

# Transportation Data Programs:

## Transportation Energy Data Book, Vehicle Technologies Market Report, and VT Fact of the Week

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May 16, 2013

Project ID# VAN009

This presentation does not contain any proprietary, confidential, or otherwise restricted information



# Overview

## Timeline



- Project start date: October 2012
- Project end date: September 2013
- Percent complete: 80%

## Barriers



- Barriers addressed
  - *Multi-Year Program Plan 2011 - 2015*  
Section 2.6 Outreach, Deployment and Analysis A, B, C
  - Section 3.2 Program Analysis

## Budget



- Total project funding
  - \$575K / year
- Funding received in FY12: \$575K
- Funding for FY13: \$575K

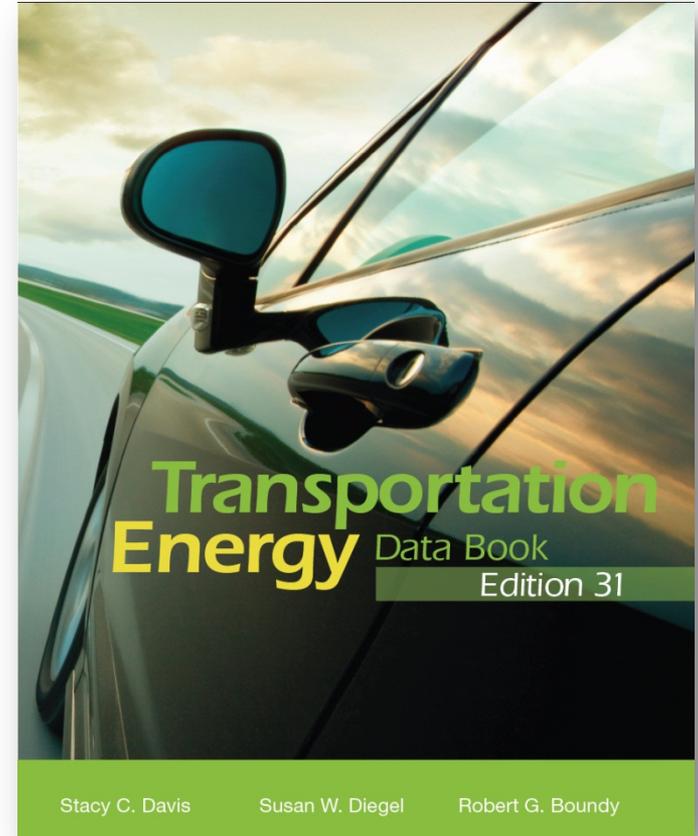
## Partners



- Collaboration with:
  - Energy Information Administration
  - U.S. Department of Transportation
  - U.S. Environmental Protection Agency
  - U.S. Census Bureau
  - Argonne National Laboratory
  - National Renewable Energy Laboratory
  - Ward's Automotive

# Transportation Energy Data Book Relevance

- This long-running project has been active at Oak Ridge National Laboratory since 1975. We are currently working on **Edition 32**.
- The purpose of the project is to draw together, under one cover, transportation data from diverse sources, to resolve data conflicts and inconsistencies, and to produce a comprehensive document.
- Policymakers, transportation analysts, and VTO staff require quality historical data and information on the transportation sector to affect good decisions for the future.
- The Data Book supports VTO public outreach and allows VTO staff and EERE Public Affairs Office to provide quick responses to outside queries.

