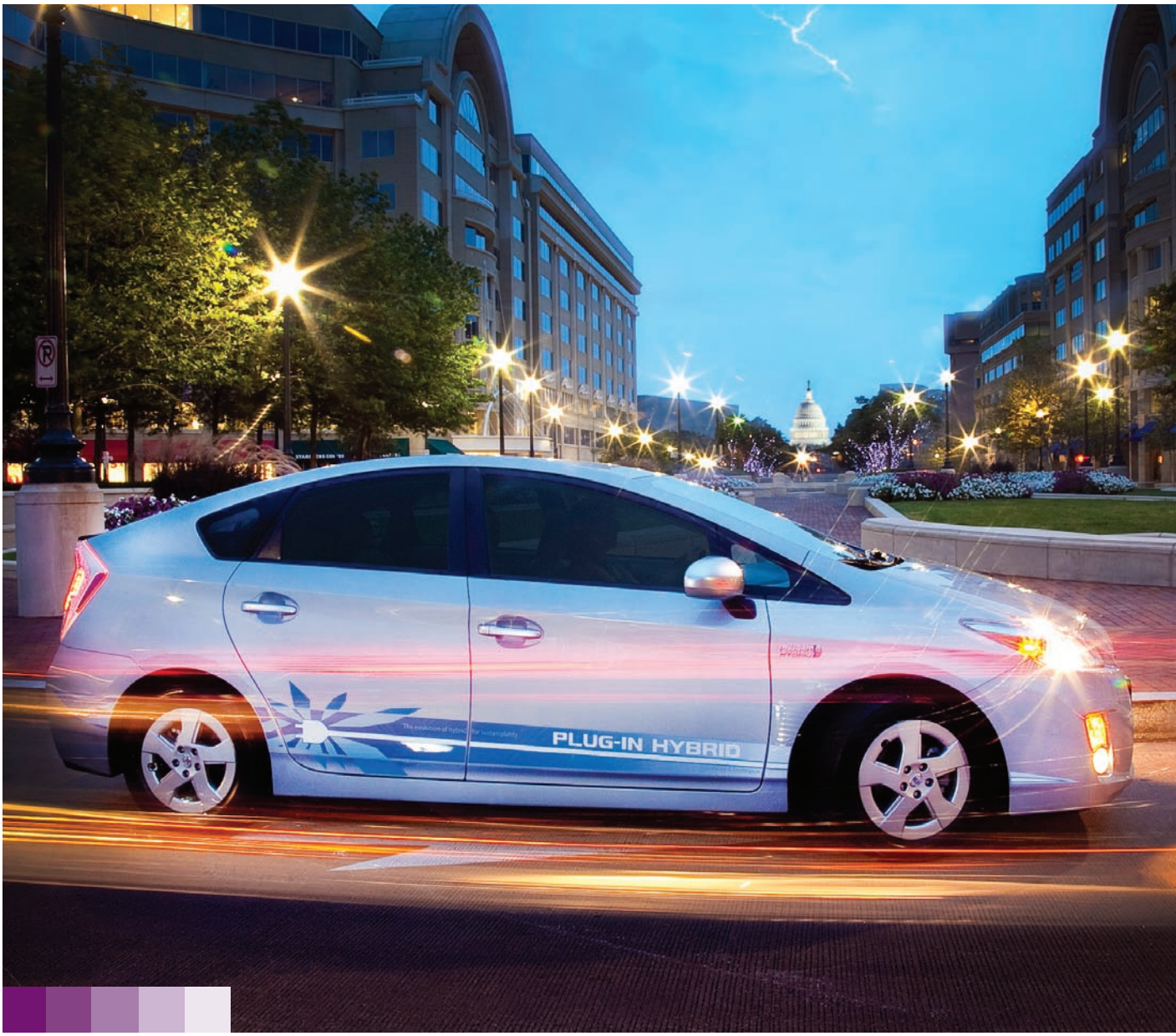
TOYOTA

2010 North America Environmental Report

Challenge, Commitment, Progress



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SCOPE OF THIS REPORT:

The period covered in this North America Environmental Report is fiscal year 2010 (April 1, 2009 through March 31, 2010) and product model year 2010. This report covers the Toyota, Lexus and Scion brands in North America. If data are presented with different dates, this is clearly indicated. This report was published in November 2010.

We report on our progress against our FY2007-2011 Environmental Action Plan. We also provide information on our company's overall economic investment in North America. This report covers activities across the North American region — the United States, Canada and Mexico.

This report is available on the Web. A French version is provided on the Web only. We listened to your comments and suggestions about last year's report, and used them to improve this report. We would appreciate hearing from you again. You may participate in a survey on the Web.

CONTACT TOYOTA MOTOR NORTH AMERICA, INC.

Environmental Report Manager | 601 Lexington Ave, 49th Floor, New York, NY 10022 | © 2010
www.toyota.com (USA) | www.toyota.ca (Canada) | www.toyota.com.mx (Mexico)

TOYOTA | dear reader

WE ARE PLEASED TO PRESENT the tenth annual Toyota North America Environmental Report. Each year we provide a retrospective look at our performance on key environmental issues. This report describes the progress we made in fiscal year 2010 (FY2010) against goals and targets in our North American Environmental Action Plan (EAP). The EAP helps us focus and prioritize the actions we take to reduce the environmental impact of our products, as well as the operations we employ to build, distribute and sell them.

One of our top priorities this past year was to continue improving and demonstrating advanced vehicle technologies, which are essential to the evolution of the automobile. Automakers have been successfully using the same basic technology — the gasoline combustion engine — for over a century, allowing for unprecedented levels of mobility for society. This has not come without a price though, in terms of environmental impacts and increasing demand for limited resources. Toyota recognizes that society's mobility needs must be met without sacrificing environmental quality, and believes that technological innovation is the key to meeting this goal. Thirteen years ago we introduced the Prius, with our Hybrid Synergy Drive® system, to the global marketplace. We are now using this hybrid system as the foundation for the other advanced powertrain technologies we are developing: plug-in hybrids, fuel cell hybrids, and battery electric vehicles.

Our pursuit of these advanced vehicle technologies has helped us recognize the importance of the wider mobility system. As such, our strategy for sustainable mobility encompasses not only new technologies and products, but also the new energy sources that will power them, the design of the urban environment in which they will operate, and the many partnerships that are necessary to bring them to market. However, this strategy will not be successful if consumers are not ready to buy advanced vehicle technologies, and the infrastructure is not in place to support their use. This is why Toyota is working to align technology with the market to ensure successful introduction and adoption of these new vehicles.

To achieve the aims of our sustainable mobility strategy and make progress toward sustainability in our operations, we measure our performance against specific goals and targets in our EAP. While our environmental performance this past year was on track in many areas, we missed some targets due to factors such as the ongoing economic downturn. Economic conditions resulted in lower production volumes which made it more difficult to meet out vehicle-based targets. Despite this, we maintained our vision and continued to work with our customers, employees, shareholders, dealers, partners and local communities to accomplish our long-term goals.

Yoshimi Inaba
Director
Toyota Motor Corporation
President & Chief Operating Officer
Toyota Motor North America, Inc.
Chairman & Chief Executive Officer
Toyota Motor Sales, U.S.A., Inc.

Jim Lentz
Managing Officer
Toyota Motor Corporation
President & Chief Operating Officer
Toyota Motor Sales, U.S.A., Inc.

Dian Ogilvie
Senior Vice President & Secretary
Toyota Motor North America, Inc.

Tetsuo Agata
Senior Managing Director
Toyota Motor Corporation
President & Chief Operating Officer
Toyota Motor Engineering &
Manufacturing North America, Inc.

Highlights of our FY2010 performance include the following:

- Roll-out of our 2010 Prius Plug-in Hybrid Vehicle (PHV) demonstration program, with more than 150 vehicles being placed with program partners in the U.S. and Canada. Our aim is to educate and inform the public, and assess the technology's performance under a wide variety of conditions.
- Improvement of fuel cell hybrid vehicle (FCHV) technology while achieving significant cost reductions. Recent modifications have resulted in an estimated range of 431 miles on a single fill. We plan to bring FCHVs to market in 2015.
- Reduction in energy consumption at our assembly plants, including a project to eliminate centralized boiler systems and install equipment closer to the painting processes resulting in significantly less energy use.
- Decreases in waste to landfill and an emphasis on reducing material use, which for the first time resulted in a greater reduction in the amount of raw material used than the amount of material recycled at our sales and distribution locations.
- Additional Leadership in Energy and Environmental Design (LEED®) certifications for our buildings and promotion of green building practices with our dealers. Kendall Toyota in Eugene, Oregon, is the only LEED Platinum-certified dealership in the world, and the Stratford Toyota in Stratford, Ontario, is the first LEED Gold-certified dealership in Canada.
- Further engagement with communities through Toyota's signature environmental philanthropic program, *TogetherGreen*™, in partnership with the National Audubon Society. To date, 72,400 participants have put in over 275,000 hours of habitat, water, and energy conservation efforts across the U.S.

Details for each of these examples and many more are included throughout this report as we describe our progress against targets and goals across five key areas:

- Energy and Climate Change;
- Recycling and Resource Management;
- Air Quality;
- Environmental Management; and
- Cooperation with Society.

Within each area, we structure the discussion around our life-cycle view of vehicles: design, manufacturing, sales and distribution, use, and ultimately how the vehicle is recycled at end-of-life. We also provide context in terms of our overall vision for sustainable mobility.

We have highlighted targets in each chapter with supporting information to help our readers decide for themselves how well we have done in the past year. Toyota works to ensure that we are both accountable and transparent about our performance, and we welcome your feedback on the content of this report.

Shigeki Terashi
Managing Officer
Toyota Motor Corporation
Executive Vice President
Toyota Motor Engineering & Manufacturing North America, Inc.
President
Toyota Technical Center

Ray Tanguay
Managing Officer
Toyota Motor Corporation
Executive Vice President
Toyota Motor Engineering & Manufacturing North America, Inc.
Chairman
Toyota Motor Manufacturing Canada, Inc.

Steve St. Angelo
Managing Officer
Toyota Motor Corporation
Executive Vice President
Toyota Motor Engineering & Manufacturing, North America, Inc.
Chairman
Toyota Motor Manufacturing, Kentucky, Inc.
Toyota Motor Manufacturing, Mississippi, Inc.
Chief Quality Officer
North American Quality Task Force

Yoichi Tomihara
President & Chief Executive Officer
Toyota Canada Inc.

TOYOTA

environmental vision & action

A local utility and Toyota's plant in Delta, British Columbia worked together on a Sustainable Energy Management Program. Efforts such as tagging compressed air line leaks for rapid repair resulted in a 3 million kilowatt-hour energy reduction over two years.

"Our business is not simply about building and selling cars and trucks. To provide sustainable mobility, we must explore new energy sources, partnerships, and ways of doing business."

– Akio Toyoda, President
Toyota Motor Corporation

"A century after the invention of the automobile, we must reinvent it with powertrains that significantly reduce or eliminate the use of conventional petroleum fuels."

– Jim Lentz, President and Chief Operating Officer, Toyota Motor Sales, U.S.A., Inc.

ONE OF THE GREATEST CHALLENGES of the future is to meet society's mobility needs in a manner that is sustainable. Over the next decade, 78 million people will be added to the world each year, straining current mobility systems, spiking energy demand, depleting natural resources and increasing emissions to our environment including greenhouse gases. It is estimated that by the end of this decade, global population will reach 7.6 billion, with more than half of this population living in urban areas where mobility issues are acute. Recognizing these trends, Toyota created Global Vision 2020, which clearly identifies where we want to be as a company and how we must operate in order to be sustainable in our rapidly changing world.

At Toyota, sustainability means that we consider the environmental, social and economic consequences of our business, and continuously work to reduce the negative, and increase the positive impacts of our activities and decisions. Sustainability challenges us to look at these impacts from all stages of the vehicle life cycle, from the supply of materials, to design, manufacturing, sales, use and end-of-life. It also encourages us to consider the opinions of, and work with stakeholders such as local communities, non-governmental organizations and academia when we identify, prioritize and address our impacts. We are fully committed to sustainable practices within our business, and support our business partners, such as suppliers and dealers, in their efforts to operate sustainably.

Beyond our own operations and those of our business partners, we understand that our vehicles are part of a much larger mobility system. A mobility system includes aspects such as planning, infrastructure development, traffic management, regulatory requirements, and various modes of transport. To achieve sustainable mobility, municipalities, state agencies, public transit authorities, urban planners, industry, community representatives and others that have certain responsibilities in the mobility system must come together to forge a comprehensive vision and strategy to collectively reduce impacts over time.

Toyota's primary responsibility in this effort is to provide technologically advanced vehicles to the marketplace that reduce environmental impacts, eventually replacing conventional automobiles. We do not believe that sustainable mobility will be achieved with a single technological solution, so we have undertaken a broad Comprehensive Environmental Technology (CET) approach to advanced vehicle technologies, with hybrids at the core.

We also believe that we must collaborate with other organizations to find the best solutions to the most challenging issues associated with developing and deploying advanced vehicle technologies. This is why our sustainable mobility strategy includes products, partnerships, the urban environment and energy solutions. We have made significant progress over the past year in following this strategy, including:

- Advanced Technology Vehicle demonstration programs — fleets of Prius plug-in hybrid vehicles (PHVs) and fuel cell hybrid vehicles (FCHVs), tested at partner locations;
- Diversified energy sources for our products — hydrogen for fuel cells, electricity for PHVs and battery electric vehicles (BEVs), as well as low-carbon biofuels;
- Cooperative Agreements — with government entities, universities and industry partners on a variety of advanced research projects;
- Support for infrastructure development — safe and accessible hydrogen infrastructure for FCHVs, and electrified transportation infrastructure for PHVs and BEVs; and
- Thought leadership — participation in discussions and debates on sustainability and mobility options for the future, such as Meeting of the Minds, Governors' Global Climate Summit and Sustainable Mobility Seminars.

In addition to Global Vision 2020 and our strategy, Toyota has other framework documents that support our efforts, including our Guiding Principles, Earth Charter, and consolidated five-year Environmental Action Plans (EAPs). The material issues within our EAPs were identified through analysis of impacts at all points of the vehicle life cycle, and are subject to our governance structure for North America.

FIGURE A

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.

TOYOTA'S GUIDING PRINCIPLES AND EARTH CHARTER

Seven Guiding Principles serve as the fundamental management policy for Toyota's operations worldwide. The principles reflect Toyota's commitment to providing clean, safe and innovative products, while respecting the environment and culture of the local communities in which we operate. These principles also form a foundation for Toyota's Earth Charter (please see Figure A). To learn more about how the Guiding Principles and Earth Charter are put into action, please visit **www.toyota.co.jp/en/vision/index.html**.

ENVIRONMENTAL ACTION PLAN

Our Second Five-Year North American Environmental Action Plan is presented in Figure B. The North American EAP is structured according to the action plan developed by our parent company, Toyota Motor Corporation (TMC). To view TMC's action plan please visit **www.toyota.co.jp/en/environment/vision/plan/fourth_plan.html**.

Similar to TMC's EAP, our action plan covers five key areas with several goals that address our environmental impacts. Each goal has one or more annual or cumulative targets that were established to ensure progress toward the goal. This report describes the progress we have made in the fourth year (FY2010) of this five-year EAP. The status of many of our targets is "On Track," meaning that we are on track for achieving the target by the end of our five-year EAP. At the beginning of each chapter, we restate the relevant targets from our EAP. Throughout the report, we highlight key sentences that indicate whether a target has been achieved, is on track, has been missed, is not on track or is suspended. These sentences are in bold and are followed by the target number from the EAP.

FIGURE B

CONSOLIDATED SUMMARY OF SECOND TOYOTA NORTH AMERICAN ENVIRONMENTAL ACTION PLAN (FY2007-FY2011)

GOALS AND TARGETS	STATUS
ENERGY AND CLIMATE CHANGE	
GOAL 1: Promote the development of technologies to achieve best-in-class fuel efficiency performance	
Targets:	
1.1 Annually meet or exceed CAFE and CAFC standards in U.S. and Canada, respectively (p. 16, Fig. F)	●
1.2 Continue development and deployment of fuel-efficient technologies through the proactive engagement of stakeholders (p. 16)	○
GOAL 2: Introduce vehicle technologies, which support the diversification of energy and fuel sources	
Targets:	
2.1 Promote awareness of the CO_2 reductions and energy security benefits of bio and synthetic fuels (p. 18)	○
2.2 Partner with industry and government to identify and solve challenges toward full-scale commercialization of alternatively fueled vehicles (p. 19)	○
GOAL 3: Promote the development of clean-energy vehicles and ensure wider market acceptance	
Target:	
3.1 Demonstrate feasibility, support necessary infrastructure development, and advocate policies that promote progress toward full-scale commercialization of advanced vehicle technologies (p. 19)	○
GOAL 4: Promote initiatives to reduce traffic congestion through a variety of networking technologies	
Target:	
4.1 (Revised) Promote and communicate Toyota's efforts in Intelligent Transportation Systems (ITS) through media outreach, educational seminars and creation of ITS collateral assets (p. 22)	○
GOAL 5: Understand current CO_2 emissions volumes from North American operations and take action to reduce emissions	
Targets:	
MANUFACTURING	
5.1 Using FY2002 as a base year, reduce total energy usage of manufacturing facilities/operations in North America by 27% per vehicle produced to 6.3MMBTU/vehicle produced (p. 23, Fig. I)	△
5.2 Meet or exceed AAM Climate VISION target of a 10% reduction in CO_2 emissions per vehicle from U.S. assembly operations by CY2012 (CY2002 base year) (p. 24, Fig. J)	△
SALES AND LOGISTICS	
5.3a By fiscal year 2011, reduce energy consumption of U.S. facilities by 18% compared to FY2001 baseline (p. 25)	●
5.3b By fiscal year 2011, reduce energy consumption of U.S. facilities by 26% compared to FY2001 baseline (p. 25, Fig. K)	○
5.4 Achieve 10% reduction in energy consumption from all Toyota Canada facilities by 2010 (p. 26)	△
5.5 Track greenhouse gas emissions resulting from U.S. vehicle and parts logistics and continue to evaluate logistics-related emissions reduction methods (e.g., modal shifts, new technologies) (p. 27)	○
RECYCLING AND RESOURCE MANAGEMENT	
GOAL 6: Further promote and apply the Design for Recycling (DfR) concept	
Target:	
6.1 Evaluate new materials from renewable resources toward further introduction of eco-friendly parts (p. 29)	○
GOAL 7: Reduce waste and the need to recycle material throughout all operations and processes	
Targets:	
MANUFACTURING FACILITIES	
7.1 Reduce compensated waste (nonhazardous waste plus materials Toyota pays to be recycled) to 30 kg/vehicle (p. 30, Fig. L)	●
7.2 Maintain near-zero waste to landfill (p. 31)	×
NONPRODUCTION FACILITIES: *Vehicle Design Facilities:*	
7.3 Achieve zero hazardous landfill and reduce nonhazardous waste toward zero landfill (p. 32)	○
SALES AND LOGISTICS FACILITIES	
7.4 Recycle 75% of Toyota Motor Sales Headquarters waste by FY2010 (p. 32)	×
7.5 Divert 95% waste from Toyota Canada main campus from landfill by FY2010 (p. 32)	○
7.6 Reduce Toyota Canada facility paper consumption per person by 25% by FY2010 (p. 32)	●
7.7 Reduce nonhazardous waste to landfill from U.S. North American Parts Operations by 62% from FY2006 baseline by FY2013 (p. 32)	○
7.8 Achieve and maintain a 90% recycling rate at U.S. Toyota Logistics Services by FY2011 (p. 33)	●
GOAL 8: Reduce water consumption	
Targets:	
MANUFACTURING:	
8.1 Reduce water usage to 0.98 kgal/vehicle (p. 34, Fig. M)	●
SALES AND LOGISTICS	
8.2a For U.S. facilities, evaluate baseline in FY2008 and set reduction targets in FY2009, focusing on areas where water is most scarce (p. 35)	●
8.2b Maintain water consumption at FY2008 levels (p. 35)	●
8.3 Achieve 10% water consumption reduction from Toyota Canada facilities by 2010 (p. 35)	○

EAP Target Status:

