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Batteries

US Industry Study with Forecasts for **2017 & 2022**

Study #3075 | November 2013 | \$5300 | 318 pages

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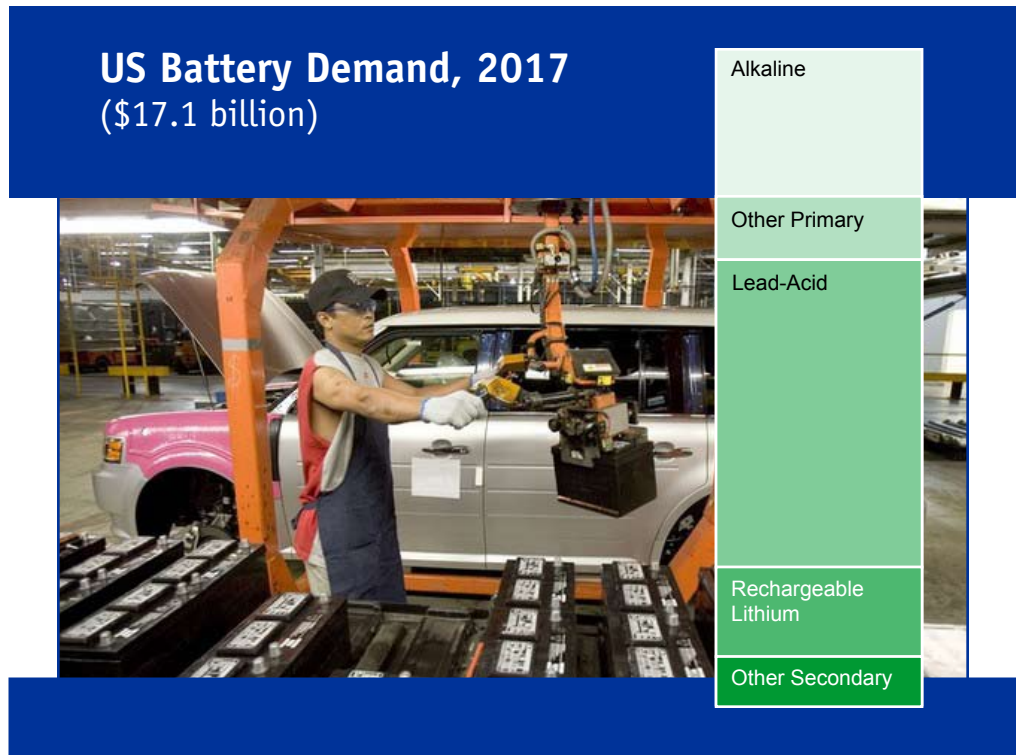
Gains in battery demand will be driven by an upturn in motor vehicle and other durable goods output, and supported by stronger growth in personal consumption expenditures.

US demand to rise 4.2% annually through 2017

US demand for primary and secondary batteries is expected to increase 4.2 percent per year to \$17.1 billion in 2017, accelerating from the pace of the 2007-2012 period. Gains will be driven by an upturn in motor vehicle and other durable goods output, and supported by stronger personal consumption expenditures growth. The motor vehicle market will post the largest increases in dollar terms as motor vehicle production continues to rise following an extended period of decline. Motor vehicles will also be the fastest growing market in percentage terms, with overall battery demand bolstered by expanding production and sales of hybrid/electric vehicles (H/EVs). Backup power supplies will register the next fastest demand gains, boosted by a pickup in nonresidential fixed investment, especially for wireless device transmission towers, and by continuing concerns about the perceived vulnerability of the nation's power grid.

Secondary battery demand to outpace primary types

Secondary battery demand will climb faster than primary battery demand in a continuation of past market trends. The portable device market, which registered the fastest growth of any market from 2007 to 2012, will continue to expand due to the popularity of high-drain devices such as portable computers, which utilize lithium ion and other



advanced battery chemistries. However, increases will be tempered by the saturated nature of demand for products like cell phones and notebook computers. Sales of secondary batteries used in H/EVs will more than double in dollar terms through 2017, although conventional motor vehicles will account for 85 percent of all automotive battery demand. Rechargeable lithium sales will grow at the fastest pace of any secondary battery chemistry due to its popularity in the portable devices market, although lead-acid will contribute significantly more to dollar gains through 2017. Bolstered by increases in motor vehicle production, lead-acid will be responsible for over half of all secondary battery sales advances.