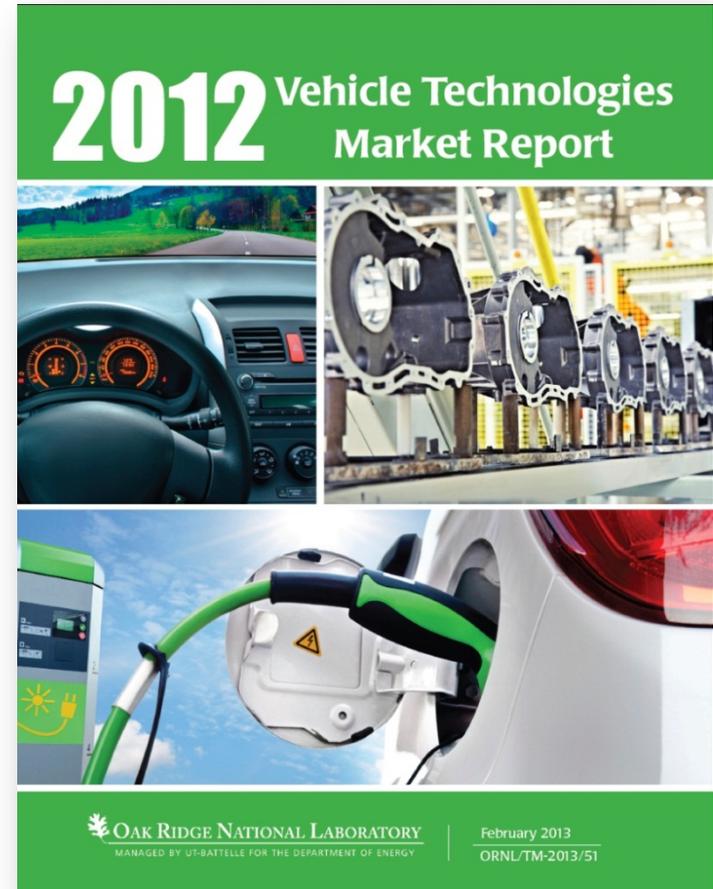


**Website address:**  
<http://cta.ornl.gov/data/>

# Vehicle Technologies Market Report

## Relevance

- The *Vehicle Technologies Market Report* began in 2009 and four editions have been published thus far.
- This report details the major trends in U.S. light-duty vehicle and medium/heavy truck markets and contains data on an individual manufacturer level.
- Special attention is given to the progress of high efficiency and alternative fuel technologies, in accordance with VTO's mission.
- The report supports VTO public outreach and allows VTO staff and EERE Public Affairs Office to provide quick responses to outside queries.



**Website address:**  
<http://cta.ornl.gov/vtmarketreport/>

# VTO Fact of the Week Relevance

- ORNL began developing the weekly VTO Fact of the Week in April 2001.
- The Fact topics align to VTO's mission, mainly concentrating on the energy uses and energy efficiencies of the highway mode.
- The Fact supports VTO public outreach and drives traffic to the VTO website.

Website address:

[http://www1.eere.energy.gov/vehiclesandfuels/facts/2013\\_index.html](http://www1.eere.energy.gov/vehiclesandfuels/facts/2013_index.html)

The screenshot shows the website for the Vehicle Technologies Office (VTO) under the U.S. Department of Energy. The page features a green header with the VTO logo and navigation links: HOME, ABOUT THE PROGRAM, TECHNOLOGIES, INFORMATION RESOURCES, FINANCIAL OPPORTUNITIES, and EV EVERYWHERE GRAND CHALLENGE. Below the header, there is a breadcrumb trail: EERE > Vehicle Technologies Office > Fact of the Week. The main content area is titled '2013 Facts of the Week' and includes a sub-section for 'This Week's Fact' with the entry: #769 March 4, Monthly Trend in Light Vehicle Sales, 2008-2012. A table lists several other facts from 2013, including topics like 'New Light Vehicle Sales and Gross Domestic Product', 'Federal Excise Tax on Gasoline, 1932 - 2012', 'Electricity Prices are More Stable than Gasoline Prices', 'EPA's Top 10 Conventionally-Fueled Vehicles for Model Year 2013', 'Model Year 2013 Brings More Fuel Efficient Choices for Consumers', 'Eighty-four Percent of Scrapped Tires Are Recycled', 'Sales from Introduction: Hybrid Vehicles vs. Plug-in Vehicles', and 'Smaller Share of Teenagers Have a Driver's License in 2010'. Below the table, there are links for '2012 Facts of the Week', '2011 Facts of the Week', and a list of links for '2010 Facts of the Week', '2009 Facts of the Week', '2008 Facts of the Week', '2007 Facts of the Week', '2006 Facts of the Week', '2005 Facts of the Week', and '2004 Facts of the Week'.

