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World Hybrid-Electric Vehicles

Industry Study with Forecasts to 2010, 2015 & 2020

Study #2108 | October 2006 | \$5500 | 322 pages



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Industry Study with Forecasts to 2010, 2015 & 2020



The primary markets for HEVs will remain the Triad countries, although the rapidly growing Chinese market is also expected to exhibit strong demand for these fuel efficient and environmentally friendly vehicles.

HEVs to quickly penetrate world light vehicle market

Worldwide demand for hybrid-electric vehicles (HEVs) will advance rapidly from 1.6 million units in 2010 to 4.3 million units in 2015 and then to nearly double that number by 2020. These fuel efficient and environmentally friendly vehicles are expected to quickly penetrate the world light vehicle market in response to rising energy demand, which in turn has led to erratic fuel prices; and increased emissions regulations worldwide. Cost disparities between HEVs and conventional light vehicles -- currently estimated at between \$1,000 and \$3,000 -- are expected to decline as production volumes increase.

US market to lead gains

Within the Triad countries (i.e., the US, Western Europe and Japan), the US market is expected to experience the highest levels of demand for HEVs, due to erratic fuel costs, the market's unique Corporate Average Fuel Economy requirements, and the lack of significant demand for light vehicle diesels beyond the full-size truck and sport utility vehicle categories. Despite being less cost-effective than internal combustion engine (ICE) vehicles. HEVs have carved out a niche in the US as a "carbon neutral" enabling technology. This niche in part appears to be animated by the extra cost associated with the vehicles, especially regarding HEVs that are both uniquely



styled and focused on delivering superior fuel economy. Demand for HEVs in Europe, where overall light vehicle diesel demand has already reached 50 percent of the total market, is expected to be significantly lower than in the US. Japan will see increased demand for HEVs going forward, as government agencies and allied associations continue to put tax and other incentives in place to stimulate demand. Elsewhere in the Asia/Pacific region, both China and South Korea are expected to be strong HEV markets, due to government interest in dealing with mobile emissions (China), and because local production is planned (both China and South Korea). Other regions of the world will experience lower HEV demand.

Mild hybrids to ultimately predominate industry

Main HEV categories include full hybrids and mild hybrids. Mild hybrids, which include technologies such as "stop/start" systems and belt-driven hybrid assist systems, are expected ultimately to predominate in the industry, as these systems are much easier to quickly integrate into vehicle lines currently in production, and are significantly less expensive than fully integrated full hybrids. The latest wrinkle in HEV technologies involves so-called "plug-in" HEVs, which can provide even greater fuel economy but face commercialization challenges.

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Sample Profile & Charts

COMPANY PROFILES

Eaton Corporation

Eaton Center 1111 Superior Avenue Cleveland, OH 44114 216-523-5000 http://www.eaton.com

Sales: \$ Geograp tions) U! Asia/Pac Research

Employn.

SAMPLE PROFILE

total and including elimina ica 9%, Europe 18% and

\$287 million (2005)

Key Products: a hybrid-electric powertrain and the development of a hydraulic hybrid diesel urban delivery vehicle

Eaton is a global diversified industrial manufacturer. The Company operates in four segments: Automotive, Fluid Power, Electrical and Truck.

The Company participates in the world hybrid vehicles industry through the Truck segment, which had 2005 sales of \$2.3 billion. The segment consists of Eaton's global operations for the development, production and marketing of components and systems for light-, medium-

and heavy-duty trucks.

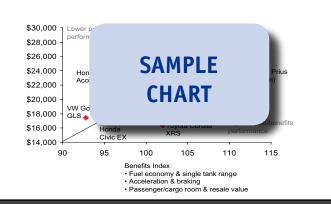
Among Eaton's hybrid vehicle-related activities is the dement of a hybrid pick-up and delivery vehicle in collaboration FedEx Corporation (Memphis, Tennessee), Environmental De (New York, New York) and the New York State Energy Reseau Development Authority (Albany, New York). Through this all partners are developing hybrid pick-up and delivery vehicles

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CHART IV-6 LIGHT VEHICLE POWERPLANT TECHNOLOGY ASSESSMENT (NEXT DECADE) Pure EV **SAMPLE** S-Curve Headroom **CHART** Regulatory Compliance Infrastructure Customer Price/Benefit \bigcirc Industry Focus Probable long-term outcome:

