

The Automobile Industry Flow in U.S.

Automobile Culture in America

In the early 1900s, when the automobiles first made their bumpy arrival on the American street scene, they were considered fussy toys for the rich and famous. The extremely high cost and impracticality made them inaccessible for the average Americans, while virtually all of them wanted to own one. Henry Ford was the first man to understand that and his Model T brought automobiles to middle class citizens and was the beginning of America's love with cars.

The post-war boom in the 1950s produced a generation of teenagers with enough income to buy their own cars ^[1]. These cars became so much more than only modes of transportation. They became the reflection of a lifestyle. Ever since, car culture has been a major lifestyle in America.

Current Flow in Automobile Industry in U.S.

As the biggest industry in U.S. manufacture field, the automobile industry contributes nearly 260 billion dollars each year to the Nation's GDP. Including the retailers and companies providing automobile parts and accessories, the whole automobile industry in U.S. has a total number 2.5 million of employees, while one person in seven in the States works relatively to the automobile industry ^[2].

The total number of automobiles in U.S. from 2000 to 2007 is keeping steadily of 200 million, nearly one per adult, compared with the world average 0.17 per adult. The average traveled mileage of a car is 192 hundred kilometers per year, with the petrol consumption of 2,240 liters and the expenditure of more than 800 hundred dollars ^[3]. From January to October, 2007, there are 13 million automobiles sold out in the U.S. market ^[4], at the same time about 11 million old cars fell into disuse ^[5], which were finally thrown into scrap heap.

Retired car parts have produced a substantial amount of environmental waste. Waste such as rust removers, carburetor cleaners, degreasers, parts cleaners, paint thinners, motor oil and automotive batteries all contain substances classified by the government as hazardous waste. The hazardous

substances in it may endanger public health and the environment. While scrap collection is a free and simple means of disposal, it isn't the most efficient method. Nowadays, any company that ships 220 pounds of hazardous waste off its property must fill out Uniform Hazardous Waste Manifests, completing with an EPA identification number. Add this to the rising cost of supplies, from packing materials to scrap heap, the possibility of recycling these materials becomes increasingly attractive ^[6].

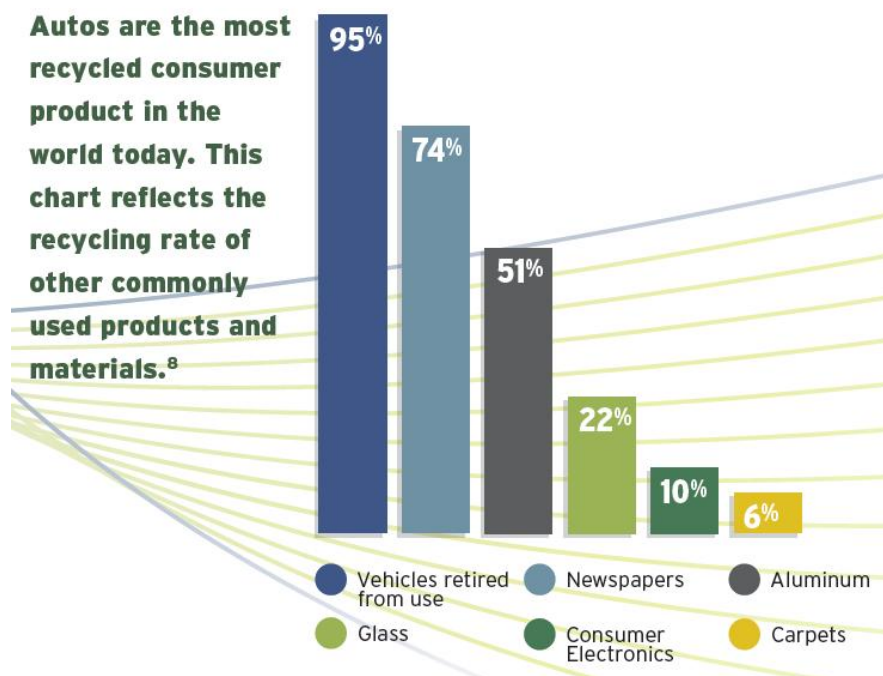


The Recycle and Remanufacture Industry of Automobiles

Continually, automakers are looking for creative ways to reduce waste and increase recycling opportunities throughout the entire process of manufacturing automobiles, from the design stage to facilities management. At the same time, auto dismantlers remove reusable parts from cars for reuse on others. Examples of reusable parts include engines, transmissions, doors and bumpers. Parts that can be remanufactured or rebuilt are also removed, including alternators, water pumps, and clutches ^[7]. Rebuilt parts are disassembled and cleaned, and components are replaced if necessary.