Fact ID	Fact Title	Date
#768	<a href="#">New Light Vehicle Sales and Gross Domestic Product</a>	February 25, 2013
#767	<a href="#">Federal Excise Tax on Gasoline, 1932 - 2012</a>	February 18, 2013
#766	<a href="#">Electricity Prices are More Stable than Gasoline Prices</a>	February 11, 2013
#765	<a href="#">EPA's Top 10 Conventionally-Fueled Vehicles for Model Year 2013</a>	February 4, 2013
#764	<a href="#">Model Year 2013 Brings More Fuel Efficient Choices for Consumers</a>	January 28, 2013
#763	<a href="#">Eighty-four Percent of Scrapped Tires Are Recycled</a>	January 21, 2013
#762	<a href="#">Sales from Introduction: Hybrid Vehicles vs. Plug-in Vehicles</a>	January 14, 2013
#761	<a href="#">Smaller Share of Teenagers Have a Driver's License in 2010</a>	January 7, 2013

The Mission of the Vehicle Technologies Office (VTO) is to develop and assist in the deployment of more energy-efficient and environmentally friendly technologies for highway transportation passenger and commercial vehicles that will meet or exceed performance expectations and environmental requirements, enabling the U.S. to use significantly less petroleum and reduce greenhouse gas emissions. - *Multi-Year Program Plan 2011 – 2015*

# Transportation Energy Data Book Milestones

*Transportation Energy Data Book: Edition 31* published July 2012

	Transportation Energy Data Book	31
	Transportation Energy Data Book	30
ORNL-6885	TRANSPORTATION ENERGY BOOK	29
ORNL-6884	Transportation Energy Data Book	28
ORNL-6881	Transportation Energy Data Book	27
ORNL-6878	Transportation Energy Data Book	26
ORNL-6974	Transportation Energy Data Book	25
	TRANSPORTATION ENERGY DATA BOOK	24
	TRANSPORTATION ENERGY DATA BOOK	23
	TRANSPORTATION ENERGY DATA BOOK	22
ORNL-6966	Transportation Energy Data Book	21
ORNL-6959	Transportation Energy Data Book	20
ORNL-6958	Transportation Energy Data Book	19
ORNL-6941	Transportation Energy Data Book	18
ORNL-6919	Transportation Energy Data Book	17
ORNL-6898	Transportation Energy Data Book	16
ORNL-6855	Transportation Energy Data Book	15
ORNL-6798	Transportation Energy Data Book	14
ORNL-6743	TRANSPORTATION ENERGY DATA BOOK: 13	13
ORNL-6710	TRANSPORTATION ENERGY DATA BOOK: Edition 12	12
ORNL-6649	TRANSPORTATION ENERGY DATA BOOK: Edition 11	11
ORNL-6565	TRANSPORTATION ENERGY DATA BOOK: EDITION 10	10
ORNL-6325	TRANSPORTATION ENERGY DATA BOOK: EDITION 9	9
ORNL-6303	TRANSPORTATION ENERGY DATA BOOK: EDITION 8	8
ORNL-6030 (Edition 7 of ORNL-5193)	TRANSPORTATION ENERGY DATA BOOK: EDITION 7	7
ORNL-5976	Transportation Energy Conservation Data Book	5
ORNL-5854	Transportation Energy Conservation Data Book	4
ORNL-5493 Special	Transportation Energy Conservation Data Book	
ORNL-5220	TRANSPORTATION ENERGY CONSERVATION DATA BOOK: EDITION 2	
ORNL-5198 Special	TRANSPORTATION ENERGY CONSERVATION DATA BOOK	

Edition 32 will be published in July 2013

# Vehicle Technologies Market Report Milestones

- Published the 2011 *Vehicle Technologies Market Report* – February 2012
- Published the 2012 *Vehicle Technologies Market Report* – February 2013



# VTO Fact of the Week Milestones

- Developed a new Fact each week of FY 2012 to be posted on the Vehicle Technologies Home Page
- Developed and will continue to develop a new Fact each week of FY 2013 to be posted on the Vehicle Technologies Home Page

# Transportation Energy Data Book Approach/Strategy

## Discovery

- Content review
  - Petroleum
  - Energy
  - Highway Vehicles
  - Light Vehicles
  - Heavy Vehicles
  - Alternative Fuel Vehicles
  - Fleet Vehicles
  - Household Vehicles
  - Nonhighway Modes
  - Transportation & the Economy
  - Greenhouse Gas Emissions
  - Criteria Pollutants
  - Unit Conversions
- Source identification
- Data collection
  - From Excel, pdf & hardcopy

## Due Diligence

- Convert units
- Perform calculations
- Confirm all series revisions
- Analyze disparate data
- Study definitions
- Assemble notes
- Create tabulations and graphics

## Outreach

- Update Website
  - Serve data in Excel and pdf
- Publish hardcopy
  - Distribute to mailing list of nearly 1,300 people
- Answer questions from the public

