

# Diesel Engines

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 July 2005  
 \$4100

## US diesel engine demand to grow 4.2% annually through 2009

US demand for diesel engines and related aftermarket parts is forecast to increase 4.2 percent annually through 2009 to \$16.3 billion, a substantial improvement over the performance registered during the 1999-2004 period, when key diesel engine markets such as heavy-duty trucks experienced sharp production declines. Gains will be driven in general by continued expansion of the US economy.

## Off-highway diesel engines to outpace motor vehicle uses

Although motor vehicle diesel engines will still comprise the largest product segment in 2009, off-highway diesel engines will grow faster, spurred in large part by renewed growth in such large markets as construction and agricultural equipment, both of which have a high degree of diesel engine penetration. Despite being relatively small diesel markets, the fastest-growing off-highway markets will be marine

equipment and electric power generation, supported by heightened boat building and shipbuilding activity, as well as by rising interest in off-grid electric power sources. Both marine equipment and electric power generation are expected to become about \$500 million diesel markets by 2009.

## Heavy-, light-duty trucks to lead gains in diesel vehicles

Heavy-duty trucks will remain the largest motor vehicle market for diesel engines, despite projected declines in heavy-duty truck production through 2009. Light-duty trucks will continue to be the second-largest motor vehicle market and experience the most rapid growth, with the other motor vehicle market -- which includes specialty vehicles -- posting the second-largest gains. Additionally, technological innovations, many of which will be prompted by federally mandated emissions control regulations, will spur demand for new, cleaner-burning diesel engines and components at both the original equipment manufacturing and aftermarket levels in the motor vehicle and off-highway segments.



## US trade surplus to continue losses

Shipments of diesel engine products from US manufacturing sites will grow 3.5 percent annually through 2009 to \$16.4 billion, lagging demand but nonetheless a significant recovery from the meager gains registered in the early years of the new millennium. Domestic producers will also benefit from increasing exports of off-highway diesel engines to countries like Mexico and Canada, although they will not be sufficient to prevent the US trade surplus in diesel engine products from shrinking considerably

by 2009. The receding trade surplus will be due in part to the establishment of plants by US suppliers in countries with lower production costs, continuing an historical trend.

## Study coverage

This 240-page Freedonia industry study, **Diesel Engines**, is available for \$4100. It provides historical demand data (1994, 1999, 2004) and forecasts to 2009 and 2014 by diesel engine product, material and market. The study also considers external market factors, reviews technology, evaluates market share and profiles 29 leading manufacturers.

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TABLE V-2 MOTOR VEHICLE DIESEL ENGINE PRODUCT DEMAND (million dollars)	
Item	<b>DIESEL ENGINE MARKETS</b>
Motor Vehicle Production (000)	<p><b>Passenger Cars</b> — US demand for diesel engines and associated aftermarket parts is expected to increase through 2009 to \$1.5 billion, up from \$1.1 billion in the 1999-2004 period. The new millennium was due in part to a growing fuel-efficient diesel engine market.</p> <p>The diesel engine market is extremely tiny, with diesel engines accounting for less than one percent of the new millennium. While the percentage of diesel cars sold in the US is expected to increase in coming years, diesels will still represent a negligible portion of the overall car market for a variety of factors. One important reason is the relatively low price of gasoline in the US compared with other countries (such as the nations of Western Europe), which tends to blunt the urgency of finding more fuel-efficient means of motor vehicle travel. The higher initial costs associated with diesel engines relative to gasoline engines also discourages demand for diesel-powered cars. Additionally, the significantly smaller diesel fueling infrastructure — as of January 2005 only about 40 percent of US service stations carried diesel fuel — has suppressed demand to some extent. Another factor negatively affecting the diesel-powered passenger car market is the lingering reputation of such cars being extremely noisy producers of pollution — a reputation established by the early generation diesel automobiles of the 1970s and 1980s. The burgeoning popularity of fuel-efficient gasoline engines in the last few years has taken away much of the lustre that had historically been the only significant fuel-efficient alternative.</p>
Motor Vehicles in Use (million)	
\$ engines/unit produced	
\$ parts/unit in use	
MV Diesel Engine Product Demand	
By Application:	
Heavy-Duty Trucks	
Medium-Duty Trucks	
Light-Duty Trucks	
Buses	
Other	
By Product:	
Engines	
Parts	
% motor vehicle	
Total Diesel Engine Product Demand	

TABLE V-11 OTHER MOTOR VEHICLE DIESEL ENGINE PRODUCT DEMAND (million dollars)					
Item	1994	1999	2004	2009	2014
MV Diesel Engine Product Demand	5394	8400	11000	15000	20000
% other	0.0	0.0	0.0	0.0	0.0
Other Motor Veh Diesel Engine Dem					
By Product:					
Engines					
Parts					
By Vehicle Type:					
Specialty Vehicles					
Recreational Vehicles					
Passenger Cars					
% diesel-equipped RVs					
% diesel-equipped passenger					

Gives historical data through 2004 plus Freedonia forecasts to 2009 and 2014

“However, a variety of factors will contribute to growing installation of diesel engines in passenger cars over the next several years. For example, while the price of gasoline is still relatively low compared to Western Europe and other regions, the substantial increases in the price per gallon of gasoline in the US throughout 2004 and into 2005 are fostering greater interest in motor vehicle powerplants that have improved fuel economy, such as diesel engines. Diesel cars can offer a 20- to 40-percent increase in fuel economy over gasoline-powered equivalents. Also stimulating demand will be ...”