● Achieved
○ On Track
△ Not On Track
× Missed
S Suspended

GOALS AND TARGETS	STATUS
RECYCLING AND RESOURCE MANAGEMENT	
GOAL 9: Promote management and further reduce the use of substances of concern (SOCs)	
Targets:	
9.1 Reduce the use of mercury, lead, cadmium and hexavalent chrome in OEM and service parts and accessories to the *de minimis* levels in the current EU Directive (p. 30)	●
9.2 Identify and solve challenges toward effective management of additional vehicle SOCs (p. 30)	○
9.3 Facilitate SOC tracking and verification and support the development of SOC alternatives (p. 30)	○
AIR QUALITY	
Target:	
9.4 Develop and implement alternative materials to reduce vehicle cabin VOC levels (p. 39)	○
GOAL 10: Reduce emissions to improve air quality in urban areas	
Targets:	
10.1 Meet all applicable emissions standards, including Tier 2 and LEV II new vehicle certification standards (p. 37)	●
10.2 Maintain leading level in-use vehicle emissions compliance performance (p. 38)	○
10.3 Promote the development of ultra low emissions technologies and introduce the lowest emitting vehicles (p. 38)	○
GOAL 11: Implement initiatives to reduce and track VOC usage and emissions	
Targets:	
11.1 *Vehicle Painting:* Reduce body painting VOCs to a corporate average of 14.0 g/m^2 (p. 38, Fig. O)	●
11.2 *Vehicle Plastics:* Determine a VOC baseline in FY2006 and set plant targets that begin in FY2007 (p. 39)	●
ENVIRONMENTAL MANAGEMENT	
GOAL 12: Steadily reduce the environmental impact of Toyota vehicles over their product life cycle	
Target:	
12.1 Introduce implementation of Eco-Vehicle Assessment System (VAS) on all new or redesigned vehicle models beginning in CY2007	S
GOAL 13: Strengthen consolidated environmental management by incorporating environmental measures at the planning stages of a product or process	
Targets:	
NA OPERATIONS — ALL	
13.1 Minimize environmental risks and achieve leading levels of environmental performance (p. 41)	○
13.2 Sales and Logistics: Maintain ISO 14001 certification at U.S. vehicle and parts logistics facilities (p. 41)	●
13.3 Sales and Logistics: Achieve ISO 14001 registration at two remaining (of nine total) Toyota Canada facilities by the end of 2007 (p. 41)	●
13.4 Zero annual notices of violation and complaints (p. 41)	●
13.5 Consider LEED® (Leadership in Energy and Environmental Design) certification for new buildings/remodeling (p. 42)	○
13.6 Manufacturing: Develop eco-plant plans for all new production facilities (designing plants to minimize environmental impacts) (p. 43)	○
GOAL 14: Enhance and further promote environmental management systems for business partners	
Targets:	
14.1 SUPPLIERS: Update Toyota environmental requirements (Green Supplier Guidelines) for U.S. plant manufacturing suppliers (p. 43)	●
14.2 DEALERS: Implement U.S. Dealer Environmental Training Programs (HazMat, environmental, pollution prevention) (p. 43)	●
14.3 DEALERS: Achieve LEED certification at eight dealerships and a Certified Service Center by FY2010. Continue to cultivate interest in LEED at dealers. (p. 44)	●
COOPERATION WITH SOCIETY	
GOAL 15: Actively contribute to sustainable development efforts	
Target:	
15.1 Strengthen Toyota's North American philanthropy efforts toward environmental/sustainable development projects and partnerships that contribute to development of new technologies, education and the preservation of biodiversity (p. 47)	○
15.2 Toyota Canada to maintain 25% of total annual philanthropic contributions directed toward environmentally focused programs (p. 47)	●
15.3 Promote basic environmental research aimed at CO_2 emissions reductions (p. 51)	○
GOAL 16: Enrich stakeholder communications	
Targets:	
16.1 Increase the transparency of Toyota's environmental plans, activities and performance by strengthening environmental communication with government agencies, eNGOs, business partners and local communities (p. 51)	○
RECYCLING AND RESOURCE MANAGEMENT	
GOAL 17: Contribute to the development of a recycling-based society	
Targets:	
17.1 Launch at least 100 additional remanufactured parts applications per year (p. 34)	×
17.2 Expand the availability of environmentally preferable paper in U.S. sales and marketing operations (p. 34)	●
17.3 Encourage the safe and environmentally appropriate disposal of tires by dealers through the TMS Tire Program (p. 34)	S

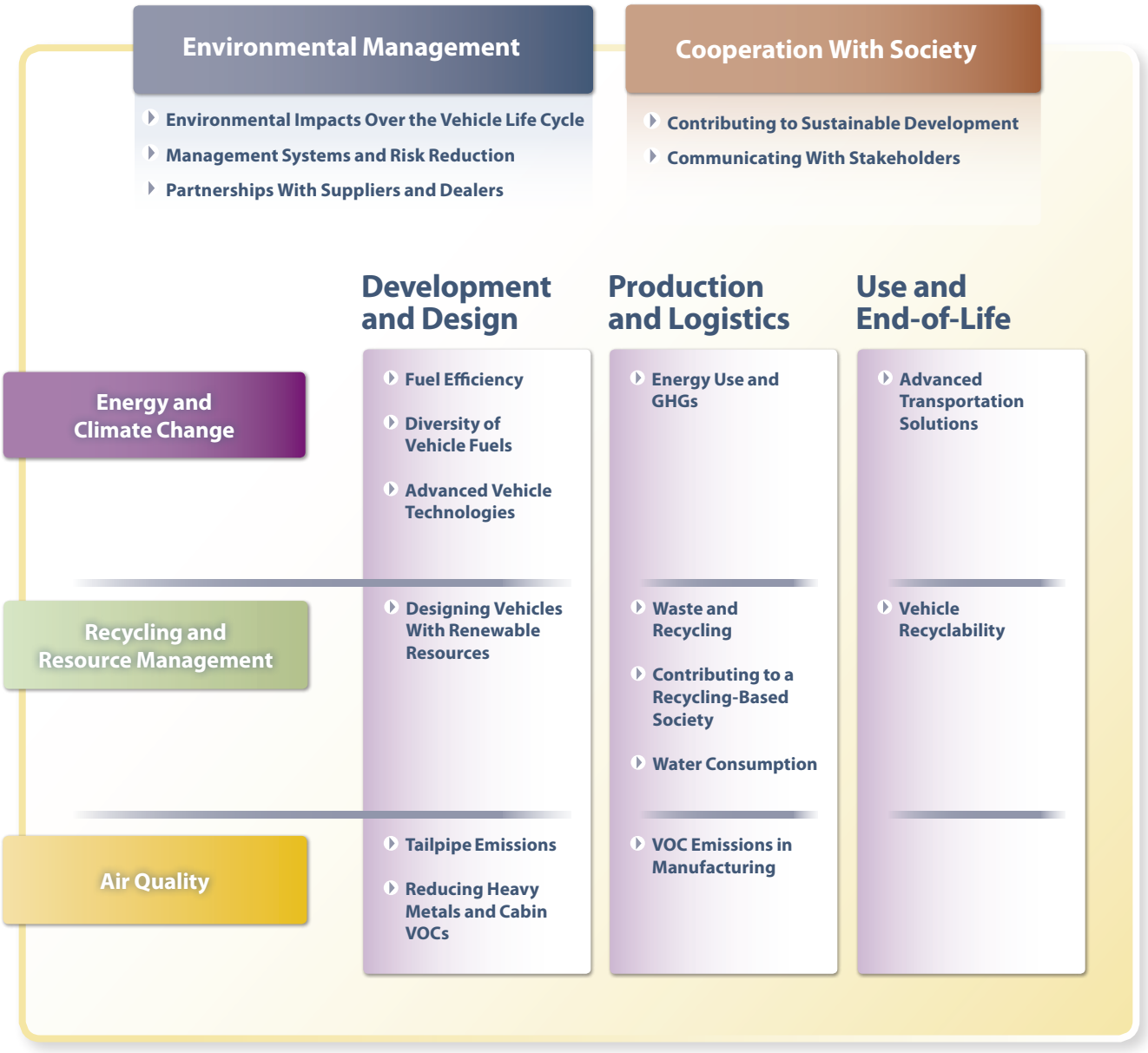
EAP Target Status:

● Achieved
○ On Track
△ Not On Track
× Missed
S Suspended

FIGURE C

TOYOTA'S COMMITMENT TO THE ENVIRONMENT SPANS THE VEHICLE LIFE CYCLE

Toyota's Environmental Action Plan (EAP) reflects a commitment to addressing our environmental footprint. The EAP includes goals and targets that help us manage key challenges in the areas of energy and climate change, recycling and resource management and air quality. We address these three areas across our business, in each vehicle life cycle stage. Our actions are guided by sound environmental management practices and enhanced by cooperating with stakeholders. Each year, we describe our progress against the EAP goals and targets through this report.



ENVIRONMENTAL IMPACTS AT ALL POINTS OF THE VEHICLE LIFE CYCLE

This report focuses on the environmental aspect of sustainability. We consider environmental issues at each life cycle stage of our vehicles and across all aspects of our business. Based on our understanding of the life cycle, and on feedback from experts within and outside Toyota, we have identified key areas that we consider to be most material to our environmental footprint. These areas — energy and climate change, recycling and resource management and air quality — form the backbone of this report. Figure C illustrates how Toyota addresses these areas in each vehicle life cycle stage, and how our actions are guided by sound environmental management practices and enhanced by cooperation with society.

ENVIRONMENTAL COORDINATION

Toyota, like many large corporations, has a number of business areas or functions that make environmental decisions on matters within their scope of responsibility. To effectively address our total environmental footprint, however, coordination across these business areas and among our affiliated companies is necessary. Toyota's governance structure for environmental issues in North America is our North American Environmental Committee (NAEC), and is illustrated in Figure D.

FIGURE D

The NAEC serves a number of essential functions in this region:

- Implementing Toyota's corporate principles, policies and action guidelines;
- Setting overall direction and strategy to achieve the company's vision;
- Establishing priorities, creating action plans and implementing those plans;
- Formulating unified positions on key environmental issues; and
- Generally coordinating environmental activities.

CHIEF ENVIRONMENTAL OFFICERS

Stephen Beatty
Managing Director
Toyota Canada Inc.

Kevin M. Butt
General Manager
Toyota Motor Engineering & Manufacturing North America, Inc.

Dian Ogilvie
Senior Vice President & Secretary
Toyota Motor North America, Inc.

Christopher P. Reynolds
Group Vice President and General Counsel
Toyota Motor Sales, U.S.A., Inc.

The Executive Committee of the NAEC comprises the President from each North American affiliate and their designated delegates. Each Business Area within the Committee is then represented by a senior executive lead and environmental experts. Chief Environmental Officers responsible for coordinating planning and action within each affiliate, also serve the NAEC at either the Executive Committee (as a delegate) or Business Area level. Our current Chief Environmental Officers are pictured above.

The NAEC oversees development of the consolidated five-year Environmental Action Plan and the publishing of this report. In addition, each of Toyota's North American affiliates has established its own environmental governance structure.

TOYOTA

energy & climate change

Stephen Beatty, Toyota Canada Inc. (on left) presents a plug-in hybrid vehicle to Nathalie Normandeau, Deputy Premier and Minister of Natural Resources and Wildlife, Denis Briére, Rector of Laval University, and Pierre-Luke Desgagne, HydroQuébec. Five plug-in hybrid vehicles are being tested at various locations in the Province.

"Real-world testing is essential to successfully introducing plug-in vehicles. Like any revolutionary technology, the benefits of the Prius plug-in hybrid will only be realized if people adopt it."

– Yoichi Tomihara, President & Chief Executive Officer
Toyota Canada Inc.

ENERGY & CLIMATE CHANGE EAP TARGETS

- 1.1 ● Annually meet or exceed CAFE and CAFC standards
- 1.2 ○ Continue development and deployment of fuel-efficient technologies
- 2.1 ○ Promote awareness of energy security benefits of bio and synthetic fuels
- 2.2 ○ Partner with industry and government to identify and solve challenges toward full-scale commercialization of alternatively fueled vehicles
- 3.1 ○ Demonstrate feasibility of full-scale commercialization of advanced vehicle technologies
- 4.1 ○ (Revised) Promote and communicate Toyota's efforts in Intelligent Transportation Systems
- 5.1 △ Reduce total energy usage in manufacturing in North America by 27% per vehicle produced
- 5.2 △ As per AAM Climate VISION, reduce CO_2 emissions 10% per vehicle from U.S. assembly operations by CY2012
- 5.3a ● Reduce energy consumption of U.S. sales and logistics facilities by 18% by FY2011
- 5.3b ○ Reduce energy consumption of U.S. sales and logistics facilities by 26% by FY2011
- 5.4 △ Reduce energy consumption by 10% from all Toyota Canada facilities by 2010
- 5.5 ○ Track greenhouse gas emissions from U.S. vehicle and parts logistics and continue to evaluate emissions reduction methods

TOYOTA HAS ALWAYS BELIEVED that one of its primary purposes is to contribute to society by manufacturing high quality, dependable vehicles. In the seven decades since the company's founding, we have produced a wide range of vehicles that have helped society meet its mobility needs. This has been achieved primarily through one basic technology: the gasoline combustion engine. This technology, however, has resulted in environmental impacts such as air quality degradation and greenhouse gas (GHG) emissions that contribute to climate change. We also recognize that using gasoline as an energy source for vehicles is not sustainable, as petroleum is a limited resource and subject to rapidly increasing global demand and rising prices.

Toyota believes that these impacts must be reduced while maintaining the benefits that automobiles provide us. We cannot do this overnight, but we can find ways to use petroleum products more efficiently in our conventional vehicles, develop vehicles that are less dependent on petroleum, and create new vehicles that use different energy sources. This must be done in a way that is technologically feasible, acceptable to our customers, and supported by the appropriate infrastructure.

We are also committed to reducing our energy use and decreasing our greenhouse gas emissions in our operations, from manufacturing to sales and distribution. Toyota's employees are the key to this effort. By identifying inefficient practices and creating innovative solutions, we have saved, and will continue to save, substantial amounts of energy.

Our performance against EAP targets in the areas of energy and climate change are listed above, and described in this chapter.

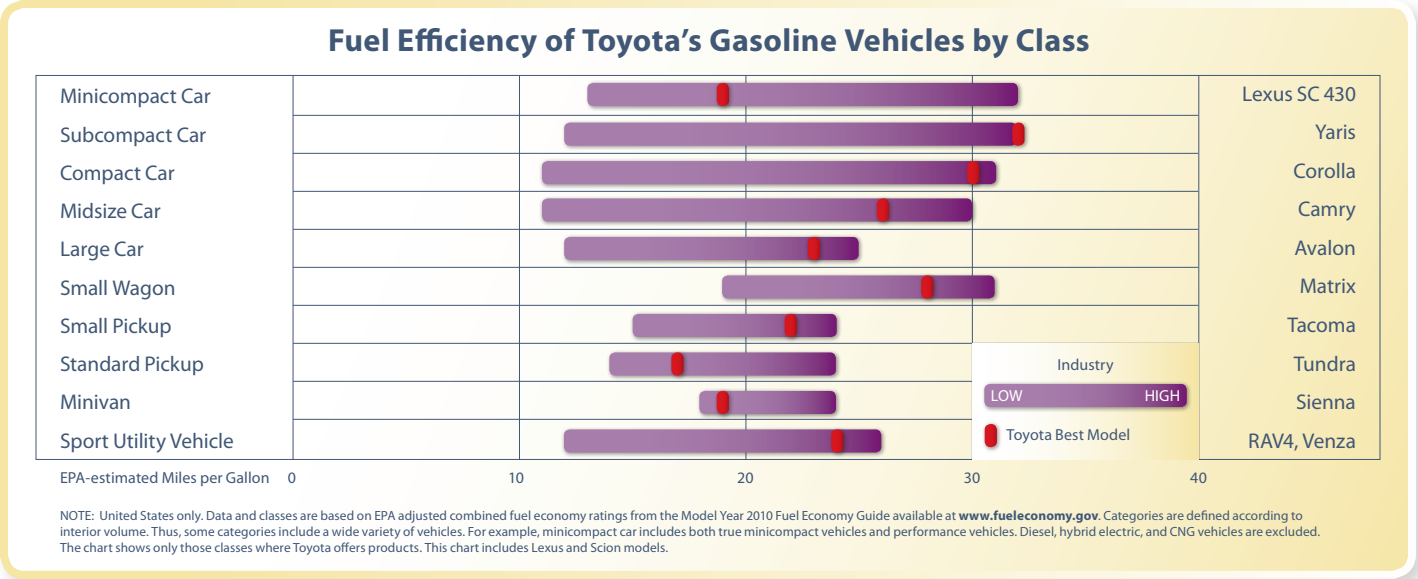
NEW FUEL ECONOMY AND GHG EMISSIONS STANDARDS

This past April, the U.S. Environmental Protection Agency (U.S. EPA) and National Highway Traffic Safety Administration (NHTSA) jointly finalized a coordinated national program for fuel economy and greenhouse gas emissions standards for passenger cars and light trucks. The new requirements cover the 2012 through 2016 model years. By 2016, the new vehicle fleet must meet a GHG standard of 250 grams of CO_2 per mile under U.S. EPA's program and a Corporate Average Fuel Economy (CAFE) standard of 34.1 miles per gallon under NHTSA's program.

The requirements are the product of an historic partnership between the automakers, the federal government, and the state of California. This diverse group sought to create regulations that offer more certainty for automakers, provide significant environmental and energy benefits for the U.S., and preserve vehicle choice for consumers. Prior to this collaboration, automakers faced overlapping and/or conflicting regulations from two separate federal agencies and over a dozen states. Such a patchwork of requirements would have required a unique design for the same vehicle model depending on where it was sold in the U.S. As a manufacturer that distributes and sells the same full lineup of vehicles across the country, and across much of North America, this would have created serious complications for technology development and vehicle distribution across the country.

The process used to develop these regulations provides a notable example of how government and industry can — and should — work together. Building off this success, Toyota and other automakers have already started working with federal and state regulators to consider the next round of standards covering 2017–2025 model years. Such forward looking requirements will necessitate careful consideration of all aspects of advanced technology readiness, including supporting infrastructure and consumer acceptance.

FIGURE E



NOTE: United States only. Data and classes are based on EPA adjusted combined fuel economy ratings from the Model Year 2010 Fuel Economy Guide available at **www.fueleconomy.gov**. Categories are defined according to interior volume. Thus, some categories include a wide variety of vehicles. For example, minicompact car includes both true minicompact vehicles and performance vehicles. Diesel, hybrid electric, and CNG vehicles are excluded. The chart shows only those classes where Toyota offers products. This chart includes Lexus and Scion models.

VEHICLE EFFICIENCY

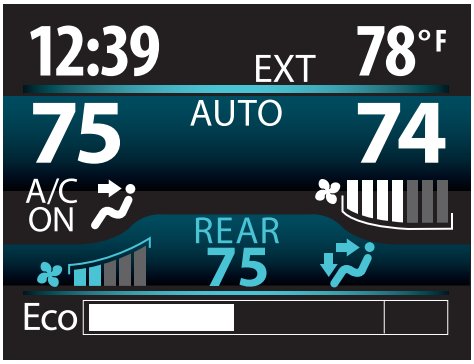
At Toyota, we focus on producing products that meet our customers' expectations and needs while lessening impacts to the environment. One of the most direct ways of doing this is to increase the fuel efficiency of our vehicles and, in FY2010, Toyota offered the most fuel-efficient products of any full-line manufacturer (please see Figure E). Fuel efficiency, simply stated, is the distance a vehicle can be driven on a certain amount of fuel. In the U.S., we measure this in miles per gallon (mpg); in Canada it is liters of fuel/100 kilometers traveled (L/100km). The farther you can travel on a given amount of fuel, the more fuel-efficient the vehicle, the lower the cost to the owner, and — since roughly 19 pounds of CO_2 are emitted per gallon of gasoline combusted with air — the less greenhouse gases.

Currently, fuel efficiency of new cars and trucks is regulated through the CAFE standards in the U.S., set at 27.5 mpg for cars and 23.5 mpg for trucks. Canada's Company Average Fuel Consumption (CAFC) targets are 8.6 L/100km for cars and 10.0 L/100km for trucks. **As shown in Figure F, we exceeded CAFE standards and CAFC targets for both passenger cars and light-duty trucks for model year 2010. (Target 1.1)**

Both the U.S. EPA's Fuel Economy Guide and the Natural Resources Canada Fuel Consumption Guide for model year 2010 list the Toyota Prius as the most fuel-efficient vehicle available for sale in both countries. Natural Resources Canada recognizes the manufacturers of the most fuel-efficient new light-duty vehicles in their class sold in Canada each model year by presenting the ecoENERGY for Vehicles awards. In model year 2010, the Toyota Yaris and Toyota Prius again received the award for the subcompact and midsize classes, respectively. The Toyota Yaris has won this award for the fifth straight year, and the Toyota Prius has won the award for the tenth straight year.

Although we are pleased with the results of our efforts thus far, we continue to push for both incremental and step-changes in our technology to improve fuel economy. (Target 1.2) This is consistent with the Toyota Way of continuous improvement. Our engineers are constantly evaluating our body design, conventional engines and transmissions to see where changes can be made for better fuel efficiency, reduced air pollutants, and lower levels of greenhouse gas emissions (please see Figure G). An example is the improved aerodynamic body design of the 2010 Prius which delivers Toyota's best coefficient of drag at 0.25, and plays a part in the 7 percent improvement in fuel economy over the second generation Prius.

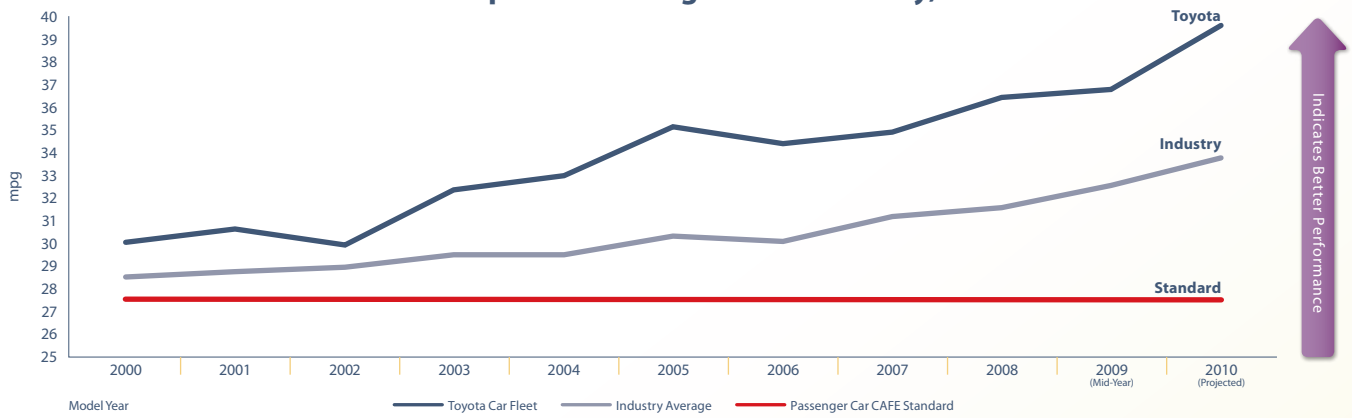
The newly redesigned Sienna uses fuel more efficiently and achieved a fuel economy improvement of combined city and highway of 5 percent. Also, the Sienna includes an "Eco Telltale" feature that assists the driver in using fuel more efficiently. This feature is a light in the meter cluster and an Eco-bar graphic in the instrument panel display (shown below).