# Vehicle Technologies Market Report Approach/Strategy

## Discovery

- Content review
  - Energy & Economics
  - Light Vehicle Market
  - Heavy Truck Market
  - Advanced Technologies
  - Policy
- Source identification
- Data collection
  - From Excel, pdf & hardcopy

## Due Diligence

- Convert units
- Perform calculations
- Confirm all series revisions
- Analyze disparate data
- Study definitions
- Assemble notes
- Create graphics and tabulations

## Outreach

- Update Website
  - Serve data in Excel and pdf
- Answer questions from the public

# VTO Fact of the Week Approach/Strategy

## Discovery

- Probe for new report releases on:
  - Fuels
  - Vehicle efficiency
  - Policy
  - Advanced technology
  - Consumer trends
- Search for data on timely news topics
- Data collection
  - From Excel, pdf, html & hardcopy

## Due Diligence

- Convert units
- Perform calculations
- Study definitions
- Assemble notes
- Create graphics and tabulations

## Outreach

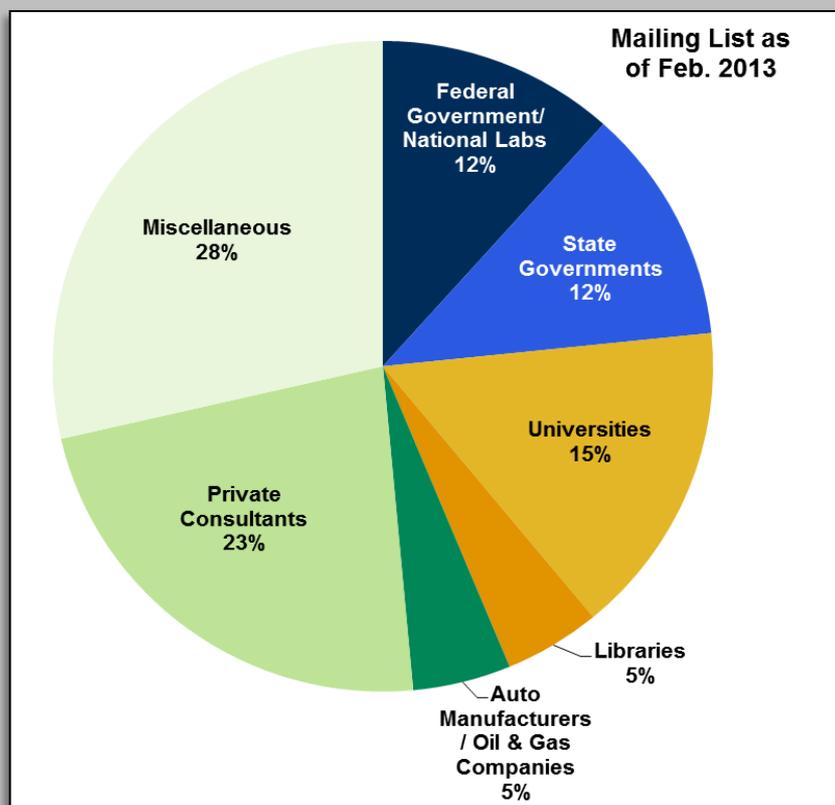
- Provide a new Fact of the Week for posting on the VTO website on a weekly basis

