

Markets (cont.)

Recycling scrap steel to make new steel has been practised for a long time. Half of the resources used in the steel making process is scrap. The major change has been in the source of the recyclable material.

Traditionally, 50% of the scrap used was home scrap, generated in the mills themselves. Improvements in steel making technology have cut this percentage nearly in half. To compensate for this reduction, increasing amounts of used steel is purchased from outside sources. The majority of this metal is post consumer; items that have been bought, used and recycled. To illustrate the importance of post consumer steel consider this: if all the steel produced was made into cans, one-fifth of these containers would be made from steel that the public has diverted.

Scrap steel is first deposited into a furnace for melting. Electric, basic oxygen, open hearth and blast furnaces are all used to liquefy the steel: the type of furnace used depends upon the finished product desired. Scrap placed in an electric or basic oxygen furnace can produce carbon steel. When added to a blast furnace, recycled steel replaces a portion of the iron ore used to make pig iron. Regardless of the type of furnace, after heating, the molten metal is sent for processing. Again the method and extent of processing is directly related to the end product required. Upon completing the processing stage, the new steel is ready for market.

Recycled steel can become anything from raw materials for more steel (pig iron) to ready-to-use articles such as "I" beams, steel sheets, tin cans and automobiles.

Originally, aluminium was prized for its strength, light weight and ability to resist corrosion. Today, it is seen as a chance to save vast amounts of energy. How, you might ask? Aluminium is produced from an element called *bauxite*. Facilities that convert the element into the metal demand so much power, that some plants require their own hydro-electric generating system. This is not where the energy saving occurs. The savings come when existing aluminium is used as a raw material.

Scrap aluminium is divided into two groups: new scrap and old scrap. New scrap is generated by fabricators making consumer or industrial products. It includes trimmings, chips, and turnings from machine operations and residue such as *dross*. Old scrap is post consumer products.

Recycling aluminium uses just 5% of the energy needed to make the metal from virgin resources. This is a 95% reduction in energy usage. The energy saved by recycling the aluminium gathered through Ontario's Blue Box program could power 70,000 television sets continuously for one year.

After being separated from steel and other metals, aluminium products are shredded, delacquered and melted down. Some facilities take the *dross* produced in the furnaces and recycle it as well. Removing the aluminium in *dross* can raise *metal recovery* from 75% to 96%. Like steel, the final use of the aluminium dictates to what extent it is further pressed. It can be sold in liquid form, made into ingots ranging in size from 16 kg to a tonne or poured into moulds to make finished products. Engine blocks, valve covers, wheels and beverage containers are made from recycled aluminium.

Most other metals are not found in sufficient quantities to be collected from individual homes. However, business and industry may produce enough scrap copper or iron, for example, to justify recycling.