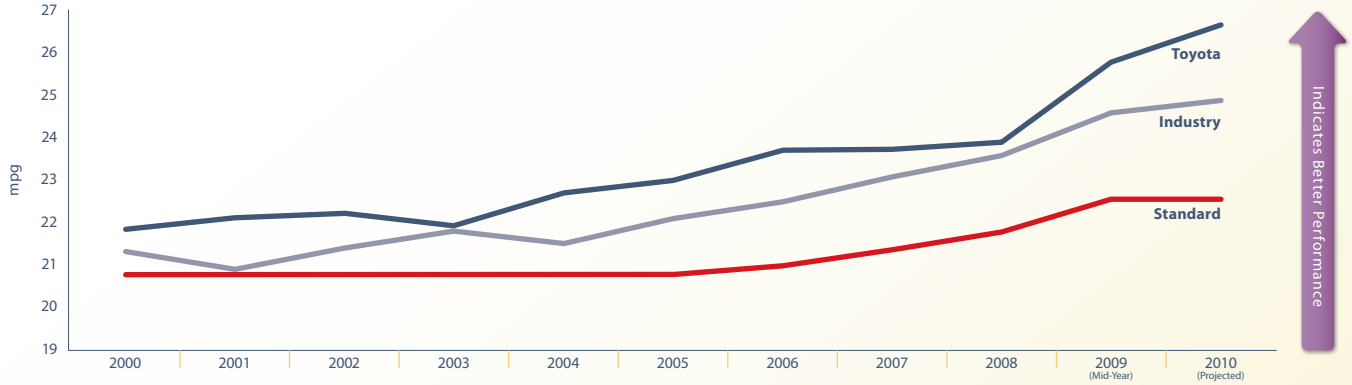
The new Eco-bar graphic, shown at the bottom of the display, helps drivers make adjustments to their driving habits to maximize fuel efficiency.

FIGURE F

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

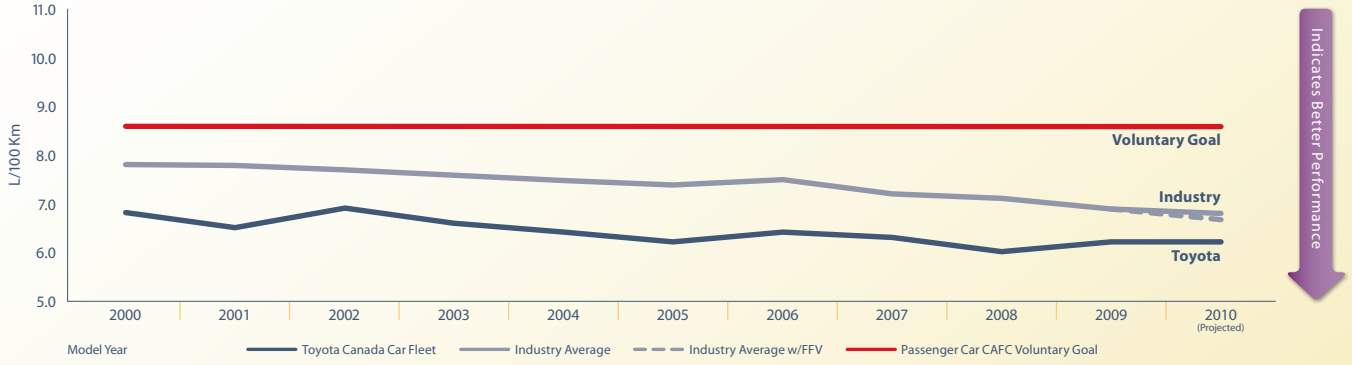


U.S. Truck Corporate Average Fuel Economy, or CAFE

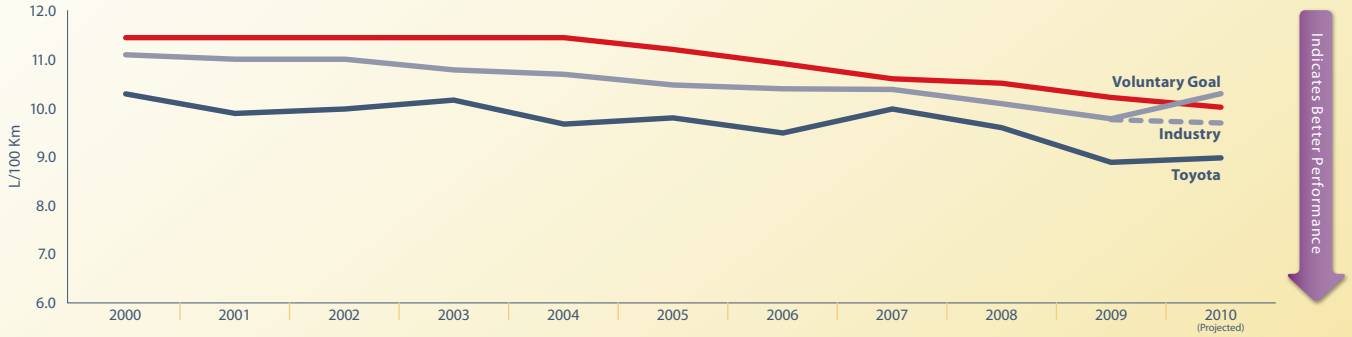


*Based on NHTSA projections using latest publicly available data.

Canadian Car Company Average Fuel Consumption, or CAFC

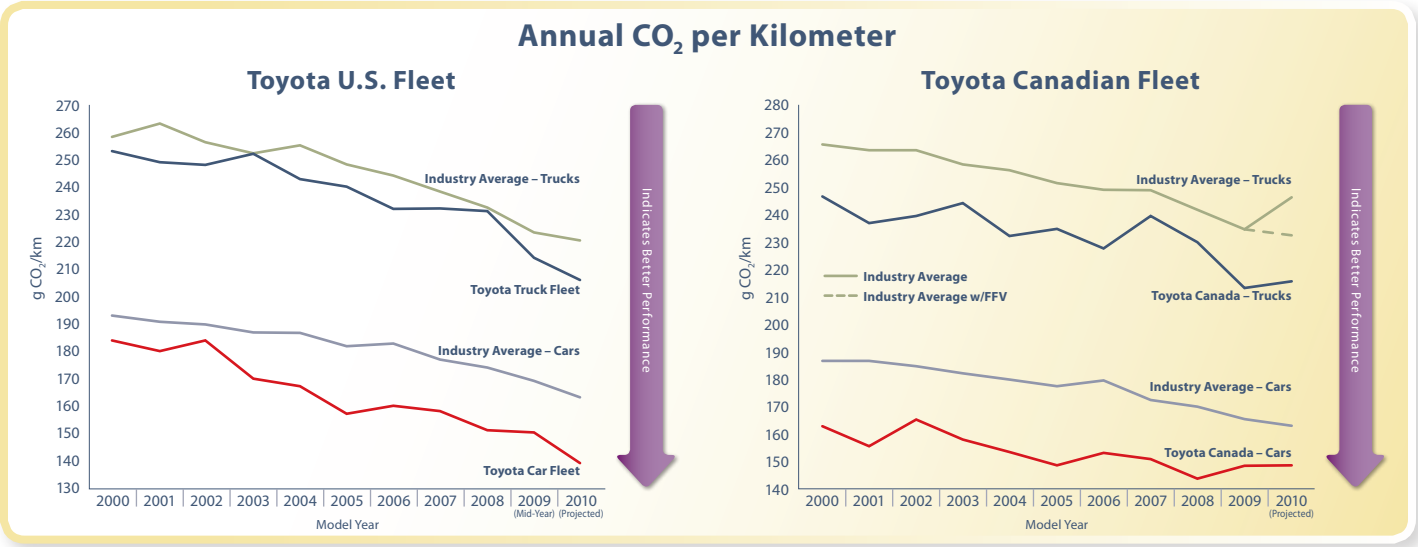


Canadian Truck Company Average Fuel Consumption, or CAFC



NOTE: Unlimited use of flex-fuel vehicle (FFV) credits inflates reported CAFC results compared to actual fuel consumption.

FIGURE G



CO_2 emissions from Toyota's new vehicles are below that of the industry average in both the U.S. and Canada, for both cars and light-duty trucks. See previous CAFC discussion regarding the unlimited use of flex fuel vehicle credits.

Other engineering changes include the use of low viscosity SAE (formerly known as the Society of Automotive Engineers) 0W-20 multigrade gasoline engine oil. This engine oil enables increased fuel economy performance over higher viscosity oils by reducing friction while maintaining necessary lubrication in the engine. Over 40 percent of our vehicle lineup uses this grade of oil. An extra environmental benefit of the SAE 0W-20 oil is that it requires 10,000 mile maintenance intervals instead of the 5,000 mile required by higher viscosity oils, as long as the driving conditions are normal.

VEHICLE FUELS DIVERSITY

Alternative Fuels

Petroleum is a finite resource that, when refined into various products like gasoline, fuels nearly all motorized personal transportation on the globe. As demand for mobility increases, so will the demand and ultimately the price of this resource. To prepare for this, Toyota is examining a range of alternative fuels, such as biofuels, hydrogen and electricity, that may play a role in the eventual transition from petroleum. Many factors must be examined and considered when assessing alternatives to petroleum. Toyota focuses on evaluating the technical, political, infrastructure and consumer acceptance factors for each alternative fuel, and **promotes awareness of carbon dioxide reduction and energy security benefits of these fuels as well. (Target 2.1)** This includes the entire supply chain of the fuel, from feedstock to tailpipe emissions. Toyota's views on biofuels are expressed here with a discussion of electricity and hydrogen included with the plug-in hybrid and fuel cell hybrid vehicle sections later in this chapter.

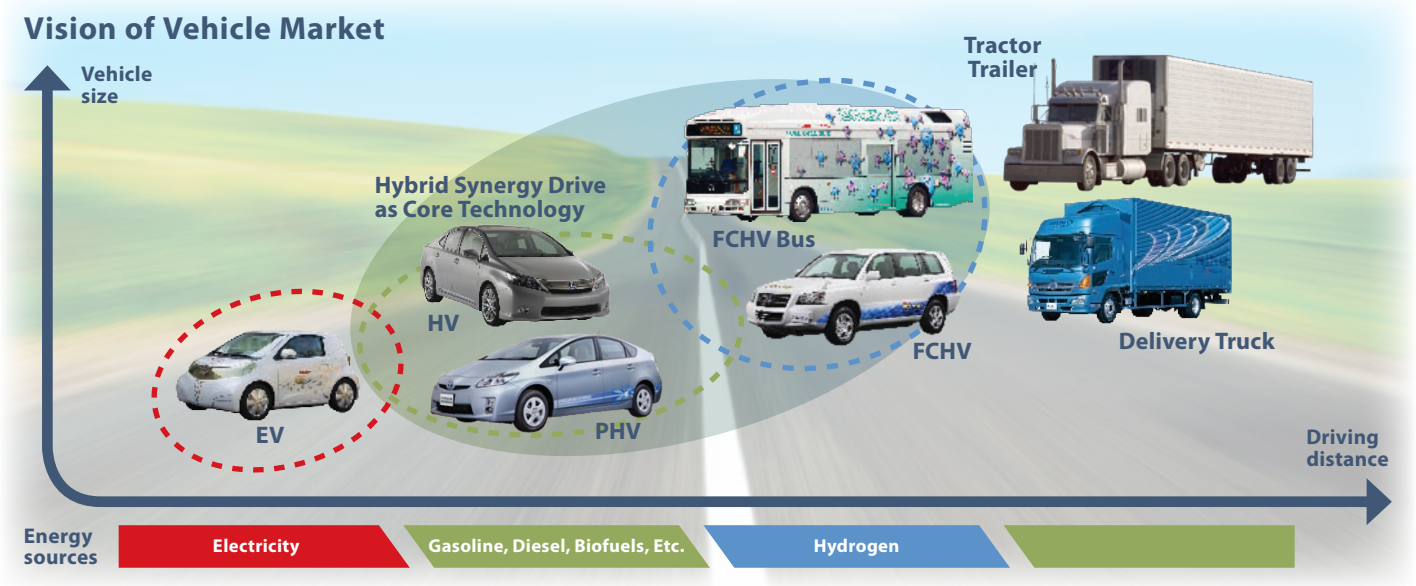
Biofuels

A biofuel is any fuel that can be produced from a renewable biological resource. In the U.S., the National Renewable Fuels Standard (RFS) program mandates that 36 billion gallons of biofuel must be blended with all transportation fuel, except jet fuel, by 2022. Canada has also finalized a Renewable Fuels Regulation (RFR) that will require the use of 5 percent ethanol from December 2010, and 2 percent biodiesel blend in transportation fuels. As corn-based ethanol predominates in the North America, increasing volumes of this fuel to meet RFS and RFR targets has raised concerns about using food crops for fuel, land use change, water consumption, fertilizer runoff and ethanol's somewhat limited carbon reduction benefit.

Further, blends of gasoline with more than 10 percent ethanol can cause drivability and component durability issues in current vehicles, and high-percentage ethanol blends (i.e., E85) can only be used in Flex Fuel Vehicles (FFVs), which are not widely available in the marketplace and suffer reduced range when using the fuel. Toyota believes that three things must happen before ethanol consumption can grow significantly: industry must be given the lead time to introduce fully compatible vehicles and infrastructure; a foolproof system to prevent misfueling of conventional vehicles must be implemented; and sustainable feedstock/production processes must be developed.

A different approach to meeting RFS and RFR requirements is to develop biofuels similar to traditional hydrocarbon fuels. These "bio-hydrocarbon" fuels are made from algae oils or thermal conversion of biomass, and can be blended into petroleum feedstocks or added to gasoline in high concentrations with no adverse effect on existing vehicles or infrastructure. The primary challenge is developing clean (low CO_2) and efficient processes that can be scaled for large volume production. This compatibility with gasoline or diesel fuel makes an extremely attractive option, and is a primary reason Toyota is exploring ways to accelerate the research and development needed to commercialize bio-hydrocarbon fuels.

FIGURE H



Toyota believes biofuel use will continue to increase, and is an effective way to reduce GHG emissions and oil consumption. This growth must be sustainable to ultimately benefit society. Energy consumption, land and water use, economics, food for fuel and process scalability issues all must be considered when evaluating and ultimately selecting a biofuel technology to pursue. Using these criteria, plus political realities, Toyota and its partners assessed a range of biofuel technologies and processes. Key conclusions include the following:

- It is unlikely that one biofuel can meet global or even national needs as the type and quantity of biological material varies by region. In North America for example, corn is likely to continue as a significant ethanol feedstock even as other biofuels enter the market.
- No algae, cellulosic or advanced biofuel process appears to be a clear candidate for near-term commercialization. Although some processes have been operated at commercial scale, none have shown the technical maturity or economic viability to secure the capital needed for large-scale commercialization.
- Bioproducts or high-value advanced biofuels, like bio-jet fuel, are likely to be commercialized more quickly. These products can demand a premium price in the marketplace and lower production volumes require less startup capital.

Toyota continues to closely monitor and evaluate technical development and scale up of a range of biofuel technologies and processes.

ADVANCED VEHICLE TECHNOLOGIES

Toyota is investing in a number of advanced vehicle technologies in order to have the right products commercially available to consumers when the most promising alternative fuels and infrastructure are in place. We are following through with our plan to roll-out conventional hybrids across our entire lineup, as well as plug-in hybrids, battery electric vehicles, and fuel cell hybrid vehicles. Our strategy addresses the key issue of range associated with new energy sources for advanced vehicle technologies (please see Figure H), including research and development of improved battery technologies for these vehicles.

In FY2010, we continued to address a number of challenges associated with full-scale commercialization of advanced vehicles, working with government agencies and other partners. (Target 2.2) We hope to address some of these challenges through our demonstration programs in North America for plug-in hybrids and fuel cell hybrid vehicles. **These programs are intended to educate the public, gather real world consumer feedback, and stimulate the development of infrastructure to support deployment of our advanced vehicles. (Target 3.1)**

The following sections describe Toyota's progress with conventional hybrids and advanced vehicle technologies.

Conventional Hybrid Vehicles

In 1997 we introduced the global market to Prius, the world's first mass-produced gasoline-electric hybrid powertrain vehicle. Since then, we have viewed conventional hybrids as our core powertrain technology, and the cornerstone of our efforts to improve the efficiency of vehicles that use gasoline as an energy source. Equally important, Toyota sees hybrid technology as a stepping stone to minimizing the environmental impacts, particularly the emissions of greenhouse gases, from gasoline-powered vehicles. Ultimately, we believe hybrid technology will be the foundation of future powertrains that can utilize a wide variety of energy sources and fuels, including hydrogen, biofuels, natural gas and electricity.

Toyota and Lexus offer a total of seven gasoline-electric hybrid vehicles in the North America market for model year 2011: the third generation Prius, Camry Hybrid, Highlander Hybrid, RX 450h, GS 450h, HS 250h and the LS 600hL. The Prius continued to be North America's most fuel efficient midsize vehicle for model year 2010. Toyota hopes to achieve sales of one million hybrids a year as early as possible in the 2010s and to adopt hybrid technology on all of our models as soon as feasible in the 2020s. As of September 2010, we have sold nearly 2.8 million hybrids worldwide since the first Prius was introduced 13 years ago. In calendar year 2009, Toyota sold a combined 195,545 Toyota and Lexus gas-electric hybrids in the U.S. alone.

The current Prius hybrid system was launched with the main objective of improving power performance and fuel economy while maintaining hybrid system size and weight. This was achieved by increasing engine power and motor operation voltage from 288 to 500 volts. The third generation Prius, launched in 2009, had 90 percent of its components redesigned. The engine power and electric motor power have been increased significantly, and changes in the cooling system for the battery pack have increased its useable energy. The features of the model year 2010 Prius produced a 10 percent improvement in fuel economy, raising the new U.S. EPA label for combined city/highway to 50 mpg. It also has a U.S. EPA emissions rating of AT-PZEV/Federal Tier 2 Bin 3. Increasing fuel economy — and its inverse relationship to the amount of greenhouse gases emitted — is the key environmental benefit of improvements to the Prius over time.

Also in 2009, we launched the model year 2010 Lexus HS 250h, the world's first dedicated luxury hybrid vehicle. The HS 250h is Lexus' fourth hybrid, and has a combined U.S. EPA-estimated fuel economy rating of 35 mpg utilizing regular 87-octane gasoline. The hybrid powertrain in this model results in a 74 percent better city mpg rating compared to similar vehicles. Underlying the HS 250h's forward-thinking interior design is the use of bioplastic material. Bioplastics are used in a number of injection-molded, foam and board components throughout the car, including trunk compartment trim, cowl side trim, door scuff plates, seat cushions and the package tray. Overall, approximately 30 percent of the combined interior and trunk are covered in bioplastic.

In conjunction with this announcement, Toyota unveiled the FT-CH concept car. This new compact vehicle was developed with the urban environment in mind, as its wheelbase is 22 inches less in total length than the midsize class Prius. This compact hybrid is expected to have an even better fuel economy rating than the Prius, as well as lower greenhouse gas emissions and is a consideration for inclusion in the expanding Prius family.

For more information on Toyota hybrids, please visit **www.hybridsynergydrive.com** and **www.hybridsynergydrive.ca**.

For more information on Lexus hybrids, please visit **www.lexus.com/hybrids/** and **www.lexushybriddrive.ca**.

Plug-In Hybrid Vehicles (PHVs)

In December 2009, Toyota launched the 2010 Prius Plug-in Hybrid Vehicle (PHV) demonstration program. The Prius PHV is based on the third-generation Prius, expanding Toyota's Hybrid Synergy Drive® technology with the introduction of a first generation lithium-ion (Li-ion) drive battery that enables all-electric operation at higher speeds and longer distances than the conventional Prius hybrid.

The Li-ion batteries powering these PHVs are built by Panasonic EV Energy Company, Ltd. (PEVE), a joint venture with Toyota. When fully charged, the vehicle is designed for an electric-only range of approximately 13 miles and is capable of achieving highway speeds up to 60 mph on electricity alone. For longer distances or higher speeds, the Prius PHV reverts to "hybrid mode" and operates like a regular Prius. This ability to utilize all-electric power for short trips or hybrid power for longer drives alleviates the "range anxiety" issue of limited cruising range encountered with pure electric vehicles.

Here in North America, more than 150 PHVs will be placed in regional clusters with select partners for market/consumer analysis and technical demonstration. These regional clusters include Colorado, California, Washington D.C., New York, Oregon and Pennsylvania in the U.S., and British Columbia, Manitoba, Ontario and Québec in Canada.

A key partnership placement is with Xcel Energy's SmartGridCity program in the city of Boulder, Colorado. Eighteen PHVs are placed with Boulder residents who will participate in an interdisciplinary research project coordinated by the University of Colorado at Boulder Renewable and Sustainable Energy Institute (RASEI), a new joint venture between the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) and the University of Colorado at Boulder. RASEI, Xcel Energy and Toyota will use this program to gather data on vehicle performance and charging patterns, electric utility/customer interactions, gather real world consumer feedback and spur the development of public access charging station infrastructure. The locale offers the additional benefit of monitoring high altitude and cold climate performance of Toyota's first generation Li-ion drive battery.

All vehicles in this program will be equipped with a telematics device to capture performance data. The device will monitor activities such as how often the vehicle is charged and when; whether the batteries are depleted or being topped off during charging; trip duration, all-EV driving range, combined mpg and other data. This information will be uploaded directly from the devices to Toyota's website at **www.toyota.com/esq/**.

In March 2010, Toyota Canada Inc. (TCI) began the first phase of a national Canadian program for demonstrations of the Prius PHV. Under this demonstration program, TCI is initially partnering with 13 organizations including academic institutions, provincial government departments, municipalities and provincial power authorities. This first phase will continue through next winter in order to assess performance of the Prius PHV under a range of driving and climatic conditions. Data from this demonstration program will be analyzed by Toyota in conjunction with the results of programs in the U.S.

Toyota believes these demonstration programs are a necessary step in societal preparation for PHVs. The programs allow Toyota the unique opportunity to inform, educate and prepare customers for the electrification of the automobile in general, and the introduction of plug-in hybrid technology. This technology will reduce the amount of petroleum needed to power a vehicle and will potentially reduce both mobile source greenhouse gas emissions and criteria pollutants. To maximize the vehicle's overall environmental benefits, clean electricity sources (wind, solar, nuclear, etc.) are required.

