunteers (such as businesses, youth, families, colleges and universities) who participate in land preservation events in local communities.

As national sponsor, Toyota contributes $3 million to NEEF's "Every Day Grants" program to improve the capacity of local organizations and Friends Groups supporting public lands every day. These grants come at a time when public lands are in critical need of financial and volunteer support. 2013 marks the first year NEEF awarded Friends Groups up to $2,000 each to hold a minimum of three Every Day Events. More than 100 Friends Groups were awarded funding to host environmental education, recreational and/or volunteer-based stewardship events in more than 122 cities and towns across America. By increasing the number of visitors who have good experiences on public lands, Friends Groups are the spark that continues to engage communities on our treasured lands. As a result of their efforts, they are helping to preserve 20 million acres of public lands.

In addition to working year-round to help protect and preserve public lands across the nation, NEEF holds NPLD, the nation's largest hands-on volunteer event specifically designed to improve and enhance public lands. NPLD is held annually in September. 2013 marks NPLD's 20th anniversary and the 15th year of partnership between Toyota and NPLD.

In addition to providing sponsorship, Toyota encourages employees to get involved in NPLD activities by helping to care for local parks, forests, rivers, beaches, shorelines and other public lands. During NPLD 2013, more than 180,000 people, 3,400 of them Toyota employees, volunteered at 2,150 different sites in all 50 states and U.S. territories. Volunteers maintained existing trails, beautified stream beds, removed trash and invasive plants, and planted an estimated 100,000 trees, shrubs and native plants. These projects contributed an estimated $18 million in improvements to federal, state and local public lands. For more information, please visit www.PublicLandsDay.org.



ALABAMA
Dauphin Island Beach, Dauphin Island

ARIZONA
South Mountain Park, Phoenix

CALIFORNIA
Audubon Least Tern Colony, Venice

Bellevue Recreation Center, Los Angeles

El Dorado Nature Center, Long Beach

Long Beach Animal Care Services / spcaLA, Long Beach

Lytle Creek, San Bernadino National Forrest, Lytle Creek

Mt. Diablo State Park, Live Oak Campground, Clayton

Newport Bay Nature Preserve, Irvine

Santa Fe Dam Recreational Area, Irwindale

Shipley Nature Center, Huntington Beach

Upland Library Demonstration Garden, UPLAND

White Point Nature Center, San Pedro

FLORIDA
Deerfield Beach, Deerfield Beach

Pumpkin Hill Creek Preserve State Park, Jacksonville

ILLINOIS
Dick Young Forest Preserve, Batavia

INDIANA
Wesselman Woods Nature Preserve, Evansville

Subaru Wildlife Habitat/ Motorpool Boundary, Lafayette

KENTUCKY
Big Bone Lick State Park, Union

Salato Wildlife Education Center, Frankfort

MARYLAND
Fort McHenry National Monument and Historic Shrine, Baltimore

MASSACHUSETTS
West Hill Dam, Uxbridge

MICHIGAN
Belle Isle, Detroit

MISSISSIPPI
Camp Yocona, Randolph

MISSOURI
Broemmelsiek Park, Wentzville

Cuivre River State Park, Troy

Eco Park, Saint Charles

Smithville Lake, Smithville

OHIO
Blue Ash Park, Blue Ash

OREGON
Cathedral Park, Portland Harbor, Portland

Columbia Children's Arboretum, Portland

PUERTO RICO
Isla de Cabras Cataño, Puerto Rico

TENNESSEE
Liberty Gardens Memorial Park, Jackson

TEXAS
Highland Park, Lake Lavon/Trinity Trail, Lucas

Woodlawn Lake, San Antonio

WEST VIRGINIA
Valley Falls State Park, Hurricane

NEEF and Toyota's support for public lands serves as an excellent example for public-private partnerships, which are key to lasting conservation solutions for our nation. Such partnerships also support the goals of America's Great Outdoors initiative, a grassroots approach to protecting lands and waters and connecting all Americans to their natural and cultural heritage.

"Thousands of local nonprofit organizations are answering the call to help their public lands maintain grounds and trails, and generally keep up with growing interest in their use locally and nationally," said Diane Wood, president of NEEF. "But many groups lack the necessary resources to be as effective as they possibly can. Toyota's gift unleashes the power of these groups to serve their local parks and lands by increasing their capacity to establish lasting organizations, recruit volunteers and involve their communities."

On September 28, 2013, the National Environmental Education Foundation, with support from Toyota Motor Sales, U.S.A., celebrated the 20th anniversary of its National Public Lands Day (NPLD) program. NPLD represents the nation's largest, single-day effort for engaging families, children, government agencies, schools, businesses and other stakeholders in preserving and protecting public lands across the nation. Toyota's signature event was held at the Martin Luther King, Jr. National Historic Site (MLK Jr., NHS) in Atlanta, Georgia. Here, volunteers focused on the restoration of historic houses adjacent to Martin Luther King Jr.'s first home, as well as weeding, mulching and painting.

Scholastic and Lexus Eco Challenge

Lexus, in partnership with Scholastic, sponsors the annual Lexus Eco Challenge. Since the program began in 2006, Lexus Eco Challenge has awarded $4 million in scholarships and grants to empower middle and high school students to learn about the environment and take action to improve it. More than 25,000 students have participated to date, learning how they can make a difference in the world around them.

In addition to the ongoing contest, Lexus Eco Challenge provides educational materials designed by Scholastic that integrate creative lesson plans into the classrooms to help teach students about the environment. For each challenge, the website (www.scholastic.com/lexus) has lesson plans and teacher instructions including questions to help guide a discussion about the current challenge topic, facts about the topic, and guidelines for a specific classroom project.

HIGH SCHOOL GRAND PRIZE: THE ELYMENATORS, NEW YORK

For their entry in this year's Land and Water challenge, teacher advisor Maribel Pregnall and her team, the Elymenators, examined the considerable number of Lyme disease cases reported in their hometown. For the Final Challenge, the team reviewed the data they gathered about the local spread of the disease in order to apply their findings to an international campaign. The Elymenators mailed letters to the Centers for Disease Control and Prevention to petition for re-administration of the Lyme vaccine and visited local schools and medical offices to educate people about Lyme disease prevention (and the correlation between the disease and nearby wildlife destruction). For a wider-ranging approach, the team contacted various national hospitals and got enthusiastic notes of support from medical facilities in India, South Korea and Germany.