For more than 75 years, automobile recyclers have been providing employment, consumer service and environmental conservation worldwide ^[8]. In the United States, the automotive recycling industry is a vital, market-driven industry. In fact, automobile recycling is the 16th largest industry in the United States, estimated to be a \$25 billion per year industry ^[9]. There are approximately 7,000 vehicle-recycling operations around the country ^[10]. Recycling autos provides enough steel to produce almost 13 million new automobiles, while generating jobs for 46,000 people ^[11]. The

automobile is the most recycled consumer product in the world today^[12]. In fact, 95 percent of retired autos are processed for recycling each year^[13]. Nationwide, about 26 automobiles are recycled every minute, according to the American Iron and Steel Institute.



Now let's talk about the remanufacture industry. Remanufacturing is often referred to as the "ultimate form of recycling", because it recaptures the value-added cost of labor, energy and raw materials. Simply stated, remanufacturing is the process of disassembly of products during which time parts are cleaned, repaired or replaced then reassembled to required working condition^[14].

The remanufacture recovers over 90% of the original solvent, which is as good as new. At least 84% of a car's material content is recycled^[15]. Just two examples of recycled products are carpets and tires. Used carpet can become air cleaner assemblies and engine fan modules. Manufacturers safely build new tires with 10% recycled tire rubber material. Recycled tires also become brake pedals or floor mats. The removed metal, roughly 75% of an automobile, is then mixed with new metal before returning to manufacturers for reuse. According to the American Iron and Steel Institute (AISI), in 2004 over 14.5 million tons of steel was recycled and reused from end-of-life automobiles^[16]. The metal removed is reused for such things as a new vehicle's chassis and engine. Remanufactures lower the cost of the corresponding replacement part, and become the most cost-effective way to get products to market.

Auto dismantlers also recycle fluids comprise engine oil, coolant, refrigerant and gasoline. Recyclable materials are typically batteries, catalytic converters, tires and plastics. These materials are recycled into a variety of new consumer products. Recycling plastics from an end-of-life automobile is a growing part of the recycling industry. Salvaged plastic bumpers become new bumper reinforcements in the recycling process for Ford Motor Company. Toyota has recovered and recycled bumpers into new bumpers for new cars. Mazda collects damaged bumpers at which they are replaced with new ones, and reuses the bumpers in the production of component parts for cars. The automobile remanufacture industry grows into a huge industry with \$25 billion a year, already being a major force in this economy.

Environmental Impacts and Benefits of Remanufacturing

Inherently, automobile remanufacturing has positive environmental impacts. Each year, approximately 95% of automobiles retired from use are processed for recycling^[17]. The energy savings by remanufacturing in U.S. per year equals the electricity generated by 5 nuclear power plants or 85 million barrels of oil that would have been used in the manufacturing of new or replacement parts^[18]. The raw materials saved by remanufacturing worldwide in a year would fill 155,000 railroad cars forming a train 1,100 miles long^[19]. Because products that are remanufactured are kept out of the waste stream longer, landfill space is preserved and air pollution is reduced from products that would have had to be resmelted otherwise reprocessed. Extending products' life span through remanufacturing is the key to conserve the earth's natural resources.

Major Issues Affecting Automobile Remanufacturing

There are numerous legal, regulatory, and other issues which affect remanufactories. For example the intellectual property and anti-trust matters, the federal, state and local government recycled-content procurement procedures, and also the government economic incentives. There is an organization called Reman Central playing the watchdog role for the remanufacturing industry, as well as its representative to numerous groups.

Cutting down on waste equals money saved. Whether you purchase bulk supplies, recycle on site or reuse pallets and shipping materials, you're on the right track. The companies who've done their research and invested in recycling technologies and processes are the ones that will continue to prosper and contribute to the automobile recycling industry.

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