Battery Electric Vehicles (BEVs)

In 1997, Toyota introduced the RAV4 EV battery electric vehicle in California. Close to 1,500 large-battery electric vehicles were either sold or leased over the course of the program, and nearly half of them are still on the road today. Shortly thereafter, Toyota started a modest demonstration program with a small-battery electric urban commuter vehicle, called the e-com. This concept addressed the idea of an "on-demand" city station car that is becoming popular in large urban areas. Although shorter in range, the e-com program addressed a specific mobility niche at a much more affordable price than the RAV4 EV. The RAV4 EV and e-com programs were short lived, however, due to a lack of commitment from the market and consumer readiness.

Battery technology has progressed significantly in the time since the RAV4 EV and e-com programs, but major challenges still remain. The cost of Li-ion batteries needs to be reduced significantly, or a more affordable alternative developed. BEVs will require the creation of infrastructure to allow recharging at multiunit residences, customers' workplaces and on-the-go in order to provide for a greater range of mobility that society expects from vehicles. To work on these challenges, Toyota is engaging in partnerships to advance battery technology and to evaluate electrification infrastructure issues in urban settings.

Toyota believes that increased awareness of environmental issues and the benefits of advanced technology vehicles have reinvigorated an interest in the electric vehicle market. In May 2010, Toyota signed an agreement with Tesla Motors to initiate the development of an electric version of the RAV4. Prototypes will be made combining the Toyota RAV4 model with a Tesla electric powertrain. Toyota plans to bring the new electric RAV4 to market in 2012.

Similar to PHVs, clean electricity sources (wind, solar, nuclear, etc.) are required to maximize the BEV's overall environmental benefits.

Fuel Cell Hybrid Vehicles (FCHVs)

Since the 1990s, Toyota has been developing a vehicle that uses hydrogen. Toyota's research and development is aimed at building a practical and affordable hydrogen fuel cell vehicle, and technical advancements have moved at a rapid pace. Engineers have made strides in reducing materials and manufacturing costs, and improving system durability. Toyota is committed to bringing hydrogen-powered vehicles to global markets in 2015, and we see FCHVs as yet another critical element in our progression toward sustainable mobility.

In combined city and highway driving from Santa Monica to San Diego and back, the Highlander fuel cell hybrid vehicle-advanced (FCHV-*adv*) logged an estimated 68 miles per kilogram of hydrogen, the rough equivalent of 68 mpg, resulting in an estimated range of 431 miles. The cruising range is more than double that of the previous generation, due to increased efficiency and improvements in hydrogen storage capacity. It also has twice the estimated fuel economy of a conventional Highlander hybrid with a similar driving range and zero tailpipe emissions other than water vapor.

We continue to make progress toward commercialization of FCHVs through fuel cell system cost reductions and support of vehicle codes and standards activities. We participate in the SAE Codes and Standards activities to ensure that all advanced powertrains are safe, reliable, and meet the needs of consumers. Last year we remained very active in the SAE Fuel Cell Standards Committee and SAE Hybrid Vehicle Committee where standards and recommended practices were developed for the interface between electric vehicles and the grid, as well as fueling protocols for compressed hydrogen powered fuel cell vehicles.

In late 2009, we began delivering the FCHV-*adv* to limited test customers, and Toyota's demonstration program will provide one of the largest fleets of active fuel cell vehicles in the country. Over the course of our three-year demonstration program, we will place more than 100 vehicles for testing in an effort to demonstrate the technology's performance, reliability and practicality in everyday use. Demonstration vehicles are currently being used at universities, private companies and government agencies in both California and New York. Notably, these vehicles are in service at the University of California, Irvine, and the University of California, Berkeley, as well as New York's John F. Kennedy Airport. As new hydrogen stations come online, we expect to add new regions and partners to the program.

Developing infrastructure for alternative fuels will be critical to deploying advanced vehicle technologies such as hydrogen-powered fuel cell hybrid vehicles. Very few hydrogen fueling stations, such as this one at New York's JFK Airport, are operational today.

Beyond FCHV demonstration programs, we are actively working on larger hydrogen infrastructure issues. Toyota is engaged in discussions with the California Energy Commission (CEC), U.S. Department of Energy, University of California, Davis, University of California, Irvine, University of California, Berkeley, and the California Fuel Cell Partnership on approaches to expand the hydrogen refueling infrastructure to meet the needs of all automakers. Of the several dozen stations operating in California, only a small number are accessible to Toyota customers. To ensure the commercialization of fuel cell vehicles can begin in the 2015 timeframe, Toyota needs at least 20 stations across key deployment areas in California. Toyota has made its own investment in this infrastructure by partnering with Shell to build a new hydrogen-only retail station near our U.S. sales headquarters in Torrance, California. We expect this station to be online in late 2010.

Toyota would like to challenge private industry and the government to work closely with automakers to develop a clear pathway for convenient and reliable access to hydrogen for consumers. Once the broader plan is identified, we are hopeful that a balanced strategy, including private investment, can be implemented to guarantee the success of the early market period.

ADVANCED TRANSPORTATION SOLUTIONS

Sustainable mobility requires that all elements of the broader mobility system be addressed to reduce impacts. This includes how traffic moves through the system, reducing congestion and delays and increasing safety. There has been steady progress in the technology that allows vehicles to communicate with one another, as well as with roadway infrastructure.

Toyota has demonstrated applications of these technologies that were designed and developed by our engineers in Ann Arbor, Michigan. One of the applications that Toyota has demonstrated is the Green Wave Advisor. This device enables traffic signals to communicate directly with the vehicle. The signals send information to the vehicle that is translated and displayed for the driver as a suggested range of speeds. If followed, this information will allow the driver to pass through a series of green lights for a more efficient journey. **Our engineers are continuing to develop and demonstrate advanced transportation solutions for our vehicles that will work in concert with public infrastructure technologies. (Target 4.1)**

ENERGY AND GREENHOUSE GASES IN OUR OPERATIONS

Worldwide consumption of energy continues to rise, and with it, the emissions of greenhouse gases and prices to consumers. This trend has prompted Toyota to concentrate on reducing our own energy consumption and GHG emissions throughout all aspects of our business.

Over the past decade, individual Toyota affiliates have voluntarily measured and managed energy consumption and GHG emissions following best practices. Energy audits and 'treasure hunts' for efficiency improvements have yielded measurable results. Two years ago, we completed our first consolidated greenhouse gas inventory across our North American operations. This inventory is broad in scope, measuring not only emissions from our energy use, but also related third-party emissions like parts and vehicle logistics, employee commuting, and business travel. The process of consolidating our inventory helped us better understand our GHG footprint, and facilitated sharing information across our businesses. In FY2010 we continued this process, and we are looking for additional ways to reduce emissions.

Our efforts to reduce energy consumption have not gone unnoticed. In March of 2010, the U.S. EPA awarded Toyota Motor Engineering & Manufacturing North America, Inc., with a 2010 ENERGY STAR® Sustained Excellence Award — the sixth consecutive award under the ENERGY STAR program. Toyota was chosen as one of 50 organizations out of 17,000 in the program to receive the Sustained Excellence Award. U.S. EPA selects organizations in this category for exhibiting exceptional leadership year after year in the ENERGY STAR program while remaining dedicated to environmental protection through superior energy management.

Below we describe our FY2010 performance against targets for energy consumption and GHG emissions.

Manufacturing

Toyota's North American assembly plants spend more than $147 million annually on energy to run operations, resulting in 1.1 million metric tons of CO_2 emissions per year. Running our operations more efficiently decreases the amount of CO_2 emitted to the atmosphere. Since FY2000, we've reduced our total energy use by 19 percent per vehicle produced even as we have expanded and added new facilities. Collectively, energy improvements at Toyota facilities have reduced CO_2 emissions by almost 150,000 metric tons since 2000.

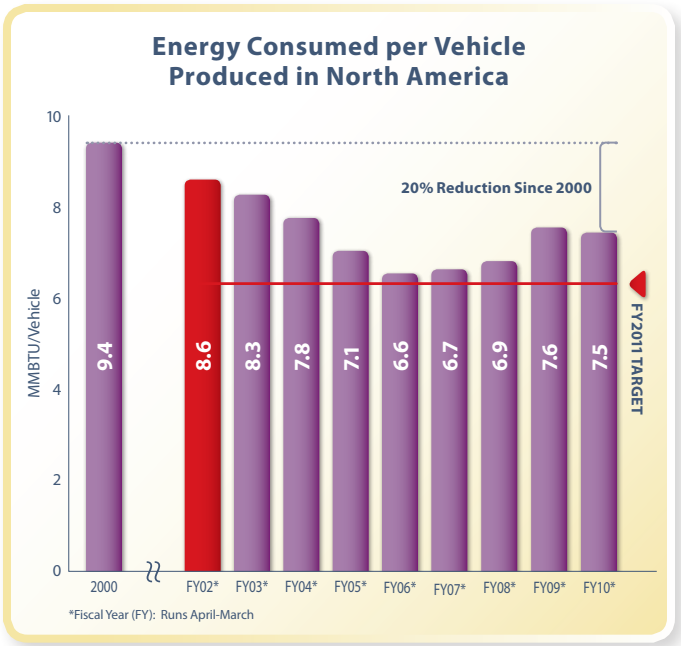
Energy

Toyota has been an ENERGY STAR partner since 2003, and has received six ENERGY STAR awards for Partner of the Year and Sustained Excellence. In FY2010, our assembly plants in Georgetown, Kentucky and Fremont, California, earned ENERGY STAR plant awards, bringing the total number of plant awards received to 17 since 2006. To be eligible for this annual award, a plant's energy performance for the past 12 months must be in the top 25 percent of its industry, and the information used to calculate the plant's energy performance score must be certified by a professional engineer.

Using FY2002 as a base year, we have a target to reduce total energy use in our operations in North America by 27 percent per vehicle produced by FY2011. **Over the past year, our overall energy use per vehicle decreased, but we will not reach our FY2011 goal of 6.3 million British Thermal Units (MMBtus)/vehicle (please see Figure I). (Target 5.1)** One reason is the production volume that was assumed when the target was developed has not been reached since. However, we have reenergized our efforts to implement energy-saving measures at our facilities in North America, some of which are described below.

Over the course of several years, Toyota has investigated, piloted, and is developing the infrastructure to eliminate centralized boilers. At most of our assembly plants, steam is generated within a central utility building to control the temperature and humidity of the air and temperature of the process water in our paint booths. A centralized steam system is generally far away from the process, and the steam loses approximately 20 percent of its heat energy during transportation from the central location to the process, and about 15 percent of heat energy due to steam boiler inefficiency. After investigating and benchmarking other manufacturers with painting operations, we found a more efficient way

FIGURE I



to deliver the same humidity and temperature control requirements for the paint booth air and process water. At one paint shop at our Georgetown, Kentucky, facility, we installed several water heaters near the process water tanks which eliminated the need for steam to heat the process water, and installed a high pressure water atomization system to control the humidity and temperature of the paint booth air. These changes have reduced energy consumption by 81,000 MMBtus per year from one paint shop. We also installed these smaller systems at our facility in Princeton, Indiana, and have plans to implement this change at other paint shops across North America. After implementation is complete, we will be able to shutdown the centralized steam boilers and therefore eliminate the need for natural gas to generate steam.

In 2009, our plant in Delta, British Columbia, partnered with their local utility company BC Hydro, to implement a Sustainable Energy Management Program under the utility's Power Smart program. Through this program, the plant committed to a 1.5 million kilowatt-hour per year reduction in electricity over a two-year period. By the end of FY2010, our plant achieved the original goal of a 3 million kilowatt-hour total ahead of schedule, and continues to save more energy. Reductions were achieved in part by a compressed air leak tag program which reduced energy consumption by 9 percent and energy costs by 8.5 percent. Team members at our plant and BC Hydro are currently working to set a new energy reduction goal for the future.

A team member from our Delta, British Columbia, facility identifies leaks in compressed air lines. Tagging leaks makes them easier to identify and repair quickly, saving more energy.

Our facility in Jackson, Tennessee has developed several options to reduce energy consumption. In FY2010, team members tested many of these options for feasibility and savings. An example is the reduction in pressure of the compressed air system. Every two pounds per square inch (psi) in pressure reduction saves 1.5 percent of operating cost, so the team dropped the set point pressure from 105 to 98 psi without losing operational efficiency. Team members also focused on lighting use, unplugging fixtures and reducing the number of lights within fixtures. They also reduced the air flow in supply and exhaust fans by 50 percent, and installed capacitors on large 500 horsepower motors.

Team members at our plant in Buffalo, West Virginia, set a goal for a 1 megawatt reduction in energy consumption. Focusing on heating, venting and air conditioning (HVAC), they noticed that the HVAC air handler fans operated at 100 percent capacity, regardless of reaching set points, because they were manually controlled. In February and March 2010, team members installed Variable Frequency Drives (VFDs) on the air supply and return fan motors. The VFDs enable a better approximation of the air flow needed based on actual conditions, and programming that optimizes energy savings. The team is now seeing a substantial improvement in HVAC power usage.

In Huntsville, Alabama, our assembly plant has made notable progress in reducing its energy consumption. In FY2010 alone, the plant saved 6,035 MMBtus of energy. These reductions were a culmination of hard work by our team members undertaking a wide variety of projects and initiatives. One of these was the shutdown of one side of the plant when not in use. Team members turned off 10 of 16 HVAC units, transformers, and compressed air header lights for 10 hours per day. Further, main compressed air headers and dump valves on compressed air lines are shut off across the plant, and only opened when needed. The ambient air temperature in the plant was also raised three degrees. Outside of the plant, the solar panel array installed the previous year has resulted in 7,248 kilowatt-hours of renewable energy put back on the grid in FY2010.

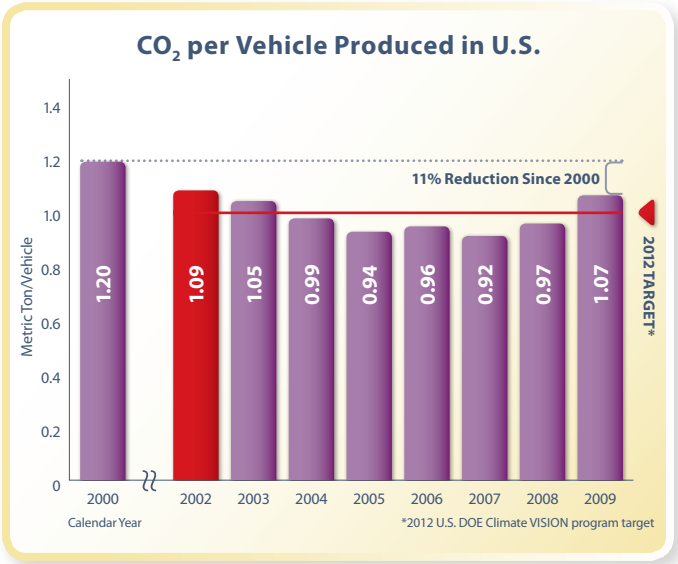
Reducing energy consumption has also been high on the priority list for our manufacturing plant in Long Beach, California. Team members evaluated and implemented a number of energy-saving projects, including: replacing older servers with more efficient models in the data center; installing unified controls for lights, fans and equipment across the plant; turning off existing lighting that was not needed in the stamping area of the plant; and replacing all energy-intensive 400-watt lighting fixtures in the plant with fixtures using less than 60 watts of energy. These efforts resulted in a savings of more than 125 megawatts in energy.

Greenhouse Gas Emissions

Using leading protocols, we compile a greenhouse gas inventory for manufacturing as part of the consolidated GHG inventory for North America. Energy use is the main source of greenhouse gases from our assembly plants.

In the U.S., as part of a voluntary program with the Department of Energy, Toyota and other automakers committed to reducing the level of GHGs emitted from manufacturing operations by 10 percent per vehicle produced by CY2012, compared to a CY2002 baseline. This reduction translates to a value of 0.98 metric tons of CO_2 per vehicle produced, and we have been below this level from CY2005 to CY2008. **In CY2009 our performance against this value was 1.07 metric tons of CO_2 per vehicle produced. Due to similar circumstances that impacted our energy targets, we now are not on track to meet the target for CY2012 (please see Figure J).** **(Target 5.2)**

FIGURE J



Sales and Logistics

Toyota's efforts to reduce energy consumption and greenhouse gas emissions do not stop when our products leave our manufacturing plants. We continue to look for opportunities to improve energy efficiency, reduce overall energy consumption and lower greenhouse gas emissions from our sales offices and logistics operations across North America.

Energy

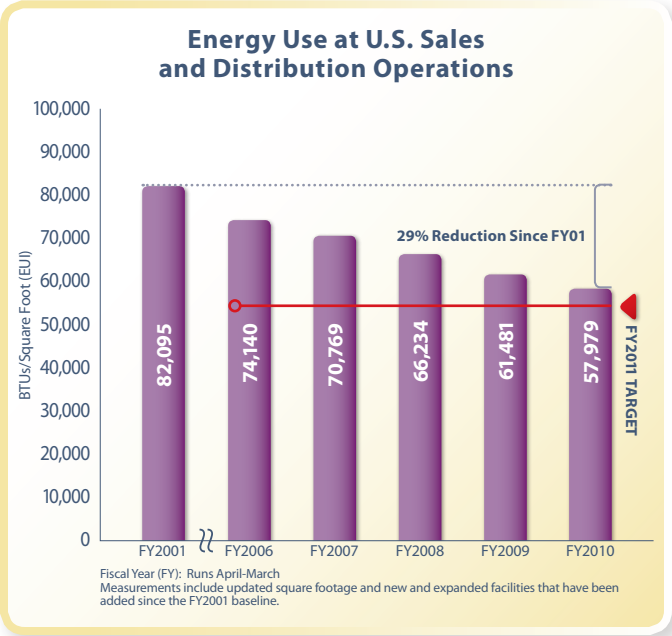
Toyota Motor Sales, U.S.A., Inc. and Toyota Canada Inc. market products and services to more than 1800 dealerships in North America. This is achieved through a network of parts and vehicle distribution centers, regional sales offices and two headquarters sites in Torrance, California and Toronto, Ontario. Toyota owns some of the buildings, equipment and vehicles necessary to conduct sales and distribution operations with the remainder owned by third parties such as trucking companies and rail carriers. As these companies are part of our larger value chain, we partner with them to help reduce their energy consumption as well.

Energy Consumption at Our Facilities

As part of our EAP, Toyota's logistics operations and sales offices in the U.S. set a target to reduce energy consumption, measured in Btus per building square foot (Btu/ft^2) by 18 percent by FY2011 from an FY2001 baseline. **We achieved this target in FY2007, well ahead of schedule. (Target 5.3a)**

In line with our philosophy of continuous improvement, we then set another target to achieve a 26 percent reduction by FY2011. **In FY2010, we exceeded this target as well, with a reduction of 31.2 percent Btu/ft^2 (please see Figure K). (Target 5.3b)** We have set a new goal of 32.6 percent for FY2011 and are currently working toward that reduction level.

FIGURE K



Toyota's real estate and facilities portfolio has actually grown 19.6 percent since FY2001, making it very challenging to reach and exceed targets, but we have continued to do so. During FY2010, our reductions came from *kaizens* (continuous improvements) at the headquarters campus and elsewhere, but some of the drop in energy consumption was due to decreased production and operating hours at most Part Centers, Parts Distribution Centers (PDCs) and Vehicle Distribution Centers (VDCs).

An example of a *kaizen* is our work in the Information Systems Data Center at our campus in Torrance, California. Our associates teamed with IBM and Southern California Edison to conduct a project assessing thermal readings from floor to ceiling in an effort to pinpoint power and cooling inefficiencies in the data center. The team determined that it could shut down three of 15 air conditioning units without deleterious effects, improve air flow management, reduce chilled air leak rates and match cooling capacities to the actual data center power consumption. They also installed temperature-controlled floors. The total savings from these actions are estimated at 600,000 kilowatt-hours annually.

In FY2010, we were also renovating a portion of our PDC in Torrance, California. As part of the renovation process, we conducted a lighting retrofit using high-efficiency lamps that consume less energy. We also installed motion sensors to power down the lighting in response to shift changes, breaks and downtime. At our PDC in Caldwell, New Jersey, the warehouse lighting is now controlled by an automated system, and has a schedule that matches the normal hours of operation of the warehouse, as well as shut downs for weekends and holidays. Some parts of the warehouse have motion sensors to allow for non-standard hours of work, such as those for the janitorial crew.

Toyota is also committed to supporting renewable energy development and expanding the use in our sales and logistics operations. Our PDC in Caldwell, New Jersey has a solar photovoltaic system on its roof that is owned by a third party. This array generates 1.8 million kilowatt-hours of energy making it available for the local grid. Last year we reported on the solar array installed on Toyota's Parts Center in Ontario, California. It is still performing to expectations and provides 58 percent of the warehouse's energy needs, a total of 3,071,224 kilowatt-hours in calendar year 2009. Toyota also purchased two years of Renewable Energy Certificates (RECs) for our regional Training Centers in Phoenix, Arizona, and Rancho Cucamonga, California. To meet its energy needs, our Lexus Training Center in Dallas, Texas, buys 100 percent renewable wind power from a green power utility.

Toyota has installed solar photovoltaic arrays at a number of its facilities in North America. In FY2010, our Parts Distribution Center in Caldwell, New Jersey, and our Parts Center in Ontario, California, generated over 4 million kilowatt-hours of electricity from solar energy.

In Canada, we set a target to reduce energy consumption by 10 percent from our headquarters, sales offices and logistics facilities by 2010 from a 2004 baseline. **This past year, we consumed 8.3 million kilowatt-hours of energy, which was an improvement from the previous year, but not enough to meet our target. (Target 5.4)** This was due to four years of significant growth in the work force. Regardless, we continue to look for opportunities to improve our performance in the area of energy efficiency and reduced consumption. An example is the replacement of existing printers, copiers, fax machines and scanners with multi-functional printers at our headquarters campus. These new units are 30 percent more energy efficient than standard printers formerly in use, and we have been able to reduce the total number of machines from 43 to 27.