MIDDLE SCHOOL GRAND PRIZE: ECO HAWKS, SOUTH CAROLINA

For their Final Challenge project, teacher advisor Alexandra Davis and the Eco Hawks put it simply: "We focused on people's knowledge of recyclable items." Even though green issues have received more national attention over the past 10 years, the team's home state of South Carolina has an extraordinarily low recycling rate at 27.7 percent. (In 2011, Virginia and Washington reported 43 percent and 50 percent, respectively, for example.) The Eco Hawks used their state's reportedly low enthusiasm for recycling as an incentive to get the word out. The results are quite inspiring: The team partnered with dozens of local organizations, appeared in newspapers and local television news, spoke to the House of Representatives, and more. Their programs yielded a 16 percent increase in local curbside recycling, and the students collected nearly 70,000 plastic bottle caps for recycling.

Toyota Green Initiative

Toyota Green Initiative (TGI), an environmental stewardship platform designed to empower the African-American community to adopt a sustainable lifestyle, awarded student Corban Bell of Grambling State University in Grambling, Louisiana, the grand prize of TGI's third annual Green Campus Contest. Bell's plan and establishment of a permanent, campus-wide recycling program at his school earned him a 2012 Toyota Prius one-year lease and $5,000 toward the purchase of trees for the Grambling State University campus. He also received membership to the TGI Coalition, a collective of environmental experts and celebrities who speak on sustainability within the African-American community.

Wyland Foundation

Since 2009, Toyota has supported the Wyland Foundation, a nonprofit founded by renowned marine artist Wyland that helps children and families across the United States recognize the importance of healthy oceans and waterways.

Presented nationally by Wyland Foundation and Toyota, the National Mayor's Challenge had participation from 70 mayors across the United States, including Denver Mayor Michael B. Hancock; D.C. Mayor Vincent C. Gray; Columbus, Ohio, Mayor Michael B. Coleman; Seattle Mayor Mike McGinn; Tucson, Arizona, Mayor Jonathan Rothschild; and Santa Fe, New Mexico, Mayor David Coss. City leaders encouraged their residents to participate in the online challenge, which also provided access to regional water and energy resources along with cost-saving tips.

Five U.S. cities were honored in May 2013 for residents' commitment to water-saving choices as part of the second annual National Mayor's Challenge for Water Conservation. Separated into five categories according to population, the winning cities are Denver, Colorado; Tucson, Arizona; West Palm Beach, Florida; Bremerton, Washington; and Laguna Beach, California. Residents in all 50 states made more than 44,000 online pledges to save water, use less energy and reduce pollution in four categories – home, yard, community and life – with potential cost savings of more than $30.6 million, almost three times the amount pledged last year.

"This year's challenge gathered the support of an impressive list of cities, mayors, corporations and nonprofits, all of whom shared our enthusiasm for working toward a more sustainable future," said environmental artist Wyland, founder of the Wyland Foundation. "Congratulations to the winning cities. The environmental education and pledges will have an impact in bringing the conversation about conserving resources closer to home."

At a May event in Denver, Mayor Hancock drew the grand prize winner of a new Prius ***c*** from the pool of winning cities' participants, who were also eligible to win hundreds of water-saving fixtures and gift certificates to Lowe's stores. A $1,000 Lowe's Shopping Spree will also be chosen from among the entire pool of U.S. participants. The National League of Cities, CH2M Hill WaterMatch, Rain Bird Corporation, Lowe's home improvement stores, the U.S. Environmental Protection Agency (EPA) WaterSense, and the U.S. Forest Service supported the challenge, too. The additional support from well-known comedians through Comics for Conservation, a series of public service announcements, expanded this year's environmental message. Pete Dominick, longtime SiriusXM® host, stand-up comic and CNN contributor, was the official spokesperson.

Toyota's partnership with the Wyland Foundation and the Mayor's Challenge included a new element this year – an eight-state U.S. environmental educational tour to schools and communities, reaching 4,000 students. The mobile, 1,000-square foot Wyland Clean Water Mobile Learning Experience featured interactive exhibits to demonstrate the relationships between humans and water.

"Toyota has a deep commitment to environmental sustainability across our operations, making our work with the Wyland Foundation a natural and rewarding fit," said Michael

Rouse, Vice President of Diversity, Philanthropy, and Community Affairs for Toyota Motor Sales, U.S.A., Inc. "By helping expand the reach of the National Mayor's Challenge this year, we hoped to encourage more people to learn and participate in conserving natural resources."

In addition to making water-saving pledges, challenge participants pledged to reduce their use of single-use plastic water bottles by more than 5.4 million bottles and eliminate 69.9 million pounds of hazardous waste from entering watersheds. By altering daily lifestyle choices, pledges also resulted in potentially 18.3 million fewer pounds in landfills and 2.2 million fewer pounds of fertilizer in the waste stream. Potential savings of 67.8 million gallons of oil and 2.7 billion pounds of carbon dioxide rounded out the final pledge results.

To learn more about the National Mayor's Challenge, visit www.mywaterpledge.com.

Local Community Engagement

Toyota partners with numerous local community organizations where we live and work. These partnerships allow our employees to volunteer in their communities and share their knowledge and expertise.

Toyota is proud of our employees for their volunteering across North America. Our employees take what they learn about energy saving, water conservation, recycling and biodiversity, and apply these practices at home and in their communities. Our employees embody our Action Guidelines, which encourage us to always be concerned about the environment and to actively participate in our communities.

Below are a few examples of how we engage with our local communities.

HOUSEHOLD HAZARDOUS WASTE COLLECTION DAYS

Several of Toyota's North American locations hosted household hazardous and electronic waste collections for employees and surrounding communities as part of Earth Day celebrations. These collections ensure proper recycling or disposal for household items such as appliances, cell phones, paint, batteries, pesticides, automotive fluids, furniture stains and bathroom cleaners. Some sites have added clothing and toys to their collection days and donate these to Goodwill. These events demonstrate how Toyota extends its commitment to waste reduction beyond its production activities.

At our Canadian sales headquarters in Toronto, Ontario, 3,185 kilograms (7,000 pounds) of eyeglasses, cell phones, televisions, clothing, books and computers were collected during their 2013 e-waste collection event.

