

Construction

Plastics are used in construction to help maximize energy efficiency, durability and performance of homes and buildings. A one-year study found that the use of plastic building and construction materials saved 467.2 trillion Btu of energy over alternative construction materials. Over the course of a year, that's enough energy to meet the average energy needs of 4.6 million U.S. households.⁶

Energy Efficiency

Plastics require less energy to produce than glass, paper, wood, and metal. Replacing plastics with other materials would result in a 57% increase in energy use and a 61% increase in greenhouse gas emissions.⁷



DID YOU KNOW?

Producing plastic packaging requires less energy than alternative materials and weighs considerably less. For example, Folgers saw a 40% reduction in the weight of its coffee can after switching from steel to plastics.⁸

Preserving Food

Food waste is responsible for significant greenhouse gas emissions, and it is estimated that one third of all food produced for human consumption is lost or wasted every year.⁹ It is critically important that we utilize the durable and versatile characteristics of plastics to protect food from damage and extend its shelf life. Plastic packaging keeps what we eat clean and fresh long after our groceries are brought home from the store, which helps to reduce food waste. [Using 1.5g of plastic film to wrap a cucumber can extend its shelf life from three to 14 days.](#)

Reusable and Recyclable

The versatility of plastics and their ability to be recycled and repurposed make them the sustainable choice for many applications. We believe plastics should not end up in the environment and we're working to create a circular economy for plastics, where every piece of post-use plastic is recycled, reused or repurposed. Chevron Phillips Chemical is proud to pursue innovative technologies and engage in solutions that reduce plastic waste and increase recyclability worldwide.

¹ N. Paxton, M. Allenby, P. Lewis, M. Woodruff, Biomedical Applications of Polyethylene, European Polymer Journal, 2019

² S. Kurtz, UHMWPE Biomaterials Handbook: Ultra High Molecular Weight Polyethylene in Total Joint Replacement and Medical Devices, Elsevier Academic Press, 2015

³ Plastics Make it Possible, Hudson the Railroad Puppy Gets a New Plastic Paw

⁴ American Chemistry Council, Plastic Resins in the United States, 2013

⁵ Plastics Pipe Institute, A Greener Infrastructure

⁶ Franklin Associates, Ltd., U.S. DOE and U.S. Census Bureau

⁷ H. Pilz, B. Brandt, R. Fehring, The Impact of Plastics on Life Cycle Energy Consumption and Greenhouse Gas Emissions in Europe, 2010

⁸ Healthcare Packaging, P&G Switches to Plastics for Folgers, 2003

⁹ N. Voulvoulis, R. Kirkman, T. Giakoumis, P. Metivier, C. Kyle and V. Midgley, Examining Material Evidence. The Carbon Fingerprint, Imperial College (London), 2020