Energy Consumption From Transportation

In FY2010, our road and rail logistics carriers drove over 2.5 million miles per day, transporting vehicles and parts across North America. A substantial amount of fuel is consumed from this activity, both by Toyota directly and by our third-party transport partners. As a result, we focus on using fuel more efficiently to reduce transport-related impacts to the environment. Examples of how Toyota and its transport partners reduce fuel use are provided here.

Toyota has joined the U.S. EPA's SmartWay^{SM} Transport Partnership. This program is designed in part to improve energy efficiency in the freight sector. Companies that participate in SmartWay save money, reduce fuel consumption and are recognized for their social responsibility and leadership. Toyota Transport, our in-house trucking operation, is a certified carrier in the program, while Toyota Logistics Services (TLS) is a certified shipper, requiring reporting from all third-party carriers. As part of the program, we have committed to sourcing half of our shipping needs from third parties who are also certified under the program. We have exceeded this commitment by using certified shippers for 90 percent of our needs.

Specific fuel-saving actions included installing side tarps and underbody pans on 18 trailers; governing speed with a 5 mph reduction; auto start/stop mechanisms on seven trucks to reduce idling during hydraulic trailer lift operation from 45 minutes to 7 minutes; driver education that covers progressive shifting, gradual speed increase, driving the speed limit, eliminating fast starts/stops and a competition among drivers to see who can increase their mpg the most, with monthly recognition. Toyota's fleet mpg improved 4.5 percent from taking these and other actions in FY2010.

Starting several years ago, Toyota has worked to improve truck aerodynamics. This past year we have focused on expanding the use of aerodynamic equipment to a larger number of vehicles, and testing the equipment across the country. This includes including full rooftop fairings and cab extenders on all of Toyota's newest trucks; fitting some with gas tank covers; installing nose cones on trucks that are being tested along California's central coast; and installing boat tails and side skirts on trucks being tested in the San Diego area. Although we are still evaluating the impact of weather and driver habits on our data, we see a 5 percent overall improvement in fuel economy.

We have also been working with our rail carriers to increase fuel economy from this mode of transport. Actions taken in FY2010 include block loading of vehicles, resulting in less shunting of rail cars and less fuel use in the rail yard; using Auto-Max cars that can accommodate more than twice the number of SUVs per railcar than before; and using fuel cell and hybrid switch yard engines rather than conventional ones. These efforts have resulted in a 3 percent increase in fuel economy over the previous year.

Toyota manages environmental impacts across all of our operations, including logistics. Modifications to our trucks, including cab extenders, side skirts, nose cones and boat tails continue to increase the fuel efficiency of our fleet.

Our energy reduction work is not just limited to land; we also evaluate our shipping methods on the seas. Toyota has an exclusive contract with the NYK Line to ship its vehicles from Japan to the U.S. on the M/V Auriga Leader — the world's first cargo ship to be partially powered by solar power. This ship is part of a demonstration project to help raise awareness about reducing fossil fuel use and greenhouse gas emissions from large ships. There are 328 solar panels on the top deck of the ship, and it receives 10 percent of its overall energy needs from this solar array. The ship's developer has set aggressive targets to reduce both the fuel consumption and the resultant greenhouse gas emissions from this vessel.

Greenhouse Gas Emissions

Over the last decade, Toyota's sales and logistics operations have accounted for our greenhouse gas emissions using The GHG Protocol® developed by the World Resources Institute and the World Business Council for Sustainable Development. The scope of our annual inventory includes GHG emissions from purchased electricity, natural gas use, business travel, employee commuting, and logistics and supply activities. We use the results of our inventory to guide our efforts to reduce energy consumption in our buildings as well as all means of transport. **In particular, we track GHG emissions resulting from vehicle and parts logistics (including our third-party logistics providers) and continue to evaluate logistics-related emissions reduction methods. (Target 5.5)**

TOYOTA

recycling & resource management

Materials used in our operations are highly valued, and are reused or recycled whenever possible. A Toyota team member in Huntsville, Alabama, transfers coolant from an obsolete process into a container. This coolant will be used in other equipment at the plant, rather than sent off-site as a waste for disposal.

"Toyota continues to make significant investments in R&D, in part to ensure we are doing everything possible to minimize our environmental footprint."

– Shigeki Terashi, President, Toyota Technical Center

RECYCLING & RESOURCE MANAGEMENT

- 6.1 ○ Evaluate new materials toward introduction of eco-friendly parts
- 7.1 ● Reduce compensated waste to 30 kg per vehicle in manufacturing
- 7.2 × Maintain near-zero waste to landfill
- 7.3 ○ Achieve zero hazardous landfill and reduce nonhazardous waste toward zero landfill
- 7.4 × Recycle 75% of Toyota Motor Sales Headquarters waste by FY2010
- 7.5 ○ Divert 95% waste from Canada's main sales campus by the end of CY2010
- 7.6 ● Reduce paper consumption by 25% per person at Canadian facilities
- 7.7 ○ Reduce nonhazardous waste to landfill from U.S. parts operations by 62%
- 7.8 ● Achieve a 90% recycling rate at U.S. Toyota Logistics Services by FY2011
- 8.1 ● Reduce water usage in manufacturing to 0.98 kgal/vehicle
- 8.2a ● For U.S. facilities, evaluate water baseline in FY2008 and set reduction targets in FY2009
- 8.2b ● Maintain water consumption at U.S. sales and logistics sites at FY2008 levels
- 8.3 ○ Achieve 10% water consumption reduction at Canada sales and logistics sites by 2010
- 9.1 ● Reduce use of mercury, lead, cadmium and hexavalent chrome to *de minimus* levels
- 9.2 ○ Identify challenges toward effective management of additional vehicle SOCs
- 9.3 ○ Support development of SOC alternatives
- 17.1 × Launch at least 100 additional remanufactured parts applications per year
- 17.2 ● Expand availability of environmentally preferable paper in U.S. sales operations
- 17.3 S Encourage environmentally appropriate disposal of tires through TMS Tire Program

AS A COMPANY, we value all materials and natural resources we use to run our operations and make our products. We see waste as inefficiency in our operations, and seek to reduce, reuse and recycle materials and resources wherever possible. Source reduction is a top priority because it results in less natural resource use, prevents pollution from raw material extraction, lowers energy use and emissions from manufacturing and transport, and reduces waste to landfill or incineration. Where source reduction is not possible, reusing or recycling materials benefits the environment by diverting materials from waste disposal and conserving natural resources by serving as a feedstock for manufacturing processes.

Toyota looks for opportunities to reduce, reuse, recycle and manage our resource use at all stages of the vehicle life cycle, from design to manufacturing, sales and distribution, use and end-of-life phases. Our performance against targets in these areas for FY2010 is described in this chapter.

DESIGNING VEHICLES WITH THE ENVIRONMENT IN MIND

Ecological plastics are derived either wholly from plant materials, or in combination with petroleum-derived materials, and emit less CO_2 during their life cycle than plastics made solely from petroleum. Toyota uses these plastics in some of our vehicle parts such as scuff plates, sun visors, seat cushions, trunk liners and door trim. We have also developed bio-based plastics using a polypropylene/polylactic acid (PP/PLA) alloy, and applied this material to interior parts of our vehicles.

Toyota's model year 2011 Prius has been redesigned. It incorporates biobased plastics in the driver seat cushion, scuff plate and cowl side trim. Our model year 2011 Sienna has also been redesigned, and it incorporates recyclable material for the interior trim lower garnishes. The deck trim and door trims are made using PP material.

In addition to bio-plastics, we are incorporating other recycled materials in our vehicles. In our truck line, the Tundra now includes a silencer pad made from recycled polyvinyl chloride (PVC). The silencer pad is located between the rear seats and the sheet metal of the cab; its function is to reduce noise within the cab. As of April 2010, Toyota made a running change to production to include these recycled PVC pads in our Tundra trucks.

Natural materials are also considered for parts and components. Our team members that designed the Lexus created a deck board made from jute. Jute is a vegetable fiber that can be spun into coarse, strong threads, and as a fabric, is commonly known as burlap. A deck board is a part that covers the interior trunk space above the spare tire. The jute deck board is the first natural fiber, load-bearing floor used in one of our SUVs. Development work was completed in FY2010, and we made running changes to our production in August 2010 to install this new component in our RX 350s.

We have made progress in our effort to evaluate and incorporate renewable resources in our parts and components, and we will continue this practice going forward. (Target 6.1)

SUBSTANCES OF CONCERN

In North America, our strategy for substances of concern (SOCs) focuses on four heavy metals that are known to cause impacts to the environment: hexavalent chrome, mercury, lead and cadmium. We seek to reduce these SOCs in parts, components and accessories in Toyota, Lexus, and Scion vehicles. In parallel to this effort, we are also collaborating with regulatory agencies to bring about necessary changes to management of SOCs, shifting from retroactive mandates to a proactive process that allows for appropriate planning and substitution of chemicals with better alternatives.

Reducing SOCs

As we take a life cycle view to design, we recognized early on that certain chemicals incorporated into parts and components could cause environmental impacts when vehicles reach the end of their useful life — either in scrap yards or landfills. This understanding led to Toyota's voluntary commitment in 2004 to minimize SOCs in North America. We have followed through on that commitment for the last six years

with measurable progress made in FY2010. **Working closely with our suppliers, we have successfully reduced SOCs in North America to *de minimis* (negligible) levels as outlined in the European Union Directive on End-of-Life Vehicles (as defined in 2008). (Target 9.1)** Toyota's model year 2011 Sienna was redesigned to have parts that only contain *de minimis* amounts of SOCs that we manage, with the exception of lead in lead-acid batteries. As an example, we eliminated platings containing hexavalent chrome that are typically used on locks, strikers, fasteners, brackets and other small metal parts throughout the vehicle.

To make significant changes happen as we did in redesigning the Sienna, we needed a strong governance structure within our North American companies to manage the process. As part of our overall strategy for SOCs, we formed a Toyota cross-affiliate working group that included managers from our design, manufacturing, sales, distribution and legislative analysis divisions within our companies. **This group surveys emerging chemical legislation to identify where alternatives will be needed. (Target 9.2)** Analyzing upcoming legislation is helpful, but a more proactive process is needed. To help this come about, Toyota — as one of a number of stakeholders — is engaging with government agencies to provide the insight necessary to create the next generation of managing SOCs in vehicles.

As a stakeholder engaging with government agencies, Toyota provides its view on the key elements of next-generation management for SOCs. Most importantly, Toyota believes that a common, stakeholder-supported next-generation management approach for SOCs should be adopted, rather than a patchwork of legislation and regulations across the country.

A positive step toward next-generation management of SOCs is U.S. EPA's Green Chemistry program. Program participants have developed 12 principles that will allow for a more proactive approach to reducing toxic chemicals. Five of the 12 principles are aligned with Toyota's Guiding Principles and Earth Charter:

- Preventing waste;
- Using renewable feedstock;
- Increasing energy efficiency;
- Designing chemicals and products to degrade after use; and
- Minimizing the potential for accidents.

The potential of the Green Chemistry program is influencing how various governmental bodies are approaching chemical management. The trend in promulgated and proposed legislation and regulations is to promote reductions in toxic chemicals through risk assessment, and alternatives analysis and development. In California, the legislative assembly passed AB 1879, the first comprehensive green chemistry legislation in the U.S. The bill establishes an expert panel (the Green Ribbon Science Panel) to advise the California Department of Toxic Substances Control (DTSC) on processes, policy development and implementation strategies. AB 1879 authorizes the DTSC to write the regulation for Green Chemistry. A first draft of DTSC's regulation has been circulated, and Toyota is actively engaged in commenting on this rule.

While engaging on all of these fronts, Toyota must ensure that we are conforming to our own global standard for SOCs. **Tracking and verification of SOCs in parts, components and accessories is accomplished via industry-wide and internal systems. (Target 9.3)** In Japan and North America, our researchers continue to investigate and develop alternatives for specific SOCs.

WASTE REDUCTION AND RECYCLING IN OUR OPERATIONS

Across all of our North American businesses, we make reducing waste and increasing recycling a high priority, and track our progress against measurable targets. We feature our manufacturing and sales and logistics operations here.

Manufacturing

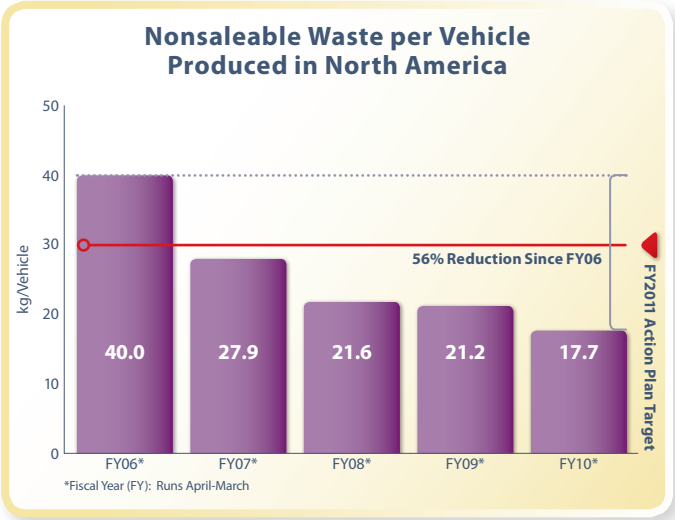
One of the best ways of reducing waste is by rethinking the old way of doing things. A good example of this involves Toyota's Technical Center, our assembly plants and one of our suppliers. Previously, our plants used an immersion (dip) process to apply corrosion inhibitor to our vehicles. In order to cover all the interior crevasses of the vehicle, an excessive amount of corrosion inhibitor was required. Our team members worked with a partner company, PPG, to develop an electronic process that uses less corrosion inhibitor to achieve the same level of coating. The electronic process has now been implemented in North America at all but one of our plants that have such processes. This creative approach garnered PPG an Automotive News PACE Award in 2009. PACE Awards are given for superior innovation, technological advancement and business performance among automotive suppliers.

Such creative thinking has helped both our production and nonproduction facilities reduce waste, and increase both recycling and source reduction.

Production Facilities

Our manufacturing operations in North America have continually evaluated our waste streams to look for alternatives to sending materials to landfill. **Our nonsaleable waste has been reduced to 17.7 kilograms (kg) per vehicle in FY2010, well below our target of 30 kg per vehicle by FY2011. (Target 7.1)** Our progress against this target is illustrated in Figure L. The following are examples of activities implemented by our production facilities (North American assembly plants) within the past year that have reduced nonsaleable waste.

FIGURE L



Team members at our Huntsville, Alabama, plant had reuse clearly in mind in FY2010. The plant was in the process of shutting down a production line for a type of engine that was no longer needed. Instead of viewing all materials from the old line as waste destined for disposal, Toyota's team members investigated the possibility of reusing or recycling these materials. Specifically, they found that 30,000 gallons (gals.) of coolant from the central systems on the old line were compatible with an existing line in another part of the building. They siphoned off the coolant into containers, transported it across the plant, and recharged the other equipment to the benefit of both the plant and the environment.

A number of our plants have stepped up their efforts to recycle materials such as plastics and cardboard. Toyota's Long Beach, California, plant has acquired a baler to recycle plastics, while Huntsville has installed a baler for plastic bottles and two balers for cardboard to increase the efficiency of recycling at the plant and reduce volume during transport. A program was instituted at our British Columbia, Canada, plant for separating plastics and cardboard, contracting with a new recycling vendor, acquiring balers to handle these materials, and launching a more aggressive office waste recycling effort. Together, these sites were able to recycle 69,441 lbs. of nonmetal materials.

At our plant in Buffalo, West Virginia, our team members send plastics to a local recycling company that turns the material into flying discs (similar to Frisbees®). During visits from local schools, the flying discs are given to children to provide a tangible example of how waste can be recycled into something useful and fun. We handed out over 1,500 flying discs in FY2010. The Buffalo plant also sends plastics to recycling to make guardrails for roadways.

Children visiting our facility in Buffalo, West Virginia, receive flying discs made from used packaging plastic from our operations. The flying discs serve as a tangible reminder of the importance of recycling.

Our plant in San Antonio, Texas, has implemented a *kaizen* to reduce the amount of waste from paint sludge. Previously, the paint sludge had high water content and was held in a roll-off container prior to transport and disposal. Team members replaced their existing roll-off container with a dewatering box that uses a filter frame and cloth liner, allowing the water to drain from the sludge into the bottom of the container. Periodically, team members pumped the water into a separate container and sent it to wastewater treatment. The new process reduces the weight of the sludge by 28 percent, and lowers overall disposal cost. In addition, the sludge is now suitable to be recycled as a base material for a local cement company.

Using a gravity filter to dewater paint sludge reduces the amount of waste sent off-site for treatment, and allows for the remaining sludge to be used as a recyclable material.

In Georgetown, Kentucky, our team members are committed to the ultimate goal of zero waste. One of their waste streams is compostable, and the plant processes about 1.5 tons of this waste daily. A portion of the compostable waste originates from the cafeteria, and it is used in a six acre garden located near the plant. For the fourth consecutive year, 80 percent of the vegetables grown in the garden were donated to a local food bank in Lexington, Kentucky, which provides food to low-income residents. The other 20 percent is used within the plant's own cafeteria. Also, the plant is moving toward using more organic materials in the cafeteria, including compostable plates and cups instead of Styrofoam™.

Although we have worked diligently to reduce waste, collectively, **our facilities in North America missed the target of 95 percent or greater reduction in waste to landfill from 1999 levels. (Target 7.2)**

Nonproduction Facilities

At our nonproduction facilities, we are focused on our target of zero hazardous waste to landfill and reducing nonhazardous waste toward zero landfill disposal. (Target 7.3)

Toyota's design facilities maintained zero landfill for hazardous and universal waste in FY2010. We also installed a new compactor at one of our buildings in Michigan in February 2010. The waste from that building is now sent to a local waste-to-energy facility and not to landfill. Also, we continue to recycle our modeling clay, a practice that has been conducted since 1973.

An increased effort to reduce waste at our manufacturing headquarters in Erlanger, Kentucky, has resulted in our maintaining zero waste to landfill for over three years. In addition, to improve environmental awareness and sustainable practices the training for newly hired team members has been revised and updated to include topics such as proper waste segregation and raw chemical approvals. In our cafeterias, we have implemented compostable utensils, to-go containers, and lids and straws. Further, in December 2009 we tested new touch-free compostable waste containers to encourage team members to recycle, and we sent 77,270 lbs of waste to our plant in Georgetown, Kentucky, to be composted As a result of these initiatives, we have increased the recycling of materials from 58 percent in FY2009 to 66 percent in FY2010.

Sales and Logistics

Toyota's sales and logistics division is responsible for transporting parts and vehicles across North America. Each day, our associates work to follow the Toyota Way principles of continuous improvement and eliminating waste. Thanks to a collective effort, we were able to recycle 18.8 million lbs. of material representing 89.4 percent of our waste, while sending 1.1 million lbs. to energy conversion in FY2010.

U.S. sales and logistics sites in Fremont, Long Beach, San Francisco, Torrance, and Ontario, California, won a Waste Reduction Awards Program (WRAP) award this past year. WRAP is administered by the California Integrated Waste Management Board, a state agency. The program recognizes California businesses and nonprofit organizations for their outstanding waste reduction efforts. In addition to the WRAP award, our logistics site in San Francisco received recertification as a "Green Business" for its efforts to reduce and reuse over 1 million lbs. of paper, cardboard, wood, plastic, and metal, as well as starting an associate "E-Waste" collection program.

We also look for ways to promote recycling in communities where we operate. Over the past few years, several Toyota locations have organized "E-Waste Roundups" on Earth Day for Toyota associates to bring electronic waste from home to be recycled. These roundups give the materials a second useful life, and also keep toxic materials out of landfills. Since 2007, these events have been combined with efforts to collect items for Goodwill Industries. In FY2010, over 7,700 lbs. of consumer electronics were collected at our U.S. sales headquarters in Torrance, California, along with 2,400 lbs. of clothing and household goods collected for Goodwill Industries. Over 4,000 lbs. of clothes, eyeglasses, batteries, cell phones and other electronic equipment were collected at our Canadian sales headquarters in Toronto, Ontario.

Sales

Toyota established a target to recycle 75 percent of the waste from our U.S. sales headquarters campus in Torrance, California, by FY2010. **In FY2010, we achieved a 71 percent recycle rate and therefore missed our target. (Target 7.4)** However, the campus was able to maintain zero waste to landfill during this time by utilizing a waste-to-energy provider. Toyota's Canadian sales headquarters set a target to divert 95 percent of its waste from landfill by the end of calendar year 2010. **We diverted 91.5 percent of our waste in 2009 and are still working toward our goal. (Target 7.5)**

Also at our Canadian sales headquarters, we have a target to reduce paper consumption by 25 percent per person by 2010 from a baseline year of 2004. **We achieved our target ahead of schedule, and have continued to reduce our paper consumption by 41 percent since 2004. (Target 7.6)** Overall, we have cut our paper consumption by 5.87 million sheets, or 68 percent, since 2001.

Our associates consider all types of waste streams for reduction efforts. One of our associates at our Canadian sales headquarters has taken a personal initiative to ensure that milk cartons are properly recycled and do not end up in a landfill. Each week he collects approximately 125 milk cartons and takes them either to the recycling depot or his own personal recycling container at home. Last year, he was able to collect over 6,500 cartons for recycling.

Parts Distribution

Our North American Parts Operations (NAPO) has a target to reduce nonhazardous waste sent to landfill by 33 percent by FY2011, from a FY2006 baseline of 13.5 lbs. per 1,000 pieces shipped. Since this target was exceeded in FY2008, NAPO revised the target in FY2009 to a disposal rate of 5.1 lbs. per 1,000 pieces shipped through FY2013. **In FY2010, NAPO exceeded the revised goal by 22 percent. (Target 7.7)**

NAPO has partnered with Dealer Operations to implement a *kaizen* to reduce the amount of parts returned to NAPO from dealerships and sent to landfill. NAPO revised the program logic, which previously allowed dealerships to determine if a vehicle part is waste or usable inventory. Through the *kaizen* process, NAPO was able to reduce the amount of parts disposed or recycled by 20 percent.