-- pg. 108

**This study can help you:**

- Determine your market & sales potential
- Complement your research & planning
- Learn more about industry competitors
- Assess new products & technologies
- Identify firms to merge with or acquire
- Gather data for presentations
- Confirm your own internal data
- Make better business decisions

TABLE IV-4

DIESEL ENGINE AFTERMARKET PARTS SUPPLY & DEMAND (million dollars)

Item 1994 1999 2004 2009 2014

Diesel Engine Product Demand % parts
Aftermarket Parts Demand + net exports
Aftermarket Parts Shipments
Injection Systems
Turbochargers & Related Heads & Liners
Bearings & Camshafts
Engine Blocks
Crankshafts
Other Products

Source: The Freedonia Group, Inc.

DIESEL ENGINE PRODUCTS & MATERIALS

Motor Vehicle Diesel Engine Demand

SAMPLE TABLE

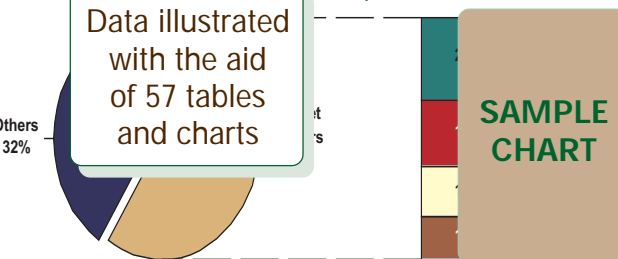
Explanations to support each table's data and forecasts

Demand in the motor vehicle industry is expected to annual rate through the non-vehicular increases shown in every — and its acc will help spur marke ated parts. In addi tor will contribute Volkswagen (VW) introduced diesel engine-equipped versions of its TOUAREG and PASSAT vehicles, complementing its diesel GOLF, JETTA and NEW BEETLE automobiles. In another instance, DaimlerChrysler launched a diesel engine-powered JEEP LIBERTY sport utility vehicle (SUV) in December 2004. According to the company, this vehicle is the first diesel-powered mid-sized SUV to be offered in the US. Due to brisk sales, DaimlerChrysler announced in May 2005 that it was considering an increase in production of the diesel JEEP LIBERTY and was also contemplating diesel versions of selected other vehicles, including the JEEP GRAND CHEROKEE SUV. DaimlerChrysler's Mercedes-Benz division also plans to launch diesel engine-equipped vehicles in all 50 US states by 2008.

The availability of low-sulfur diesel fuels in 2006 is also expected to boost motor vehicle diesel engines demand, as will continual technological innovations, many of which will be undertaken to improve engine performance and meet federal emissions standards. One technological innovation in the motor vehicle diesel engine market is the March 2005 announcement

CHART VI-1

US DIESEL ENGINE PRODUCT MARKET SHARE BY COMPANY, 2004 (billion)



Data illustrated with the aid of 57 tables and charts

SAMPLE CHART

COMPANY P

Brunswick Co
One North Field
Lake Forest, IL
847-735-4700
http://www.brunswick.com

Sales: \$
US Sales
Employ

SAMPLE PROFILE

Key Products: recreational inboard diesel engines, and sterndrive

Business: Brunswick is involved in the production of marine power equipment and supplies. In addition, the Company owns and operates bowling centers throughout the US and other parts of the world and also maintains a chain of specialty fitness retail stores. The Company operates in four segments: Marine Engine, Boat, Fitness, and Bowling and Billiards.

The Company is active in the diesel engine industry via the Marine Engine segment, which had sales of \$2.4 billion, including eliminations, and employed 6,450 in 2004. Among the segment's operations is the Mercury Marine Group subsidiary (Fond du Lac, Wisconsin), which manufactures and sells a variety of sterndrive, inboard and outboard engines, and water-jet propulsion systems under the MERCURY, MERCURY MERCURUISER, MERCURY RACING, MERCURY SPORTJET, MERCURY JET DRIVE and MARINER brand names. Brunswick reports that Mercury Marine has the largest dollar sales volume of recreational marine engines in the world.

Engines produced by Mercury Marine incorporate diesel or gasoline drives. Brunswick diesel drives include DIESEL BRAVO ONE X, DIESEL BRAVO TWO X and DIESEL BRAVO THREE X models. In addition to providing torque performance and durability, these drives are outfitted with POWER TRIM XD cylinders with a hydraulic memory feature that returns

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