ELECTRONIC WASTE DONATIONS

Each year, team members from Toyota Technical Center – our research and development division with locations in Michigan, Arizona and California – find new homes for used electronics assets. Last year, over 500 pieces of electronic equipment, such as cell phones and computers, were donated to nine organizations, including the Boy Scouts of America in Michigan, the 186th Street School in Gardena, California, and Eve Place in Arizona. We also donated six production engines and four transmissions to a local high school. Working on

today's cars requires a deep understanding of technology. Toyota's donations provide teachers with the necessary tools to educate students about industry standards, and encourage students to consider careers in the automotive service and repair industry. These donations also keep this material out of a landfill while helping out worthy organizations.

ANNUAL ENVIRONMENTAL FIELD DAY

Each year during Environmental Education Week, students from local schools visit the Environmental Education Center | Nature Trail at Toyota's Kentucky plant for a special Environmental Field Day. Six learning stations are set up along the nature trail and activities are led by guest organizations, such as Louisville Zoo and Salato Wildlife Education Center. Team members from the plant's Community Relations and Environmental departments are on hand to support the event.

Toyota's Kentucky plant hosts over 40,000 visitors each year from around the country. Here is what one teacher had to say about her visit with us:

"Just from one visit to Toyota, we determined we could do more for our school environment," said Kristi Fehr, a fifth-grade science teacher from Liberty Elementary in Fayette County. "We were inspired to create a more natural habitat in our school garden and added some trees, a bird-feeder station complete with birdhouses, and bird baths. At lunch just outside the Toyota Nature Trail, the students even learned about composting. At the time, our students were used to recycling, but composting was a fairly new idea for them. Since our visit, the kids at our school chose to spend science club award money to purchase a composting bin for our school garden. Our visit continues to make an impact as each grade level coming up sees the green improvement projects of those that came before them."

We are excited the experience had such a lasting impact on Kristi's students. And we are also impressed with the way her students practiced ***yokoten*** of composting to meet their needs and situation. We hope this is something that can be transferred to even more schools.

Liberty Elementary students from Kristi Fehr's science class toured Toyota's Kentucky plant and conducted a water study with the help of University of Kentucky staff. Students used nets to take samples from Cattail Pond, located at the plant's Environmental Education Center | Nature Trail. The students identified a wide variety of species, living proof of the health of this water body.

20 MINUTE MAKEOVERS

During Earth Week, 86 employees from our Canadian sales headquarters – including Toyota Canada's President Seiji Ichii, members of the executive committee, Japanese coordinators and associates – ventured into their local community for "20 Minute Makeovers" of a nearby ravine, a ditch and a playground. In addition, the employees at the Montreal and Toronto vehicle processing centers participated in clean-up events. In all, 111 bags of trash were collected.

In honor of Earth Week, employees from Toyota's Canadian sales headquarters gave a "20 Minute Makeover" to a number of nearby sites and collected 70 bags of trash along the way.

SPOTLIGHT PARTNERSHIP: TEACHING RECYCLING AND WATER CONSERVATION IN INDIANA SCHOOLS

Toyota Motor Manufacturing, Indiana– our assembly plant in Princeton– has been a partner with local elementary schools since 2000. Together, they engage thousands of students each year in activities that teach about environmental issues such as recycling and water quality.

Students are introduced to Toyota in the third grade, when they spend a day during Earth Week at Earth Aware Camp at Camp Carson. They participate in activities and games designed to teach them something about the environment. Volunteers from the Mesker Park Zoo are on hand to teach about the food web and help students track the flow of energy through an ecosystem. Then team members from Toyota run a Recycle Relay to teach students what can be recycled and what can't. The children enjoy a magic show by the Magic Gardener, then make homemade notebooks out of recycled paper and write an Earth Day pledge inside.

"Hands-on activities stick with the children much longer," says Lisa Kuhn, a teacher from North Elementary. "That's why activities like the Recycle Relay work so well. This was my first experience with Toyota and I'm already planning next year's trip."

The students at Earth Aware Camp received special shirts commemorating the day and a Blue Spruce seedling to take home and plant with their families, extending the lessons they learned to their own back yards.

Children at Earth Aware Camp make homemade notebooks out of recycled paper and write an Earth Day pledge inside.

Toyota's next interaction with these students is also during Earth Week in April, when our Indiana plant sponsors a poster contest for fifth-grade students in Gibson, Vanderburgh, Posey and Warrick counties. The winning design is put on the T-shirt given to all sixth-grade students who participate in the World Water Monitoring Challenge™ in the fall.

The design theme for 2013 was water quality. Students had to design a poster that focused on why we need clean water and how to protect the earth's water resources. This year, more than 60 schools participated in the contest with over 2,000 designs.

This year, the winning design of the t-shirt contest was submitted by Adam Barnes of Evansville, who attends West Side Catholic Consolidated School, the St. Boniface Campus. Adam's teacher received a certificate for $200 for classroom supplies, and all classes that participated in the contest had a pizza party.

"Toyota Indiana has supported the World Water Monitoring Challenge activities since 2005 and has donated over $300,000 for this initiative over the past eight years," said Kelly Dillon, Manager of External Affairs at Toyota. "Our goal is to continue to share the importance of water quality to our students, and we hope to do that by expanding the program to more counties in the future."

In September, Toyota worked with sixth-grade students to sample about 100 different lakes, rivers and streams across southwestern Indiana. Monitoring data will be uploaded into the WWMC database. In recognition of this successful program, our Indiana plant was named a "Global Water Champion" in 2012. Only two organizations were honored with this award in all of North America that year.

"Toyota's water monitoring program provides students with real-world, hands-on learning," said Megan Wright, a sixth-grade science teacher at Helfrich Park STEM Academy. "This lab opportunity allows my students to be part of and help monitor a real problem in the world. It is a great learning experience. This program also is a great way for students to see science in action in the community. It helps them see science beyond textbooks and classroom walls. I would highly recommend this lab to any science teacher."

This student is in Megan Wright's sixth-grade science class at Helfrich Park STEM Academy in Vanderburgh County, Indiana. In 2012, 210 of her students – including the one pictured here – participated in World Water Monitoring Challenge activities.

> DATA CENTER

Welcome to the Data Center. Here you will find our environmental action plan targets, as well as data related to our environmental performance in the areas of Compliance, Environmental Management System Certifications, Fuel Economy, Vehicle CO_2 Emissions, Criteria Pollutant Tailpipe Emissions, VOC Emissions, Energy Consumption, Greenhouse Gas Emissions from Operations, Renewable Energy Capacity, Toyota Facility LEED® Certifications, Waste, Water, and Dealership LEED® Certifications.

Following the links provided with each data chart will take you to the relevant section of this report, where you can find additional information.