Our parts center in Hebron, Kentucky, generated approximately 250 lbs. of soft plastic per day, and prior to last year, all of this waste went to landfill. The parts center acquired a baler for the soft plastic material, identified a recycling vendor, and established a goal to reduce waste to landfill by 20 percent per month by March 2010. The parts center achieved their target and collected on average 6,900 lbs. of soft plastic for recycling each month. In addition to internal recycling, the parts center also uses reverse logistics on existing return truck hauls to receive shipments of plastic from our parts distribution centers in Boston, Baltimore, Cincinnati and Kansas City, ensuring that these materials are recycled as well. In all, the parts center and the distribution centers were able to recycle 69,627 lbs. of soft plastic in FY2010.

Parts Packaging

NAPO uses over 48,000 reusable metal shipping containers, also known as returnable containers or modules, in place of cardboard and wood pallets. The reusable containers are used among selected NAPO locations, vehicle distribution centers, dealers and suppliers. These containers are also increasingly used for shipments to Canada and Puerto Rico. The metal shipping containers are returned to the nearest parts center and continually reused.

In 2009, we expanded our returnable module programs to include a total of 24 suppliers. In addition, we implemented a new returnable container for our windshield packages, which has saved 450,000 lbs. of wood and 400,000 lbs. of corrugated cardboard. As a result of both of these efforts, we avoided the use of 30.4 million lbs. of wood and 14.6 million lbs. of corrugated cardboard.

Using returnable containers for our windshield packaging has saved over 850,000 lbs. of raw materials.

In addition to our increased use of returnable packaging, our parts distribution centers continue to identify new ways to reduce and reuse material needed for our operations. Our associates in Vancouver, Canada, save plastic bubble wrap and sheets of cardboard from packages they receive to reuse as bed liners for outbound shipments. In addition, our associates are also repurposing plastic load straps used for securing bumper covers to the skids.

Vehicle Distribution

Our vehicle distribution centers (VDCs) in the U.S. initially set a target of recycling 90 percent of their waste by FY2011. We achieved this target three years early, and continued to hold our recycling rate at this level through FY2010. (Target 7.8) In addition, our VDCs have a target disposal rate of 0.20 lbs. or less per vehicle processed.

Our vehicle distribution center in Long Beach, California, implemented a *kaizen* to decrease their impact on the environment by reducing waste disposal. The facility conducted a waste audit for each production shop to identify existing waste streams. Based on the audit, our associates developed countermeasures for sorting wastes; conducted a cost benefit analysis on the countermeasures; implemented new recycling strategies; and evaluated the results. Prior to the audit and implementation of this *kaizen*, the facility was recycling 88 percent of its waste. The facility is now achieving a 93 percent recycling rate. The distribution center also expects to recycle approximately 50 tons of scrap metal, creating a new saleable waste.

In Georgetown, Kentucky, our VDC has worked to improve its recycling program by installing recycling and compost stations in the mechanic and body shop areas. They also consolidated the general waste baskets with the recycling units forming segregation stations, which improve recycling capture.

Contributions to a Recycling-Based Society

Creating a recycling-based society is one of the action guidelines in the Toyota Earth Charter. In North America, we see our efforts to accomplish this as a key to being a good neighbor in the communities where we live and work. As we gain experience from implementing initiatives in our own facilities, we seek to share these best practices by teaching others how to create their own recycling programs, what can be recycled, and how to make better raw material choices. To further encourage recycling in our society, we have expanded our lineup of remanufactured parts, increased the availability of environmentally preferable paper, and encouraged the appropriate disposal of tires.

Remanufactured Parts

We continue to expand our lineup of remanufactured service parts in order to support customer needs. As these remanufactured parts require fewer resources than new parts, offering and using these parts decreases the overall impact on the environment. **In FY2010, we launched 28 remanufactured parts applications and therefore missed our target of 100 for this past year. (Target 17.1)** This was due to a lower number of model launches and a decrease in market demand. The FY2011 target is to introduce 50 new remanufactured parts.

The Toyota Wholesale Parts website highlights remanufactured parts, and provides information on ordering, benefits and features, core return policies, new programs, technical information and available resources.

For more information please visit **www.toyotapartsandservice.com**.

Environmentally Preferable Paper

We continue to maintain our environmentally preferable paper purchasing program. **Our U.S. sales headquarters campus uses fine paper with at least 10 percent post-consumer waste (PCW) content and office paper with at least 30 percent PCW content. (Target 17.2)** Most of the fine paper, used in our vehicle brochures, has 30 percent PCW content. In addition, 90 percent of the paper we purchased is certified by the Forest Stewardship Council (FSC), which seeks to ensure that the virgin content in the paper has been sourced from sustainably managed forests.

Dealers and Tires

In the U.S., Toyota uses the Tire Shark tire disposal program to encourage dealers to dispose of tires in a safe and environmentally appropriate way. (Target 17.3) Through the program, dealers can find authorized and licensed tire haulers to dispose of tires and ensure compliance with environmental requirements. These tires are recycled and converted to material for playgrounds and playing fields. The recycled tires can also be used as tire-derived aggregate and as an energy source. In FY2010, this program was suspended. Dealers already utilizing the Tire Shark disposal system continued using the service, but the service was not extended to new dealers. Dealers have begun to use local vendors for the environmental disposal of tires, as it is more economical.

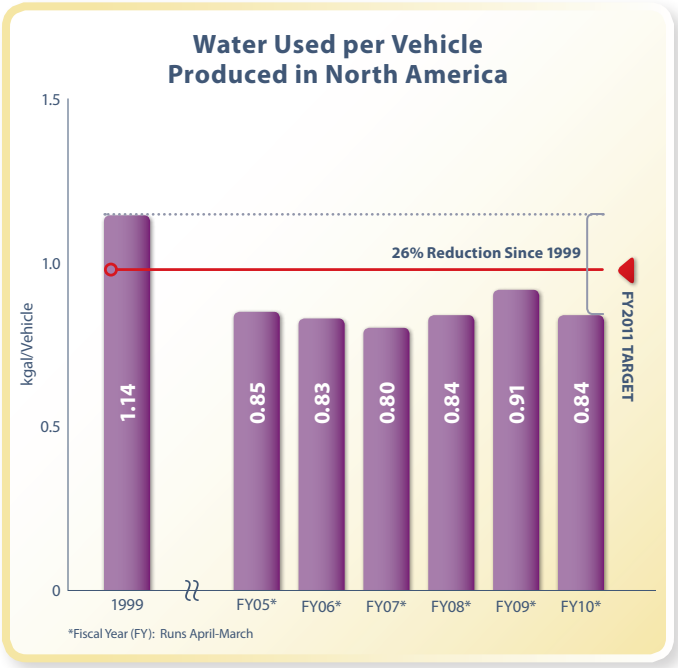
WATER CONSUMPTION IN OUR OPERATIONS

A growing number of experts agree that water shortages will occur more frequently in the next 10-20 years, particularly in the western portion of the U.S., unless we begin to take action now. At Toyota, we look for opportunities to conserve water across all of our operations in North America. Below we describe our progress against targets in this area.

Manufacturing

There are a number of areas in our manufacturing operations that require water use, and each represents a possibility for reducing consumption. **In FY2010, our water use per vehicle was 0.84 kilogallons per vehicle produced, and we are still achieving our overall target (please see Figure M). (Target 8.1)**

FIGURE M



Reusing Process Water

In FY2010, we established autonomous study groups to investigate ways to conserve water. One task undertaken by these groups was to map out process water requirements and process water discharge characteristics within our plants. This information enabled plants to identify opportunities for water reuse as well as benchmarking with similar facilities.

The study group at our plant in San Antonio, Texas, highlighted an opportunity to reduce process water used in a vehicle rinse process. As vehicles move through body painting, they are pretreated with phosphate then rinsed off. Utilizing experience from one of our facilities in Canada, Toyota team members in San Antonio automated phosphate flow volumes and installed a new spray ring, reducing the amount of phosphate needed for pretreatment, and ultimately the amount of water for the rinse. We estimated that the changes saved 64 gals. of water per minute, resulting in a 31.5 percent drop in water use over the last year.

Reusing condensate from roof top temperature and humidity control units in the cooling tower led to reduction in fresh water usage at our plant in San Antonio, Texas.

This plant also implemented a system to capture and reuse condensate from process and nonprocess temperature and humidity control units. Based on meters installed in February 2010, over 800,000 gals. of water were reused in this new system during a seven month period.

Reducing Process Water Usage

At our facility in Buffalo, West Virginia, a *kaizen* was implemented to reduce the amount of water removed from a circulating system (known as "blow-down") in order to keep the amount of impurities at an acceptable level in cooling towers and chillers. Cooling towers remove the heat from the process equipment, and chillers cool the building air. The water characteristics for mineral content in a chiller are less stringent than those for a cooling tower, so the plant was able to reuse the cooling tower blow-down in the chiller, reducing fresh water consumption by 7-10 percent.

At our facility in Long Beach, California, a new filtration system was installed at the end of a catalytic converter process line. The previous method involved drying process sludge, then sending it out for disposal as a hazardous waste. By filtering the process solution, our team members were able to recapture the liquid and reuse it. Fresh water consumption was reduced by 2,880 gals. and energy was saved by eliminating the drying process.

Team members at our plant in Cambridge, Ontario responded to the call from authorities urging businesses to reduce their water consumption due to extensive draw-down of the region's existing water source. Our team focused on reverse osmosis units at the plant that remove impurities in process water before discharging. The team assembled a second reverse osmosis unit from spare parts at the facility and installed it to recover 50 percent of water that was previously discharged. This water is reused at the facility, saving 52,834 gals. of water each day. In recognition of this initiative, our team members received an award from Waterloo Region representatives in February 2010.

Sales and Logistics

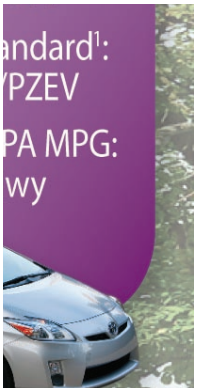
While water consumption is not the most significant environmental impact from our sales and logistics operations, we believe there are still benefits from reducing our consumption. **In FY2008, we completed our evaluation of water consumption at all U.S. sales offices and logistics sites. (Target 8.2a)** We then set a target to maintain our water consumption at 2008 levels, and to increase the use of recycled water. **In FY2010 we achieved this target by reducing our total water consumption by 487,000 gals. (Target 8.2b)**

Through water conservation efforts such as high efficiency water fixtures and reduced landscape irrigation, our sales and logistics facilities reduced potable water consumption by 25 million gals. in FY2010, or 22 percent from the previous year. Furthermore, we have increased the use of recycled water to 85 million gals., an 84 percent increase from last year. Most notably, our site in Ontario, California and our Inland Empire Training Center in Rancho Cucamonga, California use recycled water for landscape irrigation.

Our Canadian facilities have exceeded the target to reduce water consumption by 10 percent by 2010, from a baseline of 2004. (Target 8.3) Irrigation of facility grounds is the most significant contributor to water consumption. We continued to use moisture sensors, reconfigured watering zones, and used more efficient sprinkler heads to reduce our water consumption. This year we exceeded our original overall target by 39 percent. We continue to look for opportunities to improve usage monitoring and further reduce our usage, so that we can maintain our current consumption level.

TOYOTA | air quality

Changes to our painting processes have helped us reduce the number of times we need to purge and clean our paint lines, lower total solvent usage and ultimately surpass our VOC emissions reduction target.



"Our long-term goal is to achieve zero emissions from both our vehicles and manufacturing processes by improving our practices and technologies at every step."

– Kevin Butt, General Manager, Chief Environmental Officer
Toyota Motor Engineering & Manufacturing North America, Inc.

AIR QUALITY EAP TARGETS

- 9.4 ○ Develop materials to reduce VOC levels
- 10.1 ● Meet all applicable vehicle emissions standards
- 10.2 ○ Maintain leading level in-use vehicle emissions compliance
- 10.3 ○ Promote the development of ultra low emissions technologies and introduce the lowest emitting vehicles
- 11.1 ● Reduce body painting VOCs to an average of 14.0 g/m²
- 11.2 ● Determine a VOC baseline and set plant targets for vehicle plastics in FY2007

AIR QUALITY DEGRADATION IS CAUSED by many factors including the use of gasoline combustion engines. Although advances in technology have made combustion engines very efficient, they still emit particulate matter, carbon dioxide, nitrogen oxides and other pollutants. Some of these same pollutants, along with volatile organic compounds (VOCs), are also emitted from manufacturing processes. Together, these pollutants react with sunlight to form smog. A primary component of smog is ozone, which is helpful in the stratosphere to block harmful UV rays, but degrades air quality when formed at ground level. These impacts are particularly pronounced in urban areas with large numbers of vehicles, industrial activity, and sunny, warm climatic conditions.

As impacts to air quality arise from both manufacturing processes and the use of vehicles, Toyota has committed to continuously improve our products and the way in which we make them. Our performance against targets for vehicle tailpipe emissions and VOC emissions are described in this chapter.

TAILPIPE EMISSIONS

Generally, government officials and auto manufacturers discuss vehicle tailpipe emission levels in the context of certification levels. In 2010, California required a manufacturer's fleet average to meet a NMOG standard of 0.035 grams per mile (gpm) for cars, and 0.043 for trucks. The federal programs in both the U.S. and Canada require a manufacturer's fleet average to meet a Tier 2 NO_x standard of 0.07 gpm. A certification level is then assigned to each vehicle, depending on its emission levels. The certification levels in California are referred to as LEV (Low Emissions Vehicle), ULEV (Ultra Low Emissions Vehicle), SULEV (Super Ultra Low Emissions Vehicle), ZEV (Zero Emissions Vehicle), and AT-PZEV (Advanced Technology Partial Zero Emissions Vehicle). The federal programs refer to each incremental level as a "Bin" — numbering one through eight.

In addition to existing standards, California proposed a regulation in February 2010 for more stringent tailpipe emission standards (known as LEV III). When finalized, these regulations would require SULEV fleet average emissions performance from new passenger vehicles, phased in from model year 2014 to model year 2022.

Toyota annually complies with the state of California, U.S. and Canadian federal vehicle emission programs, and we have met the standards for the 2010 model year. (Target 10.1) We have consistently certified more vehicles than these programs mandate. All Toyota, Lexus and Scion passenger cars currently sold in North America, except for the Lexus SC 430, are rated ULEV or better. Specifically for vehicles offered in the 2010 model year, 41 percent of all Toyota, Lexus and Scion cars and 15 percent of trucks are certified to SULEV or better. Our SULEV vehicles include Toyota's Prius, the Prius Plug-in Hybrid, Camry PZEV, Camry Hybrid, Highlander Hybrid, and Lexus' RX 450h, LS 600h, GS 450h and HS 250h. In addition, Toyota's Industrial Equipment Division 8-series forklift truck, sold in Canada, voluntarily meets the 2010 California ARB standards for tailpipe emissions, and two of Toyota's vehicles — the Prius and the Yaris — are included in the list of "Greenest Vehicles of 2010" by the American Council for an Energy-Efficient Economy (please see Figure N.)

FIGURE N

[1] A listing with two emission standards (e.g., Tier 2, Bin 3/PZEV) denotes a single vehicle carrying both a federal and California emission certification. Green Scores for such listings reflect the cleaner of the two certifications. 2010 EPA Ratings. Actual mileage will vary. All vehicles are 2010 Model Year.

Finally, it is important to note that as a complimentary step to achieving reductions in vehicle emissions, there are state and federal efforts in place to reduce pollutants in gasoline. California set specifications for sulfur and other constituents under its reformulated gasoline (CaRFG) program in 1996, and U.S. EPA implements a parallel program at the federal level. Continued focus on gasoline formulation will assist in improving air quality along with tailpipe emission standards.

In-use Compliance

Toyota has a solid track record in the automobile industry of continuous in-use compliance. Our cars contribute to improving air quality by complying with emission requirements for the useful life of the vehicle, which for some models is up to 150,000 miles. Staff from both U.S. EPA and California ARB evaluated Toyota's conduct of these government mandated in-use testing programs, and provided both positive feedback and approval. **We tested 200 vehicles in FY2010, for a total of over 1,200 vehicles since 2000, and Toyota's emission compliance rate is still a leader among major industry manufacturers. (Target 10.2)**

Ultra Low Emission Technologies

Toyota has achieved high fuel efficiency and cleaner exhaust emissions by introducing leading-edge design and electronic control technologies. (Target 10.3) We do this in parallel with base technologies of catalytic converters and electronic fuel injection, oxygen and air/fuel sensors and dual-overhead cams to achieve cleaner vehicle emissions.

VOC EMISSIONS IN MANUFACTURING

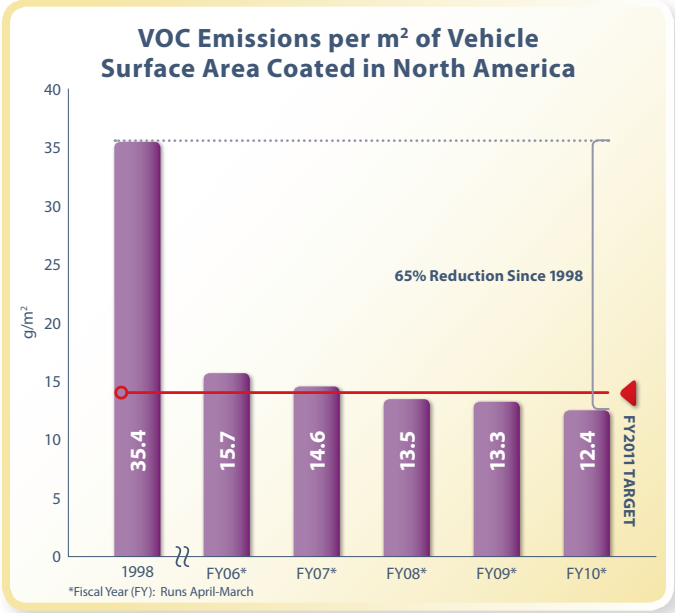
Automobile manufacturing involves a number of inputs, activities and processes to create a consumer-ready vehicle. Some of these activities and processes release pollutants to the atmosphere, many of which are regulated. One group of pollutants emitted from our plants is VOCs. Within Toyota's facilities, painting operations generate the majority of our VOC emissions.

VOCs can also be emitted from materials in the vehicle interior after manufacturing, commonly recognized as the "new car smell." Plastics, leathers, and textiles installed with glues and sealants off-gas, and this effect can be exacerbated by heat. We discuss our efforts to reduce both VOCs during manufacturing and in vehicle cabins, below.

VOCs From Painting Vehicles

One of our goals is to implement initiatives to track and reduce VOC emissions from our painting operations. We measure VOC emissions from vehicle painting operations in grams of VOCs emitted per square meter (g/m^2) of vehicle surface area coated. **Our five-year target was to achieve a corporate average of 14.0 g/m^2 by FY2011, and we surpassed this target in FY2008. (Target 11.1) We continue to achieve reduced levels of VOC emissions, and in FY2010 averaged 12.4 g/m^2 (please see Figure O below).**

FIGURE O



All of Toyota's North American plants with body painting operations participate in a VOC working group, led by our manufacturing headquarters in Erlanger, Kentucky. The group focuses on sharing best practices and *kaizens* that reduce VOC emissions. The following are examples of projects from this past year that resulted in reduced VOC emissions from vehicle painting:

- At our plant in San Antonio, Texas, several *kaizens* were implemented to reduce VOC emissions by almost 1.3 g/m^2:
  - Clear coat color blocking. Our vehicle painting process has now been reprogrammed so that the required combination of a supplier's nonsolid paint and its own clear coat are run in blocks of vehicles. This reduces the number of times that robots have to purge and clean their lines between paints from different suppliers.
  - Cartridge machine solvent reduction. Team members found that they could reduce the amount of solvent the cartridge machines use to purge and clean the paint spray applicators without issue.

  - Primer pre-spray reduction. Cars going through the painting process receive primers of various colors. When a robot needs to switch from one primer color to another, it still has leftover primer in its lines from the previous car that was sprayed. Instead of expelling the previous color into a waste collection system before the next vehicle comes along, that primer could be used on the next body in areas that are covered by parts, reducing the overall amount of material sprayed.
- At our plant in Georgetown, Kentucky, the paint shop team members worked to optimize the collection of purge solvent used in robot paint lines and in the paint booth to reduce VOCs. They also reduced the amount of purge solvent used by lowering the flow rate of the solvent in the robot paint lines, and the total time that the purge solvent is sprayed through the lines.

Through sharing and discussing best practices and *kaizens*, Toyota team members at plants with painting operations are making measurable progress in reducing VOCs.

VOCs From Painting Vehicle Plastics and Wheels

VOC performance is tracked and reported on a monthly basis by each of our plastic paint shops in North America. Currently, we do not have an overall North American VOC target for painting vehicle plastics. However, we have set a VOC target **for the five plants with shops that paint exterior plastic parts such as bumpers. (Target 11.2)** These plants are tracking their performance internally against these targets.

At our plant in British Columbia, Canada, our team members have conducted several innovative projects that reduce VOCs:

- Wheel edge coat paint reduction. In FY2010, we were able to reduce our paint consumption by 22 percent per wheel by removing edge coat paint from wheels that did not require it.
- Biofilter technology. Instead of installing a regenerative thermal oxidizer (RTO) to combust VOCs emitted from the painting operation, the site installed a biofilter that uses microorganisms to consume VOCs. Unlike an RTO, the biofilter does not run on fossil fuels, and has continually seen efficiency improvements since its installation. In CY2009, the biofilter destroyed over 13 tons of VOCs from the paint booths.