# Transportation Energy Data Book

## Technical Accomplishments and Progress

Successful Outreach: Hardcopies of the Data Book are preferred by many

Hardcopy mailing list of about  
1,300 individuals



1,600 books printed in FY12

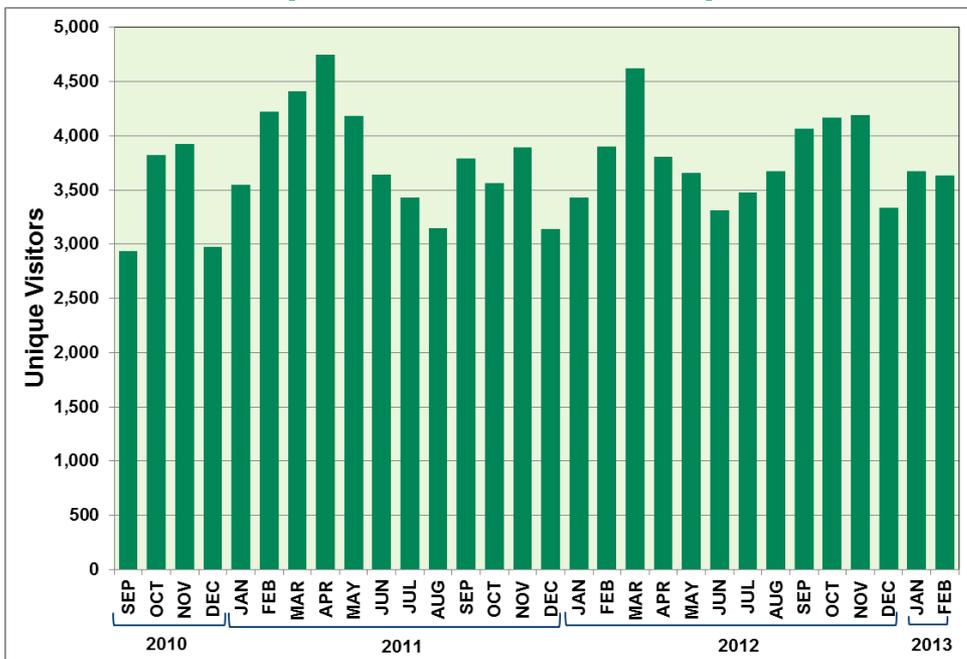
It costs less than \$25K to print and mail hardcopies – black & white pages with color cover – using the Government Printing Office and Media Mail postage rate.

If any hardcopies are left once the new edition is printed, they are sent to schools and universities for use as reference books for students.

The University of Michigan and Georgia Tech University have used the Data Book as a course textbook.

# Transportation Energy Data Book Technical Accomplishments and Progress

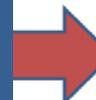
Successful Outreach: Website content easily available and accessed by many  
3-4,000 unique website visitors per month



Transportation Energy Data Book		U.S. DEPARTMENT OF ENERGY	Energy Efficiency & Renewable Energy
<b>Download Edition 30</b>			
Edition 30 is available for download in PDF format. It is available as a single file however, for ease of downloading, it may also be downloaded in the sections listed below. <i>Note: Previous editions of the Transportation Energy Data Book are not available from this website.</i>			
Front Cover			
Title Pages			
Table of Contents			
Foreword	Acknowledgments, Abstract, and Introduction		
Chapter 1	Petroleum		
Chapter 2	Energy		
Chapter 3	All Highway Vehicles and Characteristics		
Chapter 4	Light Vehicles and Characteristics		
Chapter 5	Heavy Vehicles and Characteristics		
Chapter 6	Alternative Fuel and Advanced Technology Vehicles and Characteristics		
Chapter 7	Fleet Vehicles and Characteristics		
Chapter 8	Household Vehicles and Characteristics		
Chapter 9	Nonhighway Modes		
Chapter 10	Transportation and the Economy		
Chapter 11	Greenhouse Gas Emissions		
Chapter 12	Criteria Air Pollutants		
Appendix A	Sources		
Appendix B	Conversions		
Appendix C	Maps		
Glossary			
Title Index			
Back cover			
Full Document	Download the Transportation Energy Data Book: Edition 30 in one large continuous file. (5,661 KB)		
Download all Excel Spreadsheets (zip file)	Download all Excel spreadsheets for the Transportation Energy Data Book: Edition 30 in one zipped file. (3,687 KB)		
<a href="#">Contact us</a> <a href="#">Webmaster</a> <a href="#">U.S. Department of Energy</a> <a href="#">EERE Home</a> <a href="#">Disclaimer</a>			