FG3 • FY2013 Targets and Results

	FY2013 ENVIRONMENTAL TARGETS	RESULTS
Compliance	Zero complaints and violations	O
Air	Reduce VOCs from the body paint process at manufacturing plants to 13.8 g/m^2	⊙ 13.0 grams per square meter
Energy	Reduce energy consumption at manufacturing plants 2% per year to 7.12 MMBtus per vehicle	⊙ 6.72 MMBtus per vehicle
Greenhouse Gases	Reduce GHG emissions at manufacturing plants to 0.78 metric tons CO_2 per vehicle produced	⊙ 0.61 metric tons CO_2 per vehicle produced
Waste	Reduce non-saleable waste from manufacturing plants 2% per year to 17.50 kilograms/vehicle	X 18.41 kilograms/vehicle We missed this target, mainly due to an increase in the amount of wastewater shipped off site for treatment. Two of our plants experienced issues with their wastewater treatment systems; countermeasures have been implemented.
	Achieve zero waste to landfill* at manufacturing plants **Defined as not sending waste directly to landfill (excluding ash from waste sent to incineration and waste-to-energy facilities)*	Δ Achieved by 10 of 14 plants. 4 plants missed the target. We are working with these locations to find suitable alternatives to landfill.
Water	Reduce water usage at manufacturing plants 1% per year to 0.91 kilogallons per vehicle	⊙ 0.87 kilogallons per vehicle

⊙ Target Exceeded O Target Achieved Δ On Track X Target Missed

ABOUT THIS CHART: In this report, we describe progress against our annual environmental action plan targets in the areas of compliance, air (volatile organic compounds), energy, greenhouse gases, waste (non-saleable and zero waste to landfill) and water.

FG5 • ISO 14001 Certifications of Toyota's North American Facilities

	LOCATION	ORIGINAL CERTIFICATION DATE	DATE OF LATEST RECERTIFICATION
Manufacturing Plants	Manufacturing Headquarters in Erlanger, Kentucky	2000	2009
	Huntsville, Alabama	2004	2010
	Long Beach, California	1998	2010
	Princeton, Indiana	1999	2011
	Georgetown, Kentucky	1998	2010
	St. Louis, Missouri	1998	2010
	Troy, Missouri	1998	2010
	Blue Springs, Mississippi	2012	—
	Jackson, Tennessee	2007	2010
	San Antonio, Texas	2008	2010
	Buffalo, West Virginia	2000	2013
	Woodstock, Ontario	2009	2012
	Cambridge, Ontario	1998	2010
	Delta, British Columbia	1997	2012
	Baja California, Mexico	2006	2012
Vehicle Distribution Centers	Georgetown, Kentucky*	1998	2010
	Lafayette, Indiana	2008	2011
	Long Beach, California	1999	2011
	Port Newark, New Jersey	2000	2011
	Portland, Oregon	2004	2011
	Princeton, Indiana*	1999	2011
	San Antonio, Texas	2007	2010
	Toronto, Ontario	2002	2011
	Montreal, Quebec	2003	2011
Parts Distribution Centers	Aurora, Illinois	2004	2012
	Cincinnati, Ohio	2001	2010
	Glen Burnie, Maryland	2001	2011
	Hebron, Kentucky	2003	2012
	Kansas City, Missouri	2000	2010
	Mansfield, Massachusetts	2000	2012
	Ontario, California	2002	2011
	Portland, Oregon	1999	2011
	San Ramon, California	2001	2010
	Torrance, California	2001	2011
	West Caldwell, New Jersey	2003	2012
	Toronto, Ontario	2001	2011
	Vancouver, British Columbia	2002	2011
Sales and Regional Offices	Canadian Sales Headquarters in Toronto, Ontario	2001	2011
	Pacific Region and TFS	2002	2011
	Quebec Regional Office and TFS	2005	2011
	Atlantic Regional Office and TFS	2006	2011

*Vehicle distribution centers in Kentucky and Indiana are certified with the manufacturing plants. They do not have separate certifications, even though they are separately managed facilities.

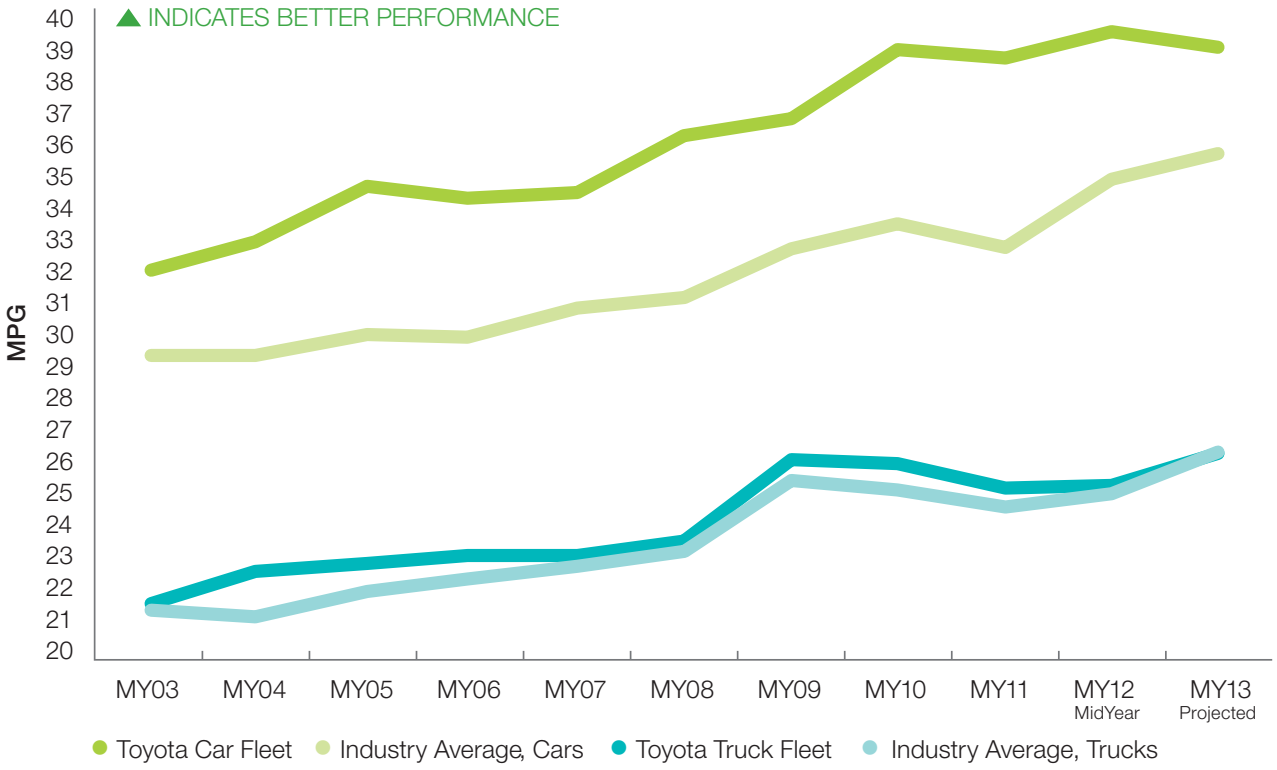
ABOUT THIS CHART: In fiscal year 2013, all of Toyota's North American manufacturing plants and logistics sites and several office complexes had an environmental management system certified to the ISO 14001 standard, the International Organization for Standardization's core set of standards for designing and implementing an effective environmental management system.

