

Recycling

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Recycling is the process of converting waste materials into new materials and objects. This concept often includes the recovery of energy from waste materials. The recyclability of a material depends on its ability to reacquire the properties it had in its original state. It is an alternative to "conventional" waste disposal that can save material and help lower greenhouse gas emissions. It can also prevent the waste of potentially useful materials and reduce the consumption of fresh raw materials, reducing energy use, air pollution (from incineration) and water pollution (from landfilling). Recycling is a key component of modern waste reduction and represents the third step in the "Reduce, Reuse, and Recycle" waste hierarchy, contributing to environmental sustainability and resource conservation. It promotes environmental sustainability by removing raw material input and redirecting waste output in the economic system. There are some ISO standards related to recycling, such as ISO 15270:2008 for plastics waste and ISO 14001:2015 for environmental management control of recycling practice. Recyclable materials include many kinds of glass, paper, cardboard, metal, plastic, tires, textiles, batteries, and electronics. The composting and other reuse of biodegradable waste—such as food and garden waste—is also a form of recycling. Materials for recycling are either delivered to a household recycling center or picked up from curbside bins, then sorted, cleaned, and reprocessed into new materials for manufacturing new products. In ideal implementations, recycling a material produces a fresh supply of the same material—for example, used office paper would be converted into new office paper, and used polystyrene foam into new polystyrene. Some types of materials, such as metal cans, can be remanufactured repeatedly without losing their purity. With other materials, this is often difficult or too expensive (compared with producing the same product from raw materials or other sources), so "recycling" of many products and materials involves their reuse in producing different materials (for example, paperboard). Another form of recycling is the salvage of constituent materials from complex products, due to either their intrinsic value (such as lead from car batteries and gold from printed circuit boards), or their hazardous nature (e.g. removal and reuse of mercury from thermometers and thermostats).