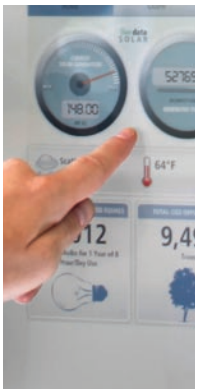
Reducing Cabin VOCs

Auto manufacturers in North America are working toward one global standard to test emissions of VOCs in vehicle cabins and at the component level. Currently, two voluntary standards exist: one from the Japan Automobile Manufacturers Association (JAMA), and a draft from the International Organization for Standardization (ISO). The JAMA standard was developed by modifying what are known as "sick home" indoor air quality standards to apply to vehicle cabin air quality. Toyota has made a voluntary commitment to meet the JAMA standard by 2011. The redesigned model year 2011 Sienna already conforms to this standard.

In North America, our research and development staff is also working on low-VOC and reduced odor technologies. A newly developed odor prediction method is the water extraction smell test. The test predicts the smell of parts in a severe vehicle cabin condition by using a high temperature. Toyota staff worked with suppliers to develop ways to reduce toluene emissions from tapes used as a secondary attachment method for several interior parts. They developed new tapes that reduce toluene emissions by more than 90 percent. Examples of these applications are ethylene propylene polymer seals used under the instrument panel and felt tape used for noise, vibration and harshness reduction. The tape is now being used in some North American models. **Through these and similar efforts, Toyota is making steady progress to reduce VOC levels in vehicle cabins. (Target 9.4)**

TOYOTA | environmental management

Kendall Toyota of Eugene, Oregon, is the world's first certified LEED Platinum dealership, with environmentally-friendly features such as recycled steel tanks that store collected rain water. Pictured from the left are David McKinney, Toyota Motor Sales, David Shears, Dealer Owner, and Dean Pape, Head of LEED Initiatives.



"Research shows that consumers are becoming aware of businesses in their community that are taking a leadership role in addressing environmental issues."

– Christopher Reynolds, Group Vice President and General Counsel
Toyota Motor Sales, U.S.A., Inc.

ENVIRONMENTAL MANAGEMENT EAP TARGETS

- 12.1 S Introduce Eco-VAS on all new or redesigned vehicle models
- 13.1 ○ Minimize environmental risks and achieve leading levels of environmental performance
- 13.2 ● Maintain ISO 14001 certification at U.S. vehicle and parts logistics facilities
- 13.3 ● Achieve ISO 14001 registration at two remaining Canadian logistics facilities by the end of 2007
- 13.4 ● Zero annual notices of violations and complaints
- 13.5 ○ Consider LEED certification for new buildings/remodeling
- 13.6 ○ Develop eco-plant plans for all new production facilities
- 14.1 ● Update Toyota environmental requirements for U.S. plant suppliers
- 14.2 ● Implement U.S. Dealer Environmental Training Program
- 14.3 ● Achieve LEED certification at eight dealerships and a Certified Service Center by FY2010

TOYOTA IS COMMITTED to reducing environmental impacts from our operations, the buildings we occupy, and from the activities of our business partners. Our environmental management approach employs leading systems and standards to address all three of these areas.

We have established Environmental Management Systems (EMSs) at our facilities to support compliance, systematically identify areas for improvement, and enable performance measurement of goals and targets in our EAP. We also consider standards from the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) program to make our training centers, office space and headquarters campuses more sustainable. Further, we develop "Eco-Plant Plans" for new, or expansions of existing assembly plants in North America. We also promote sustainable building practices, provide guidance and conduct training for our suppliers and dealers to support their environmental management efforts.

Our performance against targets for EMSs, sustainable buildings and our work with suppliers and dealers is described in this chapter.

ENVIRONMENTAL MANAGEMENT SYSTEMS

All of Toyota's assembly plants and logistics sites, and even some of our office complexes have an EMS certified to the international standard ISO 14001. These EMSs are an essential part of our overall effort to maintain compliance with all applicable federal, state, provincial, territorial and local requirements, as well as our own internal requirements.

To achieve leading levels of environmental performance, we fully implement our EMSs, ensuring our employees understand the overall framework and the environmental issues and legal requirements the system covers. (Target 13.1) As a result, a number of our locations received awards last year in recognition of their environmental excellence.

Our manufacturing plant in Princeton, Indiana, received its sixth Governor's Award for Environmental Excellence and the Evansville Chamber of Commerce Award for pollution prevention and source reduction based on carbon footprint reduction. The plant assessed the highest energy-consuming systems, identified opportunities to reduce energy consumption, improve performance, and minimized environmental impacts and costs. In addition, independent energy audits were carried out to assess the efficiency of the plant's electricity and natural gas usage. The information gained from these audits allowed the plant to establish a formal Energy Reduction Program.

Toyota has further developed the WasteDox program, an online management system designed to assist our logistics sites and affiliates with waste stream handling, such as hazardous waste profiling, Resource Conservation and Recovery Act (RCRA) and non-RCRA services, and recyclable commodity management.

Two of Toyota's logistics sites attained ISO 14001 recertification in the past year, and all of our other participating facilities passed their internal surveillance audits for their EMSs. This allowed us to maintain ISO 14001 certification/registration at all of our North American assembly plants and logistics sites. (Targets 13.2 and 13.3)

Compliance

Through diligence and hard work, our North American logistics sites achieved their twelfth consecutive year with no hazardous materials or dangerous goods violations, and their eighth year with no monetary fines.

In regard to our assembly plants, one received an agreed order for an air permitting issue in July 2009, and we are complying with that order. **Toyota received no formal complaints or Notices of Violations (NOVs) during FY2010. (Target 13.4)**

A number of companies, including Toyota, have been named as potentially responsible parties (PRPs) at the Portland Harbor Superfund Site in Portland, Oregon. The remediation of the Toyota Plaza site in Torrance, California, was finalized in FY2010.

Sustainable Buildings

Part of our overall sustainability effort is to look at our assembly plants, training centers, offices and headquarters campuses for opportunities to reduce our environmental footprint. **We consider LEED certification guidelines for new construction and when we remodel our facilities. (Target 13.5)** LEED is a point-based program administered by the USGBC that sets standards and certifies "green" buildings. These standards include aspects such as energy consumption, water consumption and the incorporation of low-impact building materials. We have a number of sites that have been through this rigorous program, and are now LEED certified. A few of our FY2010 accomplishments in this area are described below.

Our training facility in Rancho Cucamonga, California, is certified LEED Gold for Commercial Interiors. Aspects such as building energy efficiency, use of renewable energy, and recycled construction waste led to this designation.

Our Inland Empire Training Center in Rancho Cucamonga, California, was awarded LEED Commercial Interiors (CI) Gold certification in March 2010. This Training Center was designed to serve as a satellite location to the Toyota Los Angeles Region to provide professional training for advancing technology service technicians from local dealerships. Examples of environmental and energy efficiency aspects of the Inland Empire Training Center include: priority parking for carpool and low emissions vehicles; reflective roofing material that reduces HVAC energy use and minimizes the heat island effect; 90 percent of eligible equipment is U.S. EPA Energy Star rated; more than 95 percent of all construction waste was sorted, recycled and diverted from landfill while many original building components were reused; and 100 percent of the electricity for the first two years of operation is derived from renewable sources.

Toyota's Phoenix Training Center in Arizona was awarded LEED CI Silver certification in September 2009. Through Toyota's Process Green initiative, the Phoenix Training Center incorporated sustainable building design features and developed innovative environmental practices to achieve the LEED CI Silver certification. Similar to the Inland Empire Training Center, this facility uses highly reflective roofing materials to reduce HVAC energy use and minimize the heat island effect. Other practices include the utilization of green cleaning products certified by Green Seal® and purchased in bulk to reduce wasteful packaging. The center has also committed to purchasing 100 percent of the electricity from renewable resources to cover the first two years of operations.

Besides our training centers, Toyota has engaged in sustainable building practices at other locations. In March 2010, Toyota Technical Center's (TTC) York Township, Michigan campus was recognized by the USGBC with a Gold LEED certification for its commitment to environmental stewardship. This campus joins Toyota Motor Sales' South Campus in Torrance, California, that is LEED Gold certified, and Toyota's Washington, DC, office that is LEED CI Silver certified.

The New York City office of Toyota Motor North America, Inc. committed to renovate an existing office space to LEED CI Gold level, and our USGBC certification is currently pending. A number of sustainable building design features and innovative waste minimization practices were incorporated into this project. Achievements included:

- Reducing water consumption by 36 percent in the existing facility;
- Lighting power was reduced by 17 percent by installing more energy efficient lighting fixtures;
- Cooling demands were minimized by reducing peak loads by 30 percent. More than 90 percent of equipment in the office space is U.S. EPA Energy Star rated;
- Launching a program to recycle glass, cardboard, metal and paper;
- Diverting more than 75 percent of construction waste from landfills;
- Reducing transport-related greenhouse gas emissions by using materials within 500 miles of the project site;
- Sourcing materials with a high percentage of recycled content;
- Using materials, paints, coatings, carpet and system furniture that emit lower levels of Volatile Organic Compounds (VOCs) and other contaminants; and
- Implementing a green housekeeping program.

Toyota's New York office conformed to LEED Gold standards. Designers used materials, paints, coatings, carpet and furniture that emit lower levels of VOCs and other contaminants.

Aside from LEED certification, we have a number of initiatives that are aimed at shrinking the environmental footprint of our buildings. Our Lexus Training Center in Dallas, Texas, has transitioned from purchasing electricity from the grid to purchasing 100 percent renewable wind power. This green power effort has offset the center's annual electricity consumption, which typically totals 188,200 kilowatt-hours. In March 2010, Toyota Motor North America, Inc. teamed with Sterling Planet, a leading retail renewable energy provider, to offset 896,704 kilowatt-hours of conventional electricity over two years with Green-e® certified Renewable Energy Certificates (RECs). These RECs come from nationwide wind resources and will be effective during the two-year term, from March 1, 2010, through February 29, 2012.

Eco-Plant Planning

Prior to beginning construction on a new assembly plant, or a major expansion of an existing plant, Toyota develops an "Eco-Plant Plan" that helps us use best available technology to minimize the environmental impacts of our operations. Each plan includes operational performance targets for energy, emissions of VOCs, waste generation and water consumption. These plans consider best practices and are tailored to local conditions. After the plans have been developed and approved, we conduct audits during the construction phase of the plant and afterward to verify that the plan has been followed.

Over the past few years we have implemented existing plans which has helped to reduce our overall environmental footprint. (Target 13.6) Recently, the Eco-Plant Plan for our facility in Blue Springs, Mississippi, was approved and finalized.

ENVIRONMENTAL MANAGEMENT WITH OUR BUSINESS PARTNERS

We recognize that our environmental footprint extends up and down our value chain — not just within our own operations. This is why we work closely with our business partners, including suppliers and dealers, on environmental management issues.

Suppliers

Toyota understands that clear guidance is a helpful tool for managing environmental issues. Our Green Supplier Guidelines, initially released in 2000, provide useful technical information on a wide variety of environmental issues. **Per our most recent five-year action plan, we updated these Guidelines in January 2007. (Target 14.1)**

The Guidelines emphasize that we expect our suppliers to comply with applicable laws and regulations, and conform to social norms. They also recommend that suppliers go beyond legal and social requirements, undertaking activities that support Toyota's environmental goals. Since 2007, we have been working to ensure that the Guidelines are available to new suppliers, and have taken steps to understand how our suppliers are reducing their environmental footprint. For example, in FY2010, NAPO and TLS added the Green Supplier Guidelines to supplier contracts and are requiring information from third-party carriers regarding environmental practices, such as measures to reduce fossil fuels. Typically these measures include optimizing idle time and instituting fuel-saving driving practices.

Dealership Support

In 2009, there were approximately 1,800 Toyota, Lexus and Scion dealerships in the U.S., Canada and Mexico. Often our dealers' biggest environmental challenge is to understand and comply with all applicable regulations and standards. **Toyota has provided dealers with resources and training programs to help them comprehensively manage their environmental footprint including applicable requirements. (Target 14.2)**

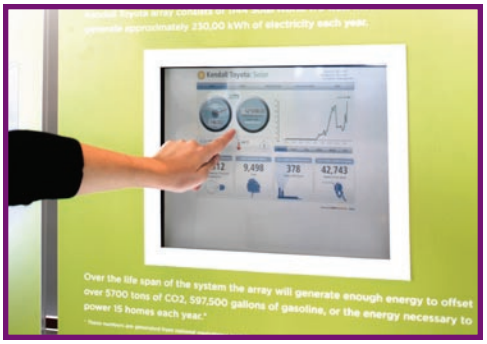
An example of this is our C.L.E.A.N. (Community Leadership Environmental Assistance Network) Dealer website at **www.cleandealer.com**. We have continued to expand this website and, in FY2010, we added a portal to support dealer questions about packaging, handling and shipping hybrid vehicle batteries for recycling. Since last year, the C.L.E.A.N. Dealer website activity has increased by nearly 60 percent. We also launched a two article AWARE Newsletter series to promote energy efficiency, which also discussed federal and local rebates available to dealerships who take the initiative to "green" their facility.

Since its launch in October 2008, the Toyota Recycling and Environmental Awareness (TREA) program, an on-line voluntary nonhazardous recycling program for U.S. dealers, has seen over 24,000 hits. In addition, in 2009, 81 percent of U.S. Toyota dealerships reported participating in a recycling program that included at least one of the following: cardboard, office paper, soft plastics, scrap metal, or used beverage containers. We are continuing to expand the TREA website to incorporate other sustainable practices for CY2011.

Building Green Dealerships

We work with Toyota and Lexus dealerships to promote green building practices. Toyota's Image USA II program has over 30 LEED Projects in different stages of development: complete and certified, under construction, in the design and permitting phase, or in the queue for potential LEED upgrades.

We met our goal of obtaining LEED certification at eight dealerships and a certified service center by FY2010. (Target 14.3) Six Toyota dealerships have completed construction and are LEED certified. The Kendall Toyota dealership in Eugene, Oregon, achieved LEED Platinum certification. This is the first auto dealer in history to achieve platinum certification. Lexus of Las Vegas in Las Vegas, Nevada, achieved LEED Existing Building (EB) Gold certification this year; while Lexus of St. Louis, Missouri, is on track to receive LEED Silver certification. Two additional Lexus dealerships are in the design and development phase and are on target for LEED certification. In addition, Lexus of Henderson in Henderson, Nevada, is in the construction phase of a new dealership facility and is on track for LEED Gold certification.



An interactive display at the Kendall Toyota dealership illustrates energy captured from photovoltaics on the roof, which was part of the LEED initiatives.

The Kendall Toyota dealership in Eugene, Oregon, was awarded LEED New Construction (NC) Platinum certification, the highest level of certification, in January 2010 by the USGBC, making it the only LEED Platinum dealership in the world. Examples of environmental and energy efficiency efforts that earned Kendall Toyota the Platinum certification include the following:

- Reducing project construction waste by 75 percent through waste management and on-site material used;
- Capturing and recycling 60 percent of the rain water from the roof and directing it into cisterns, reducing the requirement of city potable water by 200,000 gallons;
- Installing an on-site storm-water treatment system that spares the city eight million gallons of water to treat each year;
- Covering most of the roof with photovoltaic panels, producing over 40 percent of the building's energy needs;
- Incorporating native plants that consume less water into the landscaping and implementing an irrigation system that works directly with the local weather systems, reducing water needs by more than 50 percent; and
- Using postconsumer recycled products for 10-20 percent of the building's finishes, including the tile flooring, rubber flooring, carpet, wood ceiling panels and countertops.

Sewell Lexus of Fort Worth, Texas was awarded LEED Gold certification by the USGBC in June 2009. This facility is the first Lexus sales facility to earn LEED certification. Some highlights of the building's environmental and energy efficient features include: lavatory fixtures that reduce the use of potable water by 30%, storm water control system to collect rain water in cisterns that is re-used on the water-efficient landscaping (uses 50% less water), and a waste diversion program that recycles approximately 90% of all building waste.

Four additional Toyota dealerships are on track for LEED certification. Grossinger City Toyota (Chicago), James Toyota (Flemington, NJ), Jerry Durant Toyota (Granbury, TX), and Toyota of El Cajon (California) are tracking for Silver certification. Toyota of El Cajon also has a Certified Center that is tracking for Gold certification. All of these facilities used an interior Eco Palette provided by Toyota that included specifications for no VOC (Volatile Organic Chemicals) paints, sealants, and adhesives rather than the USGBC specification of low VOC elements. This allowed the dealers to earn bonus points from the USGBC for using this specification and Toyota was able to provide it to the dealers at no additional cost from their standard, comparable palette.

The Lexus of St. Louis dealership in St. Louis, Missouri, applied for LEED certification from the USGBC and is on track to achieve Silver. Examples of environmental and energy efficiency efforts undertaken at Lexus of St. Louis include minimizing the roof's heat island effect, incorporating low emissions vehicle parking spaces, installing water efficient landscaping and reducing water use with low flow fixtures throughout the building. In addition, the car wash at the St. Louis dealership includes a water reclamation system.

Lexus of Henderson is building an eco-conscious new and used car dealership in the southeast valley of Las Vegas, Nevada. The 35 million dollar development is on track to receive LEED Gold certification from the USGBC, making it the nation's first automotive dealership to be built from the ground-up to achieve this distinction.

Stratford Toyota is a leading edge showplace of energy and environmental design, and is the first LEED-certified building in the city of Stratford, Ontario.

LEED certification efforts are not limited to our U.S. partners. Stratford Toyota in Stratford, Ontario, achieved LEED Gold certification in June 2010, making it both the highest rated LEED automotive dealership and the first LEED Gold dealership in Canada. Its construction used over 28 percent recycled materials and 97 percent of the construction waste was diverted from landfills. The building also features energy-efficient lighting, in-floor heating, and highly insulated panels to reduce energy by 37 percent, compared to a typical building. A key feature, a storm-water cistern, reduces potable city water use by more than 99 percent.

TOYOTA

cooperation with society

TogetherGreen Fellow Michael Forrester teaches young visitors about water quality in the Scioto River in Columbus, Ohio. For his Fellowship project, Michael created a 1,000 square foot interactive exhibit on watershed protection at the Columbus Center for Science and Industry (COSI).

"We strive to build strong relationships with many individuals and organizations, and promote environmental education and stewardship in our communities."

– Dian Ogilvie, Senior Vice President & Secretary
Toyota Motor North America, Inc.

COOPERATION WITH SOCIETY EAP TARGETS

15.1 ○ Strengthen Toyota's North American philanthropy efforts toward environmental/sustainable development projects and partnerships that contribute to development of new technologies, education and the preservation of biodiversity

15.2 ● Toyota Canada to maintain 25% of total annual philanthropic contributions directed toward environmentally focused programs

15.3 ○ Promote basic environmental research aimed at CO_2 emissions reductions

16.1 ○ Increase the transparency of Toyota's environmental plans, activities and performance by strengthening environmental communication with government agencies, eNGOs, business partners and local communities

TOYOTA'S GUIDING PRINCIPLES put our communities and the environment at the heart of what we do. We seek sustainable growth that is in harmony with the environment and that strengthens the communities in which we live and work.

This chapter describes our environmental philanthropy, education and research support, and how we communicate our environmental plans and activities to our stakeholders.

CONTRIBUTIONS TO SUSTAINABLE DEVELOPMENT EFFORTS

Toyota's corporate environmental philanthropy promotes stewardship, education and research, all of which are vital to sustainable development. **We partner with nonprofit and community organizations, schools, universities and other businesses to support programs with long-term, sustainable results. (Target 15.1)** Our contributions take many forms, including vehicle donations, grants, scholarships, and volunteer time. **In Canada, we met our commitment this past year to contribute more than 25 percent of our philanthropy to environmental programs. (Target 15.2)**

Environmental Stewardship

We aim to protect, preserve and improve the natural environment, and establish systems by which people in the community will carry this work forward to future generations. We continue to partner with the following organizations through conservation funding and volunteerism.

National Audubon Society and *TogetherGreen*™

In cooperation with the National Audubon Society, Toyota launched the *TogetherGreen* program to foster conservation innovation, leadership and volunteerism. Through a five year, $20 million grant, *TogetherGreen* funding is allocated across three major components: annual Innovation Grants awarded to over 40 projects that have innovative conservation impact; 40 Fellows selected every year to receive training and lead their own local community project; and hundreds of *TogetherGreen* Volunteer Days to encourage local communities and Toyota employees to participate in conservation activities. To date, *TogetherGreen* has engaged 72,400 participants, including Toyota employees, in over 275,000 hours of habitat, water and energy conservation efforts across the U.S.

A few of the Innovation Grants in the past year included:

- Engaging Houston residents in restoring native habitat on Texas' hurricane-ravaged Bolivar Peninsula;
- Partnering with The Nature Conservancy in New York City to offer conservation internships to inner city teens;
- Inspiring Arizona home and business owners to install renewable energy systems;
- Transforming land neighboring a wastewater treatment plant into a wildlife park in Idaho;
- Partnering with local high schools to put Los Angeles teens on the front line of coastal sage scrub restoration; and
- Launching a program with Pennsylvania Senior Corps to appoint aging Americans as volunteer citizen scientists.

In November 2009, Toyota announced the second round of *TogetherGreen* Fellows. The 40 recipients include professors, Ph.D. candidates, ecologists, an artist, professional conservation practitioners, and community organization members. These Fellows will help engage thousands of people to protect habitat, wildlife and water, and save energy in 20 states and 37 cities.

During *TogetherGreen* Volunteer Days held over the past year, thousands of Audubon and Toyota employees joined countless other volunteers and participants to donate their time and energy to conduct restoration projects, park and beach cleanups, tree planting and wildlife monitoring and inventorying.

As part of *TogetherGreen* Volunteer Days, Toyota associates and their families revitalized the grounds at historic Fort Greene Park in Brooklyn, New York, for the enjoyment of all visitors.

TogetherGreen also inspires children through Pennies for the Planet, aimed at supporting critical conservation projects. In 2009, children collected 2,609,100 pennies for three projects: *Save Puffins*, bringing colorful seabirds back to an island off coastal Maine; *Protect an Ancient Swamp Forest*, preserving a unique area in South Carolina; and *Save Sagebrush Habitat*, protecting a vast sagebrush habitat in Wyoming.