FG6 • Complaints and Non-Compliance

DESCRIPTION	FY11	FY12	FY13
Complaint Cases	0	0	0
Notices of Violation	2	1	0

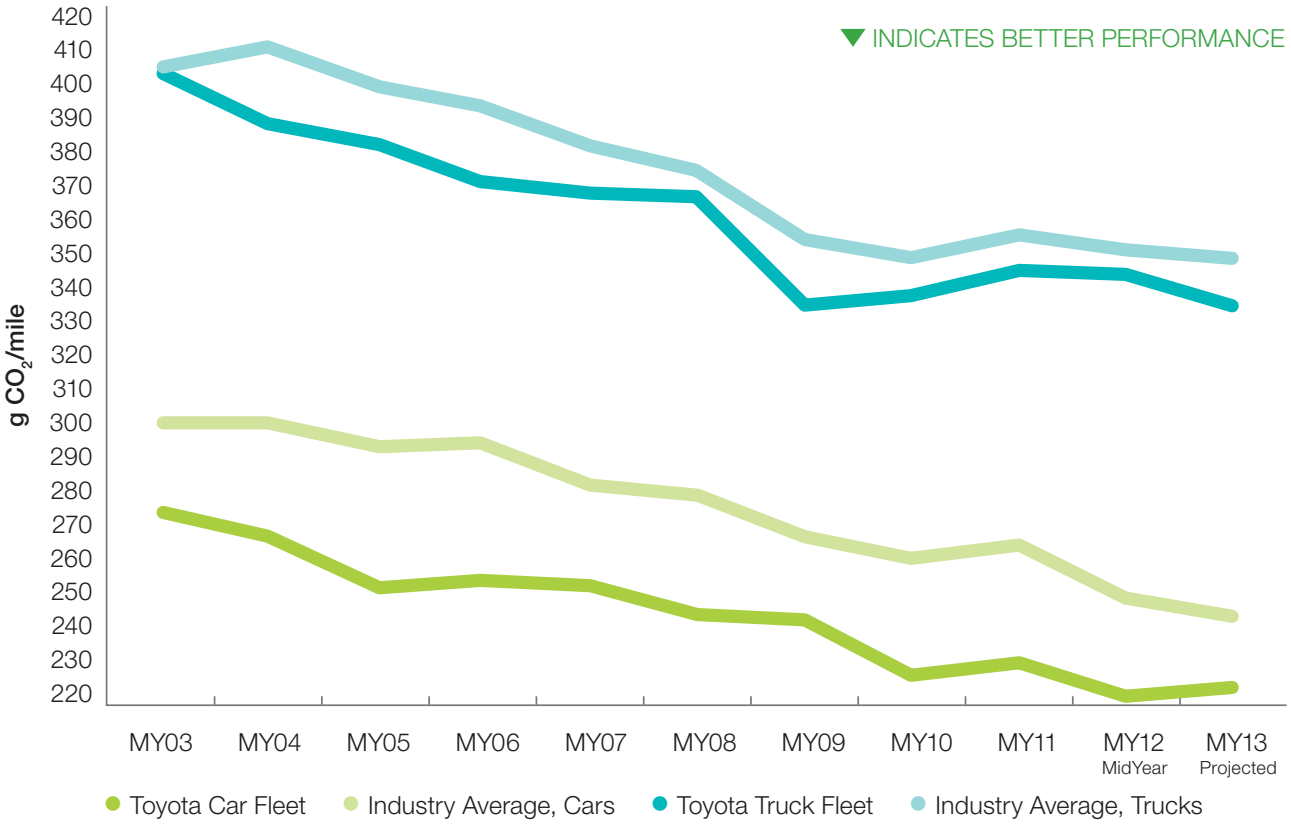
ABOUT THIS CHART: In fiscal year 2013, our North American manufacturing plants and logistics sites had zero regulatory violations. In addition to regulatory violations, the manufacturing plants also track the number of complaints made by third parties. There were no complaints in fiscal year 2013.

FG8 • U.S. Car & Truck Corporate Average Fuel Economy (CAFE)



ABOUT THIS CHART: In the United States, Toyota is the most fuel-efficient full-line automotive manufacturer. Toyota's model year 2013 fleet achieved the required U.S. Corporate Average Fuel Economy (CAFE) standards for both cars and trucks.

FG9 • Annual CO_2 Per Mile*, Toyota U.S. Fleet

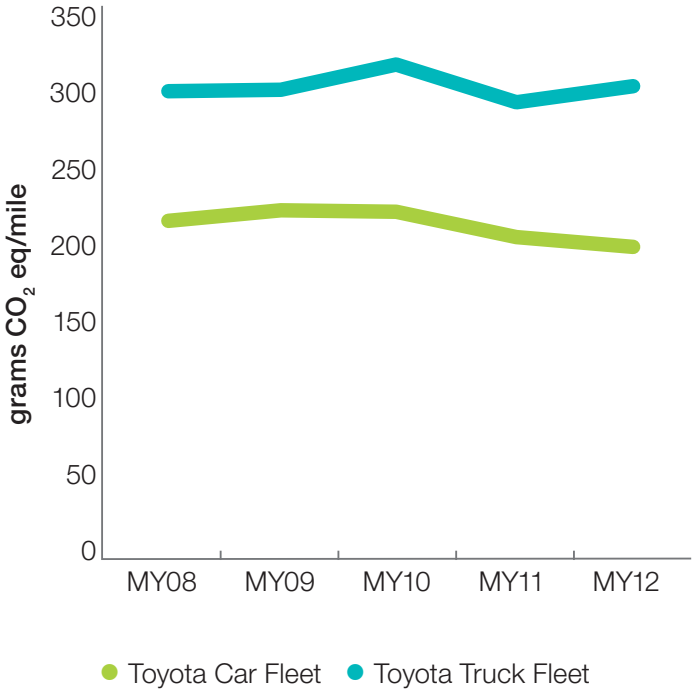


*This data represents CAFE fuel economy performance in terms of CO_2 (grams per mile) and does not reflect provisions in the U.S. EPA GHG program (starting 2012 model year) such as air conditioning credits.