In the primary battery market, consumer segment demand will dwarf other categories, returning to growth after declining between 2007 and 2012. However, secondary batteries will continue to take market share from primary batteries, as high-drain electronic devices and the batteries capable of powering them increase in popularity, restricting consumer primary battery market gains through 2017. Product sales in medical applications will expand the fastest, spurred by increases in the number of people who are 65 years and older, which will lead to higher demand for batteries used to power medical-related devices such as defibrillators, drug pumps, hearing aids, heart monitors, and pacemakers.

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Sample Text, Table & Chart

PRIMARY BATTERY MARKETS

Consumer Market

Demand for primary batteries used in consumer products was valued at \$1.1 billion in 2012, a return to growth after a market to shrink from 2007 to 2011. New battery designs, which enable thinner and smaller designs, which enable them to fit into more devices, support market increases. An increase in the number of consumer devices in use will drive demand for primary batteries. However, price competition from suppliers and increases in average battery life, which reduce the frequency of battery replacement, will limit dollar growth in this market. In addition, the rising energy requirements of many consumer devices will benefit suppliers of secondary batteries at the expense of primary manufacturers.

The consumer primary battery market will continue to be dominated by alkaline batteries, which will account for 83 percent of 2017 product demand. However, primary lithium batteries will post stronger gains in percentage terms because of the superior performance they can provide in many settings. In contrast, demand for zinc-carbon/zinc-chloride cells will continue to decline through 2017, negatively impacted by their poor performance in higher-drain devices, as well as by intense price competition, which will make it difficult for manufacturers to raise prices.

The consumer market was by far the largest application for primary batteries in 2012, accounting for 68 percent of total sales. Consumers use primary batteries to power a broad array of low-, medium-, and high-drain devices. Examples of low- and medium-drain consumer products that utilize primary batteries include calculators, flashlights, garage door openers, handheld games, hearing aids, portable radios, remote controls, smoke detectors, toys, and

109

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TABLE VII-1

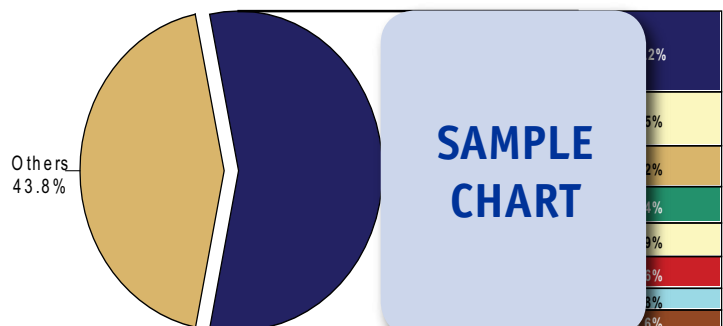
SECONDARY BATTERY SUPPLY & DEMAND (million dollars)

Item	2002	2007	2012	2017	2022
Durable Goods Shipments (bil \$)					
\$ batteries/000\$ durables					
Secondary Battery Demand					
Lead-Acid					
Rechargeable Lithium					
Nickel-Metal Hydride					
Nickel-Cadmium					
Other					
+ net exports					
Secondary Battery Shipments					
price deflator (2005=100)					
Secondary Battery Shpts (mil 2005\$)					

SAMPLE TABLE

CHART IX-1

US BATTERY MARKET SHARE, 2012 (\$13.9 billion)

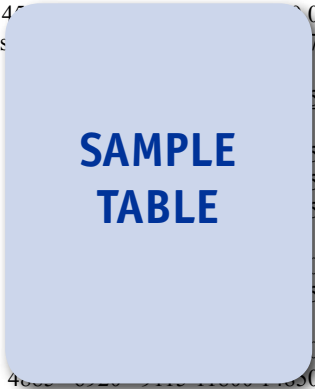


SAMPLE CHART

Sample Profile, Table & Forecast

TABLE VIII-2
MOTOR VEHICLE BATTERY MARKET
 (million dollars)

Item	2002	2007	2012	2017	2022
Motor Vehicles & Parts Shpts (bil \$)	47	50	50	50	50
\$ batteries/000\$ motor vehicles/parts	17	17	17	17	17
Motor Vehicle Battery Demand					
By Application:					
Conventional OEM					
Conventional Replacement					
Hybrid/Electric Vehicle					
By Chemistry:					
Lead-Acid					
All Other Secondary					
% motor vehicles					
Secondary Battery Demand	46	46	46	46	46



COMPANY PROFILES

Trojan Battery Company
 12380 Clark Street
 Santa Fe Springs, CA 90670
 562-236-3000
 http://www.trojanbattery.com

Annual Sales:
 Employment:
 Key Products:

SAMPLE PROFILE

Trojan Battery, a privately held company, is a worldwide leader in deep-cycle battery technology. The Company produces specialty deep cycle lead-acid batteries for starting, lighting, and ignition applications.