For more information please visit **www.togethergreen.org**.

MillionTreesNYC

Toyota continues to support conservation initiatives in urban settings, including MillionTreesNYC, a public-private partnership to plant one million trees in New York City by 2017. Since the launch in October 2007, over 370,000 trees have been planted with benefits such as reduced storm water runoff, flooding, and erosion resulting in cleaner water; lower summer air temperatures and, therefore, lower energy costs; and provide climate change mitigation.

Energy Conservation Partnerships With Local Government

Two years ago, our assembly plant in Georgetown, Kentucky, created an Energy Conservation Partnership with the Scott County government. The goal of the program is to create an energy management system, highlighting cost and environmental benefits. Toyota team members volunteered their time to assist in conducting assessments, identifying energy reduction activities, and implementing projects to achieve environmental benefits.

After performing an assessment of the Scott County Courthouse's energy use and management practices, Toyota's team members provided recommendations for improvements. The courthouse opted to implement a lighting retrofit and upgrade its boiler. To date, the lighting retrofit has resulted in a 36.5 percent reduction in energy usage and $10,134 in savings, while the new boiler resulted in a 72.1 percent reduction in natural gas usage and $21,842 in savings for the county.

Arbor Day

Launched in 2008 by the Arbor Day Foundation and Toyota, *Tree Campus USA* recognizes colleges and universities that commit to practicing five sustainability standards on their campuses. To date, 74 distinguished universities have received the official *Tree Campus USA* designation, including the University of Michigan, University of Texas, UCLA, Duke, Cornell, and Virginia Tech.

For more information please visit **www.arbordaynow.org**.

Toyota Evergreen Learning Grounds Program

Now in its eleventh year, the continuing partnership between Toyota Canada Inc. and Evergreen supports the transformation of barren Canadian school grounds into inviting play spaces and natural learning environments. Since the start of the program, Toyota and 190 of its dealerships in Canada have contributed approximately CAN$7.5 million to help support Evergreen projects across the country.

In the 2009/10 school year, the program awarded over CAN$260,000 in grants to 158 schools and day care centers and to date has directly engaged over 814,000 children across the country. The funds provide access to an online native plant database and project registry; grants ranging from CAN$500 to $3,500 to assist in acquiring native plants, heritage vegetables and berries; and expert assistance through Evergreen and its Learning Grounds Associates.

For more information please visit **www.evergreen.ca/en/lg/lg.html**.

National Public Lands Day

In partnership with the National Environmental Education Foundation (NEEF), Toyota has sponsored National Public Lands Day (NPLD) since 1999. This past year, more than 3,100 Toyota employees and 150,000 volunteers helped clean-up and restore public lands at 37 different sites in 20 states and U.S. territories. The activities included helping to care for parks, forests, rivers, beaches, shorelines, and other areas.

For more information, please visit **www.publiclandsday.org**.

Team members from the Toyota Motor Engineering & Manufacturing, NA-Toyota Technical Center participated in National Public Lands Day by volunteering for natural area preservation work at parks in Ann Arbor, Michigan.

In FY2010, Toyota encouraged even more associates to get involved in NPLD and other volunteer activities. At our manufacturing, sales and logistics, and corporate locations, we encourage volunteerism and service to the local community through employee volunteer recognition and awarding grants to non-profit organizations chosen by our employee volunteers. For example, under the "Team Toyota Volunteer" program, non-profit organizations where our manufacturing employees volunteer a minimum of 50 hours are eligible for a grant, as well as the "Get in Gear Volunteer" program for our sales and logistics employee volunteers.

Environmental Education

We aim to provide greater opportunity for students and teachers at all levels by encouraging environmental literacy. A number of our environmental education programs are described here.

Toyota TAPESTRY

Toyota provides more than $9.2 million in funding to Toyota TAPESTRY Grants, the nation's largest science teacher grant program for K-12 grade teachers. During the past 20 years, 1,147 teams of teachers have received funding for their innovation in teaching environmental science, physical science, and integrating science and literacy into their curriculum. In 2009, Toyota TAPESTRY granted more than $550,000 for enhancing creative science education. Seventy-nine teachers were selected from over 500 applicants. Fifty teachers were awarded grants of up to $10,000 each and an additional 29 teachers received grants of up to $2,500 each.

As part of a TAPESTRY grant, students and teachers from Palm Beach Central High School in Florida work to save the endangered Snail Kite.

Some recipients have used the program as a platform to expand science-based projects beyond their classrooms and impact their communities. Jim Calaway of Lawton, Oklahoma, initially received a grant for his archaeology project, "The Lost Wichita Expedition," which resulted in the discovery of 400 artifacts; student and parent enrollment in the Southwest Anthropological Society and the Oklahoma Anthropological Society; students pursuing careers in archaeology; several teaching awards, including the Presidential Award; additional grants to expand the project to other schools; and the beginning of a successful science project and grant track record. Mr. Calaway's personal total of grants, programs, projects, and in-kind money is over $1.5 million.

For more information please visit **www.toyotatapestry.com**.

Lexus Eco Challenge

The Lexus Eco Challenge, an educational program and contest held in partnership with Scholastic, seeks to inspire and empower middle and high school students to learn about the environment and take action to improve it. Since its launch in 2007, the program has awarded more than $2.5 million in grants and scholarships and engaged nearly 16,000 participants.

This year's winners emerged from 265 registered teams representing 1,775 middle and high school students nationwide. Initial challenges addressed land, water, air or climate issues on a local level. Thirty-one teams qualified for the Final Challenge, where teams were required to inspire environmental action globally. The "McAuley Ecomacs: Operation Haiti" team from Mother McAuley High School in Chicago, Illinois built a solar-powered biodiesel production system for a village in Haiti. They also worked with representatives from a school in Haiti to plant a jatropha farm to grow seeds that generate oil for the biodiesel system.

For more information please visit **www.scholastic.com/lexus**.

Toyota International Teachers Program (TITP)

TITP, a study tour for secondary education teachers focused on promoting environmental conservation and global understanding, was established in 1998. Over 600 teachers have been sent abroad to places such as Japan, Costa Rica, and the Galapagos Islands, supported by a $1.3 million annual grant from Toyota.

A teacher and her host plant cacao at Finca La Virgen near Guácimo, Costa Rica, as part of a study tour under TITP.

In April and May 2009, 25 teachers were selected from nearly 500 applicants for a trip to Costa Rica to learn about sustainable practices in the country. They worked with area experts on sustainable development, agronomy, ecotourism and other conservation practices. For the first time, educators traveled to Monteverde, widely considered the quintessence of Costa Rica's conservation movement, to meet with researchers, visit local schools, engage in service projects and explore the role of environmental education in spreading environmental awareness.

For more information please visit **www.toyota4education.com**.

Toyota Earth Day Scholarship Program

Since 2003, 120 exceptional Canadian students have received more than $600,000 through the Toyota Earth Day Scholarship Program. Established to reward and encourage environmental commitment and action, the program awards $5,000 to be applied to each winner's first year of post-secondary full-time studies in Canada. On Earth Day 2010, 20 Canadian high school and *Cégep* (*Collège d'enseignement général et professionnel*) students were recognized for their dedication to environmental stewardship, as well as academic excellence.

In June, Andrew Wong of Burlington, Ontario, was named the 2010 Toyota Earth Day Scholarship National Winner, selected from the 20 regional finalists. Andrew's accomplishments include rallying the restoration of his school's dilapidated greenhouse, establishing the Greenhouse Horticultural Society, and growing and selling geraniums annually, raising money to replace damaged greenhouse components. He also serves as the President of the Environment Team and Biology Club; spearheaded the development of his high school's new recycling program; volunteers with the Royal Botanical Gardens Bay Area Restoration Council; and authors the environmental blog "Million Green Lights" (**www.milliongreenlights.blogspot.com**).

For more information please visit **www.earthday.ca/scholarship**.

Checks for CAN$5,000 are presented to three Ontario Regional finalists as part of the annual Toyota Earth Day National Scholarships program.

National 4-H Council's 4-H_2O Water Conservation Program

Since 2008, Toyota has sponsored the National 4-H Council's 4-H_2O Program. The Toyota grant supported the creation of environmental curriculum on water conservation, 4-H_2Online, an interactive online learning experience that engages youth in sharing their experiences with water conservation, and the expansion of the *4-H_2O Community Projects*. To date, community projects have been implemented in California, Kentucky, Michigan, Mississippi, Texas, West Virginia, and Indiana, as well as in New York City.

These community programs address local water quality, water conservation and watershed issues. Through these projects, youth learn to protect and conserve freshwater resources by participating in activities such as water quality testing, watershed cleanup events and constructing rain gardens, while also strengthening math and science skills. In its first year, *4-H_2O Community Projects* saved 138 million gallons of water. Toyota's *4-H_2O Community Projects* engaged more than 27,000 youth participants and another 91,000 community members through local events and outreach.

National Park Environmental Education Grants

Toyota announced a three-year $5 million National Parks grant program in 2008. The Toyota Leadership in Environmental Awareness for our Future (LEAF) grant was designed to enhance specific environmental educational programs to create the next generation of stewards for the environment. The grant program provides funding to five of the most visited national parks in the U.S., including the Everglades, Grand Canyon, Great Smoky Mountains, Yellowstone, Yosemite, and others through the National Park Foundation.

One of the Toyota grants, through the South Florida National Parks Trust, enabled park staff and community partners at Everglades National Park to hold two camping sessions for families that had never visited the park nor gone camping. These camping sessions were held over two weekends during the winter season of 2010. The purpose of the program was to introduce local community members to the park and enhance their appreciation of the Everglades and the outdoors.

Environmental Field Trip Grants

Every year, our assembly plant in Georgetown, Kentucky hosts field trips for students to see how our facility runs and to learn about our environmental projects. The plant hosts an average of 30,000 - 40,000 visitors annually, and approximately one-fourth are students. While visiting the facility, students tour the Environmental Education Center and Nature Trail where they learn about the region's local ecology and what our plant is doing to protect it.

A transportation reimbursement fund was created in 2008 to help schools offset the cost of a trip to our plant in Georgetown, Kentucky. Awards are based on financial need and a school's interest in implementing or improving an environmental education program. Funds are made possible by profits generated at the plant's Visitor Center gift store. Nineteen schools from Kentucky have received grants as of the end of 2009.

While at the site, students can also visit the Environmental Education Center and Nature Trail where they learn about environmental stewardship, including segregating waste and the benefits of recycling, rather than disposing of waste.

Environmental Research Partnerships

Toyota works to support research projects that promote sustainable development, including safe and reliable global energy systems to support mobility-friendly roads and cities. **In particular, we work with academia and other companies on technologies that manage and mitigate greenhouse gas emissions. (Target 15.3)**

Southern Forests for the Future

Southern forests currently cover more than 200 million acres of land and are the most biologically diverse temperate forests in the world, providing timber, paper, watershed protection, carbon storage, and recreation opportunities. In 2009, Toyota awarded $1.49 million to support the World Resources Institute's (WRI) "Southern Forests for the Future." The project aims to raise awareness of the threats facing southern U.S. forests and increase the amount of forest conserved or managed in a sustainable manner. WRI will also conduct research to identify and pilot test a portfolio of incentives that could encourage private landowners to retain their forests and sustain them.

In addition to funding, Toyota has provided technical expertise and human resources to support WRI's efforts to create time series maps that reveal trends and changes in southern forests. These maps are accessible through a groundbreaking Web portal that allows school children, universities, interest groups, and the general public to learn more about these endangered areas.

For more information please visit **www.wri.org/project/southern-forests** and **www.seesouthernforests.org**.

COMMUNICATION WITH STAKEHOLDERS

This annual environmental report communicates Toyota's environmental plans, activities, and performance (Target 16.1) and is available as an interactive publication at **www.toyota.com/environmentreport**.

Thought Leadership

Toyota recognizes that the most challenging issues require a broad set of stakeholders to discuss options and develop workable solutions. For this reason, we are facilitating international meetings with thought leaders and other stakeholders to address complex issues such as sustainable mobility.

Meeting of the Minds

In June 2009, Toyota once again presented Meeting of the Minds. The summit featured two and a half days of intensive exchange for leaders working to create more sustainable cities using smarter design tools, sounder environmental practices, and cleaner energy systems. The event was hosted by JPMorgan Chase at their headquarters in New York City. More than 100 leaders from more than 15 countries joined counterparts from public, private and independent sectors from across the New York region to discuss practical urban innovations for the future. Toyota has been the lead sponsor of this exchange of ideas and innovation since its inception in 2007.

For more information please visit **www.meetingoftheminds2010.org**.

Sustainable Mobility Seminars

In April 2010 in La Jolla, California, we held a Sustainable Mobility Seminar featuring presentations and panel discussions from global experts in energy, science and economics, exploring the future of mobility. This includes exploring new energy sources, new partnerships and new ways of doing business. The seminar for business, automotive and environmental media and analysts also offered attendees the first opportunity to drive the 2010 Prius Plug-in Hybrid (PHV) vehicle.

For more information please visit **www.toyota.com/esq**.

Governors' Global Climate Summit

In October 2009, we sponsored the Global Climate Summit in Los Angeles, California. The summit included governors and mayors from around the world, as well as industry leaders including Toyota. The aim of the summit was to involve state and local leaders in collective action to solve global climate change issues. Representatives from Toyota made presentations on advanced vehicle technologies. Outcomes from the summit were conveyed by Governor Schwarzenegger and others to representatives at the United Nations Climate Change Conference of the Parties, held in Copenhagen, Denmark in December 2009.

TOYOTA

north american presence

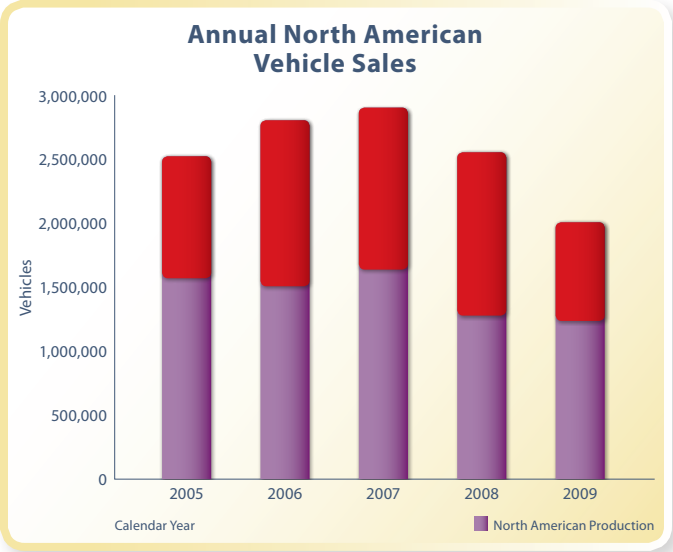
Toyota remains committed to sustainable plant operations in North America. We have resumed construction at our site in Blue Springs, Mississippi, where production of the Corolla will begin in the fall of 2011.

"Toyota employs over 40,000 people in North America and has invested more than $23 billion here. We are firmly committed to long-term operations in this region."

– Yoshimi Inaba, President & Chief Operating Officer
Toyota Motor North America, Inc.

TOYOTA (NYSE:TM) ESTABLISHED OPERATIONS in North America in 1957 and currently operates 14 manufacturing plants, including one under construction. Together, Toyota's plants in the U.S., Canada and Mexico produced over 1.2 million vehicles in CY2009. Further, more than 2.05 million vehicles were sold in CY2009 at 1,800 Toyota, Lexus and Scion dealerships in North America. More than 62% of the vehicles Toyota sold in North America were built here.

FIGURE P



Toyota continues to invest in the communities where we do business. As of CY2009, our direct investment in North America was valued at over $23 billion and included over 30 manufacturing and engineering, research and design, sales, financial and logistics facilities. We employed more than 40,000 people with an annual payroll of $3.09 billion, and our purchasing of parts, materials, goods and services from North American suppliers totaled more than $25 billion.

FIGURE Q

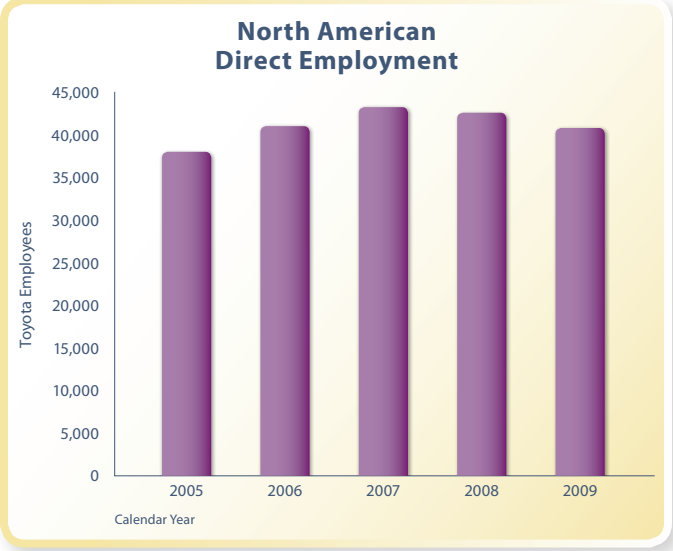


FIGURE R

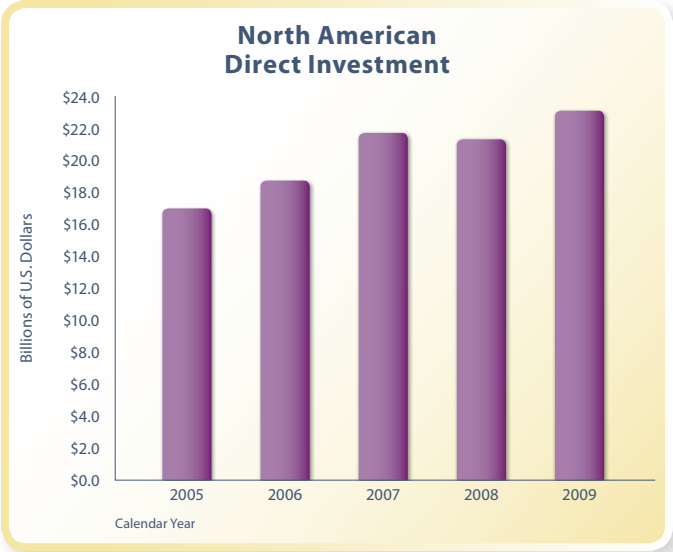


FIGURE S

During the past year, the economic slowdown had a significant impact on industries across the globe. The auto industry was no exception, with reduced demand impacting manufacturers, dealers and suppliers. Despite this challenge, Toyota remains committed to maintaining a strong manufacturing presence in North America, as well as reducing our environmental footprint across our operations. This includes further localizing production of many key models at our plants.

Our commitment to North America is also reflected in a partnership announced by Toyota and Tesla Motors, Inc. in May 2010 to create an electric version of the RAV4 and study additional electric vehicle and production initiatives.

TOYOTA'S NORTH AMERICAN AFFILIATES

Toyota Motor North America, Inc. (TMA), is the holding company for Toyota's U.S. sales and manufacturing operations with offices in New York City, Washington, D.C., and Miami. Functions include government and regulatory affairs, energy, environment, economic research, philanthropy and corporate communications.

Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA), is headquartered in Erlanger, Kentucky. The company is responsible for Toyota's North American engineering design and development, R & D, and manufacturing activities in the U.S., Canada and Mexico.

In 2009, our manufacturing facilities were located in:

- Huntsville, Alabama
- Fremont* and Long Beach, California
- Princeton, Indiana
- Georgetown, Kentucky
- Blue Springs, Mississippi (under construction)
- St. Louis and Troy, Missouri
- Jackson, Tennessee
- San Antonio, Texas
- Buffalo, West Virginia
- Delta, British Columbia
- Cambridge and Woodstock, Ontario
- Baja California, Mexico

* The Fremont location was a joint venture with General Motors. Production stopped in March 2010.

Toyota Motor Sales, U.S.A., Inc. (TMS), headquartered in Torrance, California, is the marketing, sales, distribution and customer service arm of Toyota, Lexus and Scion in the United States. TMS markets products and services through a network of 1,500 Toyota, Lexus and Scion dealers in the U.S.

Toyota Canada Inc. (TCI), headquartered in Toronto, Ontario, is the exclusive Canadian distributor of Toyota and Lexus cars, SUVs and trucks at nearly 270 dealerships, and also includes Toyota Industrial Equipment. TCI has regional offices in Vancouver, Calgary, Montreal and Halifax, and parts distribution centers in Toronto and Vancouver.


NORTH AMERICAN OPERATIONS
Toyota Sales or Service Office*
Lexus Sales or Service Office*
Financial Services Office*
Manufacturing Facility
Joint Venture Facility
Supplier State/Province
Holding Company
Research & Development Center
Design Center
Hino Operation or Manufacturing Facility
Dealerships throughout North America
*May represent more than one location.
Data as of 12/08. ©2009
Alaska
Yukon Territory
Northwest Territories
Nunavut
British Columbia
Alberta
Saskatchewan
Manitoba
Ontario
Quebec
Labrador
Newfoundland
Prince Edward Island
New Brunswick
Nova Scotia
Vancouver Island
Washington
Oregon
California
Idaho
Nevada
Montana
Wyoming
Utah
Arizona
Colorado
New Mexico
North Dakota
South Dakota
Nebraska
Kansas
Oklahoma
Texas
Minnesota
Iowa
Missouri
Arkansas
Louisiana
Wisconsin
Illinois
Michigan
Indiana
Ohio
Kentucky
Tennessee
Mississippi
Alabama
Georgia
Florida
South Carolina
North Carolina
Virginia
West Virginia
Pennsylvania
New York
Maine
VT
NH
MA
CT
Rhode Island
New Jersey
Delaware
MD
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
Pacific Ocean
Atlantic Ocean
Baja California Norte
Baja California Sur
Chihuahua
Coahuila
Nuevo León
Tamaulipas
Guanajuato
Estado de México
Distrito Federal
Puerto Rico
Hawaii