ABOUT THIS CHART: Toyota met the required GHG standards in the United States.

FG10 • Annual CO_2 Per Mile*, Toyota Canada Fleet

▼ INDICATES BETTER PERFORMANCE



ABOUT THIS CHART: Toyota met the required GHG standards in Canada.

FG11 • Toyota and Lexus SULEVs

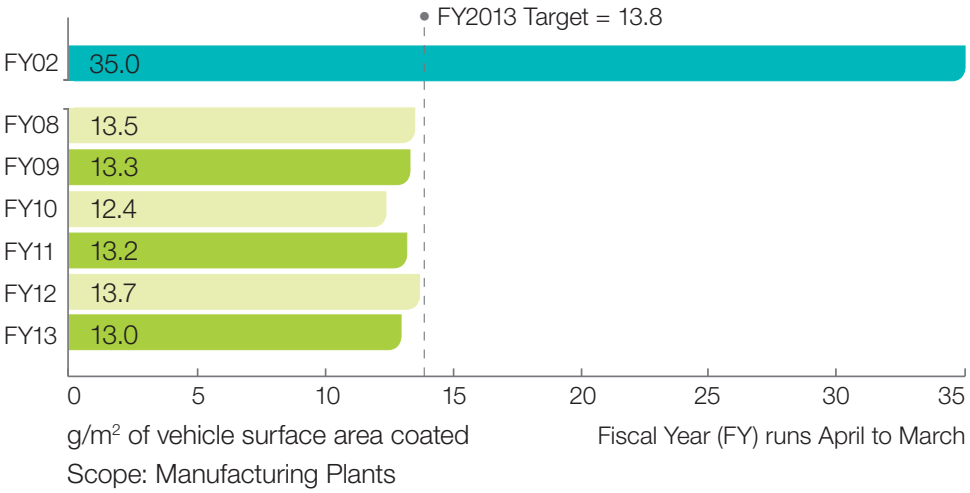
Specifically for vehicles offered in the 2013 model year, 40 percent of all Toyota, Lexus and Scion passenger car vehicles and 13 percent of truck vehicles are certified to SULEV or better. These vehicles include:

Avalon Hybrid
Prius
Prius *c*
Prius *v*
Prius Plug-In Hybrid
Camry Hybrid
Camry PZEV
Highlander Hybrid
RAV 4 EV
Lexus ES 300h
Lexus GS 450h
Lexus RX 450h
Lexus LS 600h L
Lexus CT 200h

*Data is U.S. only and is not sales-weighted.

ABOUT THIS CHART: Toyota annually complies with the state of California, U.S. and Canadian federal vehicle emissions programs, and we have met the requirements for the 2013 model year.

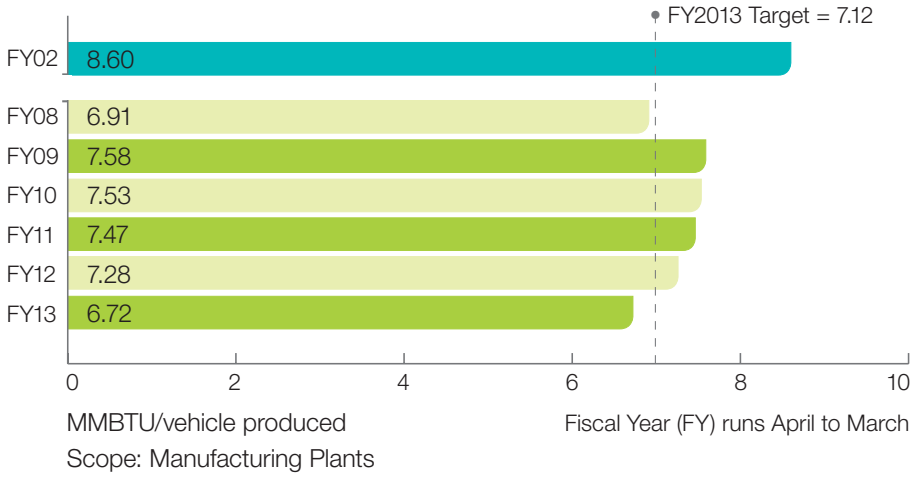
FG16 • VOC Emissions



63%
REDUCTION
SINCE FY02

ABOUT THIS CHART: Toyota's North American plants measure grams of VOCs emitted per square meter of vehicle surface area coated (g/m2). Our target in fiscal year 2013 was to reduce VOC emissions from our 2012 target level of 13.9 g/m2, to an average 13.8 g/m2 for all North American plants. We not only achieved this target but exceeded it, reducing average VOC emissions to 13.0 g/m2. Since 2002, we have reduced VOC emissions by 63 percent, from 35.0 to 13.0 g/m2.