## Responsive to user comments

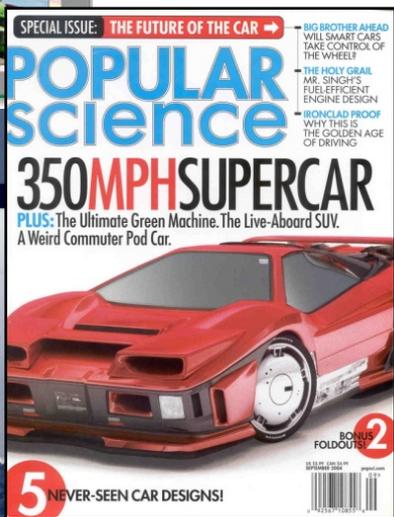
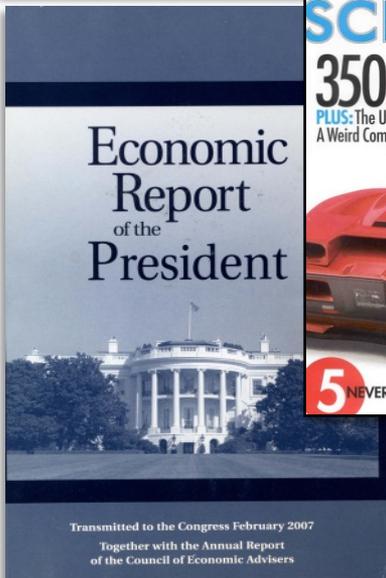
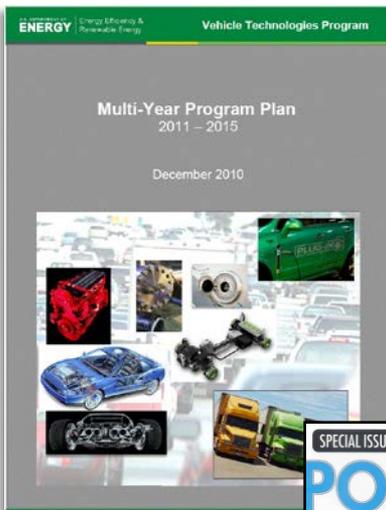
Researchers said they wanted to be able to “pack” all Excel spreadsheets from the Data Book onto their laptops for use when they had no Internet connection



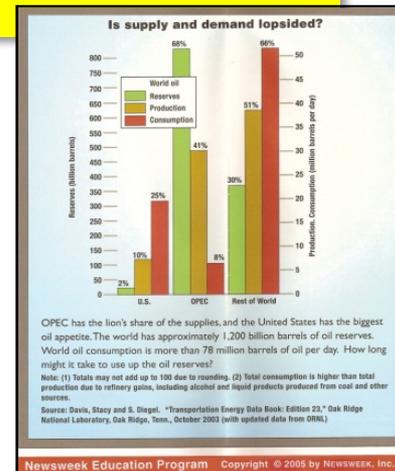
# Transportation Energy Data Book Technical Accomplishments and Progress

Outreach via hardcopy and the web has led to widespread use of the data and public education on transportation

Besides being cited twice in the Vehicle Technologies *Multi-Year Program Plan*, data from the *Transportation Energy Data Book* has been used in a variety of other documents, such as *The Economic Report of the President*, *Popular Science Magazine*, and *Newsweek Education*.



Many models developed for VTO use input data from the book, as well as other agencies' models, such as EIA's National Energy Modeling System (NEMS) and EPA's Motor Vehicle Emission Simulator (MOVES).

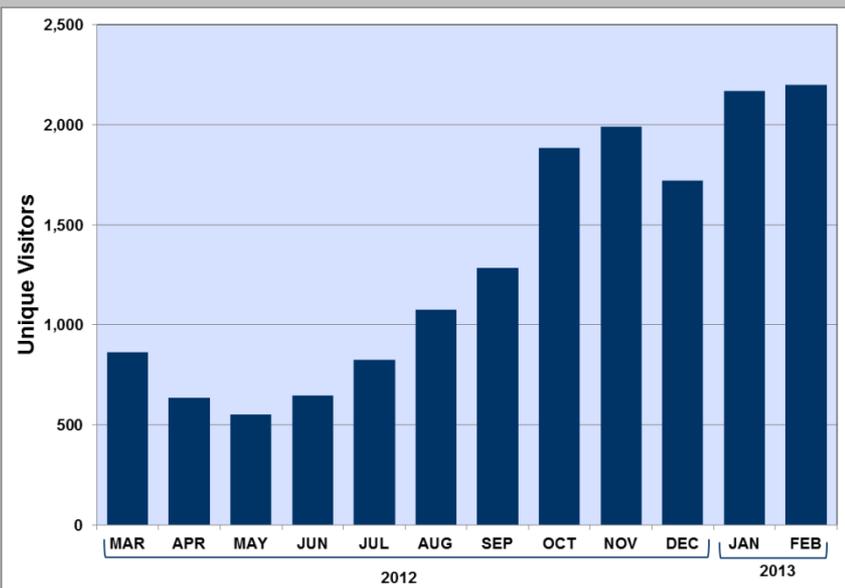


Searching Google Scholar shows more than 1,100 citations for the Data Book in scholarly reports.

