

## Why Recycle?

Answer: You Can Make a Difference!

Many individuals feel they can't have an impact on environmental problems due to their complexity. Issues like global warming, hazardous waste, loss of rain forests, endangered species, acid rain, the ozone layer and our waste disposal crisis can feel huge and out of our control. But there's good news, there are some things that individuals can control. Our waste reduction and recycling efforts can make a difference - especially within our state.

### Recycling Saves Our Environment

Massachusetts recycling provides industry with an environmentally preferable source of materials: Most people know that recycling plays an important role in managing the garbage generated in homes and businesses, and that it reduces the reliance on landfills and incinerators. But recycling is far more than a local material management strategy; it is also an important strategy for reducing the environmental impacts of industrial production. Supplying industry with recycled materials rather than virgin resources extracted from forests and mines is environmentally preferable because it saves energy, reduces emissions of greenhouse gases, and other dangerous air and water pollutants, and because it conserves scarce natural resources.

In 2004, Massachusetts's municipal and commercial recycling programs collected and supplied 6,715,671 tons of scrap commodities such as paper, glass, metals, plastics, computers, and construction & demolition (C&D) materials for use in the production of new products.

Greenhouse gas emissions are reduced by Massachusetts recycling: By reducing the amount of energy used by industry, recycling also reduces greenhouse gas emissions and helps stem the dangers of global climate change. This reduction occurs because much of the energy used in industrial processes and in transportation involves burning fossil fuels like gasoline, diesel and coal - the most important sources of carbon and other greenhouse gas emissions into the environment.

Massachusetts recycling reduced greenhouse gas emissions by 2,073,814 metric tons of carbon equivalents (MTCE) in 2004. This is equivalent to approximately 104% of all industrial MTCE emissions generated from fossil fuel combustion in Massachusetts and 9% of greenhouse gas emissions, such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxides (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

Curbside recycling alone accounted for a reduction in greenhouse gas emissions of 1,093,959 MTCE in 2004.

### Recycling Saves Energy

Massachusetts recycling saves energy: Energy savings may be the most important environmental benefit of recycling, because using energy requires the consumption of scarce fossil fuels and involves emissions of numerous air and water pollutants. The steps in supplying materials to industry (including collection, processing and transportation) typically use

less energy than the steps in supplying virgin materials to industry (including extraction, refinement, transportation and processing). But most energy savings associated with recycling accrue at least once.

It takes 95% less energy to recycle aluminum than it does to make it from raw materials. Making recycled steel saves 60%, recycled newspaper 40%, recycled plastic 70%, and recycled glass 40%.<sup>2</sup>

Every pound of steel recycled saves 5,450 BTUs of energy, enough to light a 60-watt bulb for over 26 hours. Recycling just one can saves enough electricity to light a 100-watt bulb for 3.5 hours.<sup>3</sup>

In 2004, Massachusetts's recycling saved a total of 85,146,285 Million BTUs of energy, equal to 32% of all energy used by industry in Massachusetts. This is equivalent to 685,347,637 gallons of gasoline. It represents the amount of energy that would be required to power 820,292 homes for one year in Massachusetts.

Curbside recycling alone saved 28,606,312 Million BTUs of energy in 2004.

#### Recycling Saves Natural Resources

Massachusetts's recycling conserves natural resources: Recycling is an important strategy in conserving the world's scarce natural resources. Recycling reduces the need for landfills and other disposal facilities, thereby allowing local lands to be used in more environmentally preferable ways. And, by substituting scrap materials for the use of trees, metal ores, minerals, oil and other virgin materials, recycling reduces the pressure to expand forestry and mining production.

When one ton of steel is recycled, 2,500 pounds of iron ore, 1,400 pounds of coal and 120 pounds of limestone are conserved.<sup>2</sup>

By recycling 1,205,311 tons of scrap metal and glass in 2004, Massachusetts's recycling efforts reduced the need for virgin materials, including 130,171 tons of limestone, 946,709 tons of iron ore, 530,157 tons of coal, 289,861 tons of sand, 91,418 tons of soda ash, and 35,675 tons of feldspar.

Recycling 1,098,776 tons of all types of paper saved 3,625,961 cubic yards of landfill space.