The Company's deep cycle batteries have such features as Trojan Battery's proprietary MAXGUARD T2 multi-rib separator and ALPHA PASTE paste formulation, which are used in combination to increase battery life, extend runtime, and decrease maintenance. In addition, the Company makes flooded deep-cycle batteries with T2 technology that is designed to provide greater maximum sustained performance and increased total energy. Trojan Battery's deep-cycle batteries are suitable for use in golf and utility vehicles, marine vessels, aerial work platforms, floor machines, recreational vehicles, and renewable energy systems.

Specific battery products made by the Company include DEEP-CYCLE GEL, TRANSPOWER ST1000, AC SERIES, and PLUS SERIES types. DEEP-CYCLE GEL maintenance-free batteries can be utilized in a broad range of applications and encompass 6- and 12-volt (V) models. Trojan Battery's TRANSPOWER ST1000 heavy duty

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STUDY COVERAGE

This Freedonia study, **Batteries**, offers historical demand data for 2002, 2007 and 2012, and forecasts for 2017 and 2022 by product and market. The study also considers market environment factors, reviews battery technology, evaluates company market share and profiles 37 industry players, including Johnson Controls, Exide Technologies and Energizer.

OTHER STUDIES

Battery & Fuel Cell Materials

This study analyzes the US battery and fuel cell material industry. It presents historical demand data for 2002, 2007 and 2012, and forecasts for 2017 and 2022 by type (e.g., metals, chemicals, polymers, carbon/graphite, ceramics), function (e.g., active materials, current collectors, containers, performance additives, separators, electrolytes, catalysts), and application. The study also considers market environment factors, details industry structure, evaluates company market share and profiles industry players.
 #3115January 2014 \$5100

World Electric Motors

World demand for electric motors is projected to increase 6.5 percent per year to \$122.5 billion in 2017. The Asia/Pacific region will be the largest source of market growth through 2017. Demand for AC motors will outpace DC types. Motor vehicles and heating and cooling equipment will be the fastest growing markets. This study analyzes the \$89.4 billion world electric motor industry, with forecasts for 2017 and 2022 by product, market, world region, and for 30 countries. The study also evaluates company market share and profiles industry players.
 #3055October 2013 \$6100

Batteries in China

Demand for batteries in China is forecast to increase 13.0 percent annually to 259 billion yuan in 2016. Secondary batteries will outpace primary types, led by the fast-growing rechargeable lithium batteries segment. The primary battery market will remain dominant, supported by the supplantation of zinc-carbon/chloride batteries by alkaline types. This study analyzes the 141 billion yuan battery industry in China, with forecasts for 2016 and 2021 by type and market. The study also evaluates company market share and profiles industry participants.
 #3030June 2013 \$5300

Electric Motors

US demand for electric motors will increase at an accelerated rate of 4.6 percent annually through 2017 to \$14.4 billion. AC motors will remain the largest segment while hermetic motors will grow the fastest. The heating and cooling equipment market will provide the best growth opportunities. Integral horsepower motors will outpace fractional horsepower types. This study analyzes the \$11.5 billion US electric motors industry, with forecasts for 2017 and 2022 by type and market. The study also evaluates company market share and profiles industry players.
 #3007March 2013..... \$4900

World Batteries

World demand for batteries is forecast to rise 8.1 percent annually to \$132 billion in 2016. China will remain the largest market while India and South Korea will grow the fastest. Secondary batteries will outpace primary types, the former driven by uses in mobile phones, portable computers, and personal entertainment devices. This study analyzes the \$89.4 billion world battery industry, with forecasts for 2016 and 2021 by product, market, world region and for 32 major countries. The study also evaluates company market share and profiles industry participants.
 #2939October 2012 \$6500

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