# Vehicle Technologies Market Report Technical Accomplishments and Progress

## Website Traffic

Between 2,000 and 2,500 unique website visitors per month just before the new 2012 edition went on-line in March 2013.



## Improvements for 2011 Version

Changed from a two-column, small graph format to a format with a graph on each page and more room for highlights, sources and notes.

**Transportation Energy Trends**

**Transportation accounts for 28.5% of total U.S. energy consumption**

In 2010, the transportation sector used 27 quads of energy, which is 28.5% of total U.S. energy use (Figure 1). Nearly all of the energy consumed in this sector is petroleum (94%), with small amounts of renewable fuels (3%) and natural gas (3%). With the future use of plug-in hybrids and electric vehicles, transportation will begin to use electric utility resources. The electric-utility sector draws on the widest range of sources and uses only a small amount of petroleum. The energy sources have not changed much during the past five years, although renewable fuel use has grown slightly in each sector.

**Figure 1. U.S. Energy Sector and Energy Source, 2008**

**Figure 2. Fuel Use per Mile**

**Figure 3. Relationship of VMT and GDP**

**Transportation is more efficient**

The number of miles driven on our nation's highways has generally been growing during the past three decades, and energy use has grown with it. However, due to advanced engines, materials, and other vehicle technologies, the amount of fuel used per mile has declined from 1970 (Figure 2). The gallons per mile fell steadily from the early 1990s to 2005, showing that the fuel economy for new vehicles was stagnant during this period.

**Energy prices affect the transportation sector**

The prices of gasoline and diesel fuel affect the transportation sector in many ways. For example, price can impact the number of miles driven in a year and affect the choices consumers make when purchasing vehicles. The price of gasoline rose dramatically from 2005 to 2008, then fell to near 2007 levels again in 2009; from an annual average of \$2.27 per gallon in 2005 to \$3.25 in 2008, and back to \$2.35 in 2009 (Figure 4). Diesel fuel prices rose even higher than gasoline in 2008 (\$5.89 per gallon), but

**Transportation Accounts for 28% Total U.S. Energy Consumption**

In 2010, the transportation sector used 27 quads of energy, which is 28% of total U.S. energy use. Nearly all of the energy consumed in this sector is petroleum (94%), with small amounts of renewable fuels (3%) and natural gas (3%). With the future use of plug-in hybrids and electric vehicles, transportation will begin to use electric utility resources. The electric-utility sector draws on the widest range of sources and uses only a small amount of petroleum. Over the last five years, the energy sources have not changed significantly, although renewable fuel use has grown slightly in each sector.

**Figure 1. U.S. Energy Consumption by Sector and Energy Source, 2010**

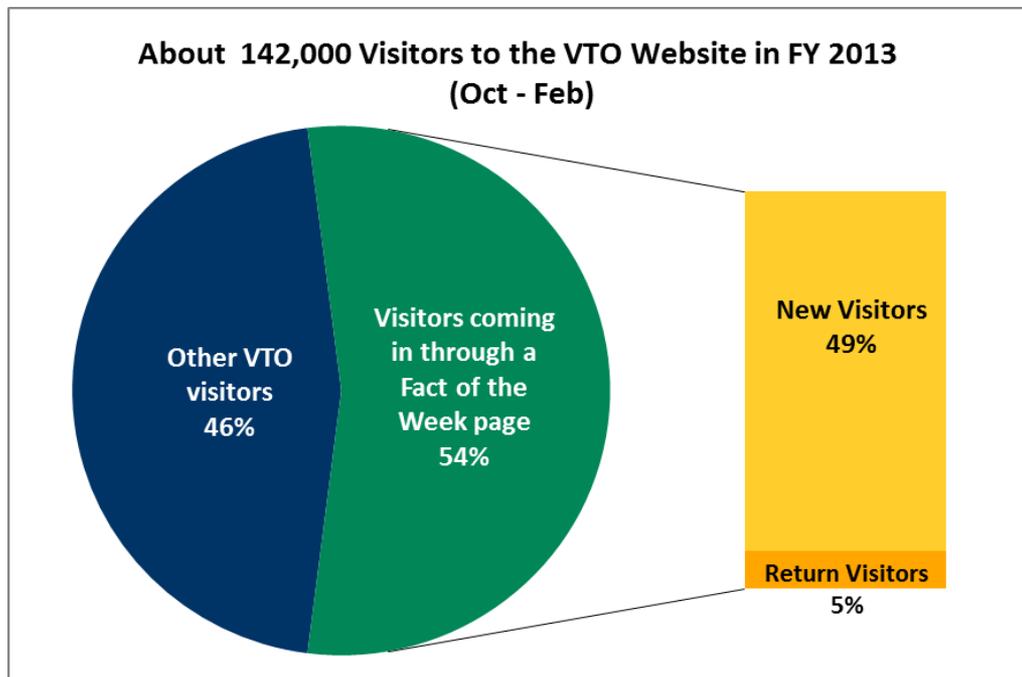
**Figure 2. Sector Share of Energy Resource Consumption**