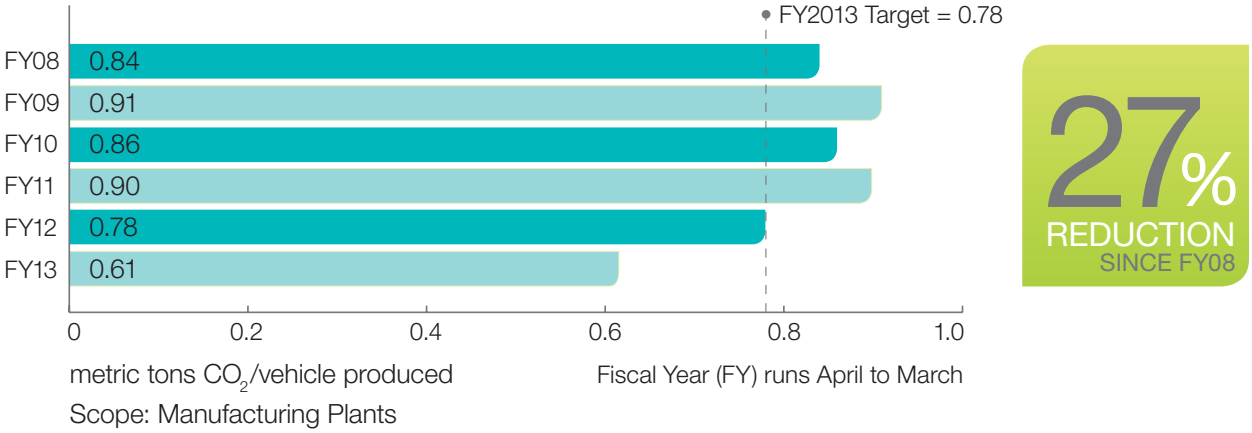
FG19 • Energy Consumption



22%
REDUCTION
SINCE FY02

ABOUT THIS CHART: Toyota's North American manufacturing facilities had an annual target for fiscal year 2013 to improve energy intensity to 7.12 MMBtus per vehicle produced. We use MMBtus for this target as a way to combine several energy sources, including electricity and natural gas, into a single metric. We achieved this target and reached 6.72 MMBtus per vehicle. Since 2002, energy use has been reduced by 22 percent per vehicle produced, and the cumulative cost savings at Toyota's 14 North American vehicle, engine and parts plants have totaled more than $410 million. The total energy saved would power 30,000 average households for 10 years.

FG21 • Manufacturing CO_2 Emissions



ABOUT THIS CHART: Our fiscal year 2013 target was to reduce GHG emissions from energy consumption at our North American manufacturing plants from fiscal year 2012 levels to 0.78 metric tons CO2 per vehicle produced. This target is in line with our energy consumption target. We not only achieved this target but exceeded it, reducing emissions to 0.61 metric tons CO2 per vehicle in 2013.

FG22 • North American GHG Emissions by Scope

	SCOPE 1 (Direct)	SCOPE 2 (Indirect - Purchased Electricity)	SCOPE 3 (Other Indirect)
FY2008	437,000	950,000	872,000
FY2009	382,000	767,000	711,000
FY2010	405,000	742,000	710,000
FY2011	395,000	776,000	720,000
FY2012	354,000	710,000	712,000
FY2013	431,000	861,000	789,000

* In keeping with The GHG Protocol®, the above results do not include several *de minimis* sources, which account for less than five percent of our total emissions.

**Scope 3 emissions include indirect emissions from employee commuting, third-party logistics, and business travel. These are emissions which Toyota has influence over but does not directly control.

ABOUT THIS CHART: We are also disclosing GHG emissions from Toyota's North American companies as a consolidated inventory. Toyota's North American GHG inventory measures GHG emissions from the consumption of electricity and natural gas at plants, logistics sites and owned and leased office space, as well as from fuel consumption by in-house trucking operations and third-party carriers, employee commuting and business travel. The methodology used to calculate emissions is based on The GHG Protocol® developed by the World Resources Institute and the World Business Council for Sustainable Development.

FG23 • Renewable Energy Capacity in North America

TOYOTA FACILITY	TYPE OF SYSTEM	LOCATION	YEAR INSTALLED	KW
Toyota Motor Sales, U.S.A. South Campus	PV	Torrance, California	2003	537
North American Parts Center California	PV	Ontario, California	2008	2,250
Toyota Motor Manufacturing, Alabama	PV	Huntsville, Alabama	2009	5
New York Parts Distribution Center	PV	West Caldwell, New Jersey	2010	1,502
Toyota Motor Sales, U.S.A. Headquarters	Stationary Fuel Cell	Torrance, California	2012	1,110
Toyota Motor Manufacturing, Mississippi	PV	Blue Springs, Mississippi	2013	50
Toyota Motor Manufacturing de Baja California	PV	Tecate, Mexico	2013	24
			Total	5,478

We began investing in renewable energy in 2002, when we installed our first photovoltaic (PV) system at our South Campus sales headquarters building in Torrance, California. Since then, we have installed several more PV systems at logistics sites and manufacturing plants, as well as a stationary fuel cell at our sales headquarters in California.

ABOUT THIS CHART: Toyota has 5,478 kilowatts of renewable energy capacity across North America. We see renewable energy as a means of reducing our carbon footprint and our reliance on non-renewable energy sources.

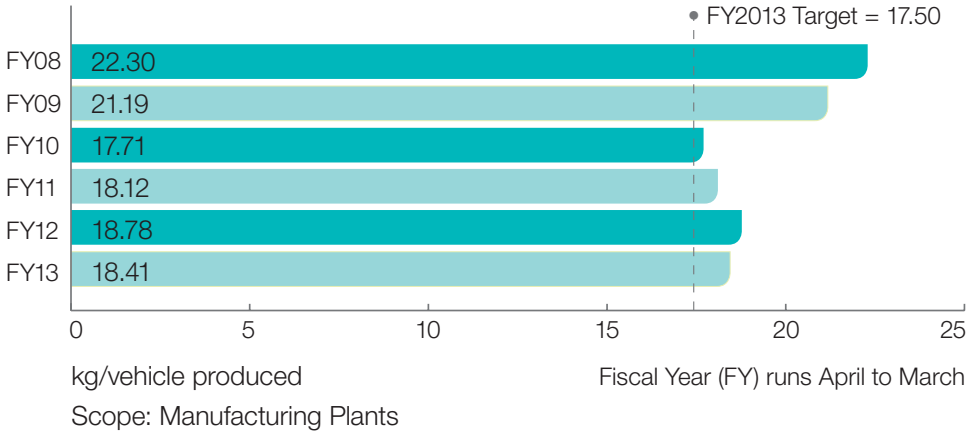
FG25 • Toyota's North American Facilities With LEED® Certifications

TOYOTA FACILITY	LOCATION	YEAR	CERTIFICATION LEVEL
Toyota Kansas City Training Center	Kansas City, Missouri	2012	NC Gold
Toyota Inland Empire Training Center	Rancho Cucamonga, California	2010	CI Gold
Toyota Motor North America, Inc.	New York, New York	2010	CI Gold
Toyota Technical Center	York Township, Michigan	2010	NC Gold
Toyota Racing Development North Carolina	Salisbury, North Carolina	2010	NC certified
Lexus Florida Training Center	Miramar, Florida	2009	CI Gold
Toyota Phoenix Training Center	Phoenix, Arizona	2009	CI Silver
North America Production Support Center	Georgetown, Kentucky	2006	CI Silver
Toyota Motor North America, Inc.	Washington, D.C.	2006	CI Silver
Portland Vehicle Distribution Center	Portland, Oregon	2004	NC Gold
Toyota Motor Sales – South Campus	Torrance, California	2003	NC Gold

NC = new construction CI = commercial interiors

ABOUT THIS CHART: A total of 11 Toyota and Lexus facilities have achieved LEED® certification. Ranging from office space to vehicle distribution centers, these facilities represent Toyota's continued efforts to improve the design and efficiency of all operations.