CHART IV-7

PRICE/BENEFITS ANALYSIS -- 2006-2007 MODEL YEARS



Industry Study with Forecasts to 2010, 2015 & 2020



2010 2015 2020

Sample Text, **Table & Forecast**

TABLE VII-5

GERMANY MACROECONOMIC INDICATORS & LIGHT HYBRID-ELECTRIC VEHICLE SUPPLY & DEMAND (000 units)

Item	2000	2005	2010	2015	20
Population (mil persons) GDP (bil 2000\$)	82.2 2074 25230 2				
GDP/capita Households (mil units)	38.1	2.			
vehicle/000 people vehicle/000 households vehicle/mil \$ GDP	43.4 94 1.72		SAM		_
Light Vehicle Demand percent hybrid	3565	Í	IA	BLE	•
Hybrid Light Vehicle Demand	neg				
net exports & sales from inventory					
Hybrid Light Vehicle Production	neg				

WESTERN EUROPE

Germany: Light HEV Supply & Demand

Demand for light hybrid-electric vehicles in Germany w 2015. Demand will be driven by

SAMPLE TEXT

ronmentally friendly vehicles in es. HEVs compete directly with ermany, which continue to make narket share. Furthermore, currer s, including the Toyota PRIUS, some interested buyers. Howev easing numbers of higher-income

as sales of Toyota's upscale GS450H, introduced in mid-2000 to be strong. Toyota also planned to introduce its CAMRY I Germany later in 2006.

The Toyota PRIUS HEV was the first hybrid introduced in Ge many, in February 2001. It was basically the same car as was introduced in the United States. Toyota has since introduced in Germany the second generation PRIUS, which is reportedly seeing strong demand and long waiting lists. Furthermore, the engineering of the second generation PRIUS was honored by the UKIP Media & Events Automotive Magazines, which awarded the vehicle the best new engine category in the International Engine of the Year 2004 competition. The powerplant later won the 1.4 liter to 1.8 liter engine and best fuel economy categories for 2005. That same year, Honda's INSIGHT won the sub-1 liter category.

PRIUS prices have been somewhat high in Germany compared to the prices of comparable diesel and spark ignition vehicles, which has suppressed demand somewhat. Still, there is a healthy "underground" of hybrid enthusiasts in the country, who actively spot cars on the road and share the latest information regarding HEVs on the Internet, which is helping to spread the word in viral marketing terms. Early PRIUS adopters in Germany (and in Western Europe in general) tend to value the

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"Production of light HEVs in Germany is expected to reach 130,000 units in 2015, as local automakers increase their focus on the technology. Production is expected to include smaller efficiency-focused HEVs such as those planned by Volkswagen and PSA Peugeot Citroën, as well as high-priced luxury and performance-oriented vehicles. For example, in January 2005, DaimlerChrysler unveiled a hybrid version of the MERCEDES-BENZ line-topping S-CLASS sedan. Equipped with a ..."

--Section VII, pq. 146

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OTHER STUDIES

Automotive Repair & Maintenance Services

The US automotive repair and maintenance market will grow over 4% per year, based on a robust do-it-for-me (DIFM) industry gaining market share on the do-it-yourself (DIY) segment. DIFM will benefit from an expanding light vehicle park, increasing complexity of light vehicles, and rising new vehicle prices that stimulate used vehicle purchases and repairs. This study analyzes the US automotive repair and maintenance industry to 2010 and 2015 by provider. It also details market share and profiles major firms.

#2146......\$4400

Automotive Aftermarket in North America

The North American automotive aftermarket for light vehicle parts will grow 3.5% annually through 2010. Growth will be driven by an expanding light vehicle park, increasing light vehicle complexity, and rising prices for new cars and light trucks, which stimulate used vehicle purchases. This study analyzes the North American automotive aftermarket parts industry to 2010 and 2015 by product and country. The study also considers market environment factors, estimates company market share and profiles leading players.

#2121......11/2006......\$4400

World Buses

Medium- and Heavy-Duty Truck Aftermarket

Hybrid Electric Vehicles & Competing Automotive Powerplants

US demand for hybrid-electric and diesel internal combustion engines (ICEs) will grow at double-digit annual rates through 2009 from a small base. Mild hybrid ICEs will grow at a triple-digit rates. Fuel cell powerplants, while promising, must overcome significant barriers to reach the mass market. This study analyzes the 17 million unit (mostly spark ignition) US automotive powerplant industry to 2009 and 2014 by type and market. It also evaluates company market share and profiles leading industry players.

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