2010 version vs. 2011 version

# VTO Fact of the Week

## Technical Accomplishments and Progress

More than half of the visitors to the VTO website come through the Fact of the Week web page.



Of the 24 Facts posted in this fiscal year (Oct–Feb), only six were data that were included in the Data Book or Market Report

Amy Foster, an energy blogger, wrote in 2010:

“I have a secret. When I need a little pick-me-up at work, I often surf over to the EERE Vehicle Technologies Program website and read their latest [Fact of the Week](#). Updated like clockwork every week, the Fact of the Week site provides dozens (if not hundreds) of factoids of a broad variety of vehicle-related topics.

“Call me crazy, but these little weekly statistical gems are always fascinating to me.... These archives are a treasure trove of interesting information.”

# Collaboration and Coordination with Other Institutions

In order to effectively communicate the data coming from an organization, one must know some of the details, definitions, and processes behind the data. ORNL continually communicates with the following organizations in order to gain better understanding of the data coming from those organizations.



**Energy Information Administration**



**U.S. Environmental Protection Agency**



**U.S. Department of Transportation**



**U.S. Census Bureau**



**Argonne National Laboratory**



**National Renewable Energy Laboratory**



**Ward's Automotive Info Bank**

**Other sources, as necessary**

# Proposed Future Work

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FY 2013

The final *Transportation Energy Data Book* will be sent to the printers and posted on the website in July.

A Fact of the Week will be developed and posted on the Vehicle Technologies Home Page weekly.

FY 2014

An updated annual *Transportation Energy Data Book* will be published.

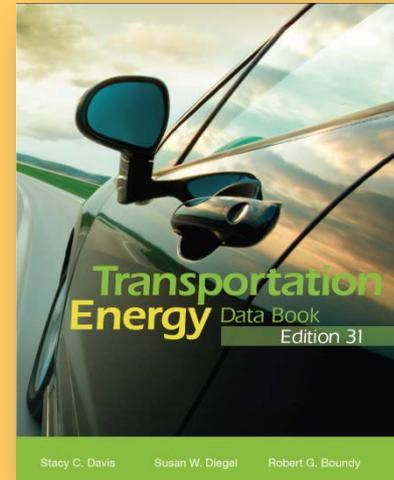
An updated annual *Vehicle Technologies Market Report* will be published.

The Fact of the Week will be developed and posted to the Vehicle Technologies home page on a weekly basis.

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# Transportation Energy Data Book Summary

- The *Transportation Energy Data Book* is a black & white publication with historical data tables that provide the foundation for the analysis performed by VTO staff and other transportation analysts in pursuit of energy efficient and environmentally-friendly technologies.
- The associated website serves data in Excel format and pdf format to 3-4,000 unique monthly visitors.
- Data from the book feeds into many other VTO products – from reports to models – as well as other Federal Agency projects.



# Vehicle Technologies Market Report Summary

- The *Vehicle Technologies Market Report* is a colorful graphic-based report with figures that display data on an individual company level. The emphasis of the report is the vehicle market and new technologies coming into the market, which is useful to VTO staff and others.
- The associated website serves data in both Excel and pdf format to about 2,000 unique monthly visitors.



# VT Fact of the Week Summary

- The VT Fact of the Week is presented graphically with summary text and posted “like clockwork” every Monday morning on the DOE VTO website home page, attracting visitors to the website.
- Transportation stakeholders and the general public benefit from VTO’s data expertise through these readily accessible Facts.



# Summary

Though each of these three data products has its own focus, the synergy among the products adds to the efficiency of the project.