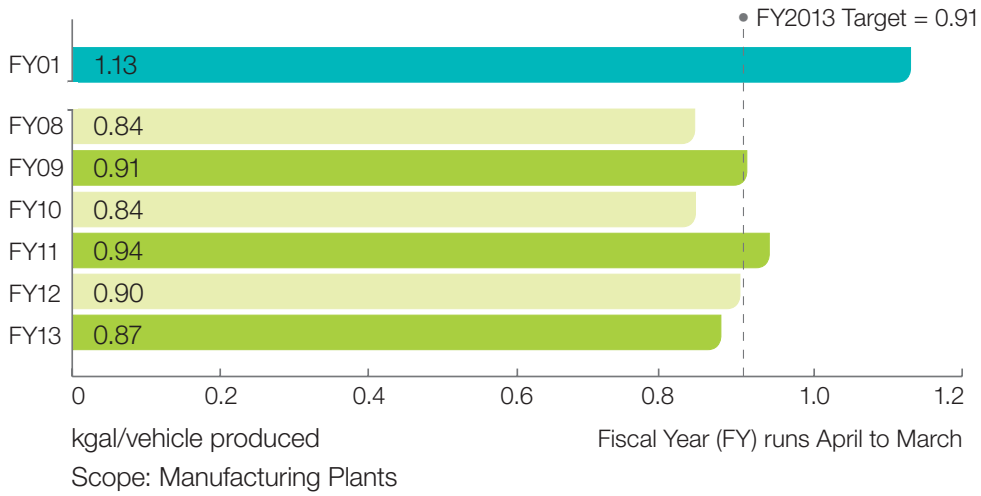
FG28 • Non-saleable Waste



17%
REDUCTION
SINCE FY08

ABOUT THIS CHART: Non-saleable waste is waste we pay to dispose or recycle (such as by incineration, landfill or conversion to energy). Since 2008, we have reduced non-saleable waste by 17 percent. We set a target for fiscal year 2013 to reduce this type of waste at our manufacturing plants to 17.50 kilograms per vehicle. We reduced this waste from 2012 levels, but missed the target, mainly due to an increase in the amount of wastewater shipped off site for treatment. Two of our plants experienced issues with their wastewater treatment systems; countermeasures are being implemented and we are already seeing positive results.

FG30 • Water Use



23%
REDUCTION
SINCE FY01

ABOUT THIS CHART: Toyota's manufacturing plants had a fiscal year 2013 target to reduce water usage from our 2012 target level of 0.92 kilogallons/vehicle, to 0.91 kilogallons per vehicle. We achieved this target and reduced water usage by three percent, to 0.87 kilogallons per vehicle.

FG33 • North American Toyota and Lexus Dealerships With LEED® Certifications

DEALER NAME	LOCATION	YEAR CERTIFIED	CERTIFICATION LEVEL
OpenRoad Lexus	Richmond, British Ontario, Canada	2013	Silver
DCH Toyota of Torrance	Torrance, California	2013	Gold
Westbrook Toyota	Westbrook, Connecticut	2013	Certified
Toyota of Lakewood	Bradenton, Florida	2013	Certified
Tustin Toyota	Tustin, California	2013	Silver
Kenny Ross Toyota	Coraopolis, Pennsylvania	2013	Certified
Welland Toyota	Welland, Ontario, Canada	2012	Gold
Beaverton Toyota (TCSC)	Beaverton, Oregon	2012	Gold
Grappone Toyota	Concord, New Hampshire	2012	Certified
San Francisco Toyota	San Francisco, California	2012	Platinum
Alamo Toyota	San Antonio, Texas	2012	Silver
Sun Toyota	Holiday, Florida	2012	Gold
Vancouver Toyota	Vancouver, Washington	2012	Silver
Bennett Toyota	Allentown, Pennsylvania	2012	Gold
Toyota of the Black Hills	Grand Forks, South Dakota	2012	Silver
Maguire Toyota	Ithaca, New York	2012	Platinum
Toyota Scion of Bend	Bend, Oregon	2011	Gold
Beaman Toyota	Nashville, Tennessee	2011	Certified
Legends Toyota	Kansas City, Kansas	2011	Gold
Lexus of Henderson	Henderson, Nevada	2011	Gold
Stouffville Toyota	Stouffville, Ontario, Canada	2011	Gold
Dave Mungenast Lexus of St. Louis	St. Louis, Missouri	2010	Silver
Grossinger City Toyota	Chicago, Illinois	2010	Silver
James Toyota	Flemington, New Jersey	2010	Silver
Jerry Durant Toyota	Granbury, Texas	2010	Silver
Kendall Toyota	Eugene, Oregon	2010	Platinum
Stratford Toyota	Stratford, Ontario, Canada	2010	Gold
Toyota of El Cajon Certified Center	Santee, California	2010	Gold
Toyota of El Cajon	El Cajon, California	2010	Silver
Caldwell Toyota	Conway, Arkansas	2009	Gold
Fitzgerald's Lakeforest Toyota	Gaithersburg, Maryland	2009	Gold
Lexus of Las Vegas	Las Vegas, Nevada	2009	Gold
Mark Miller Toyota	Salt Lake City, Utah	2009	Gold
Sewell Lexus Pre-Owned	Fort Worth, Texas	2009	Gold
Toyota of Rockwall	Rockwall, Texas	2008	Gold
Pat Lobb Toyota	McKinney, Texas	2007	Silver

ABOUT THIS CHART: We are leading the industry with the number of dealerships certified to LEED. So far, we have assisted 36 Toyota and Lexus dealerships in the United States and Canada with LEED certification: 28 Toyota dealerships and four Lexus dealerships in the U.S., and four Toyota dealerships in Canada. Several more dealerships have completed construction and are waiting for their ratings to be decided. Many more are under construction or in the design and permitting phase and have registered their intent to pursue LEED with the U.S. or Canadian Green Building Councils.