



Financial Literacy: The Aluminum Mystery Solved

Aluminum-bearing ore is not mined in Canada; it is only refined here. The raw material is shipped from around the world to Canada's refineries. The refined metal is likewise exported globally. The location of aluminum refineries is primarily determined by access to a consistent and inexpensive electricity supply, usually hydroelectric, and proximity to deep-water shipping lanes. All but one of Canada's aluminum refineries are found in Quebec; the other is in Kitimat, British Columbia and is accessible to Pacific shipping lanes.

Pure aluminum is quite soft and lacking in strength. Aluminum is made stronger by adding small amounts of [silicon](#) and [iron](#) (less than 1%). Of all the metals, only iron is used more widely than aluminum.

Aluminum is primarily used to produce pistons, engine and body parts for cars, beverage cans, doors, siding and aluminum foil. It may also be used as sheet metal, aluminum plate and foil, rods, bars and wire, aircraft components, windows and door frames. The leading users of aluminum include the container and packaging industry, the transportation industry, and the building and construction industry.

Electric power is vital to the aluminum industry's survival. It is involved in various phases of production and represents approximately 35% of a smelter's operating costs. Therefore smelter construction, expansion or upgrading projects depend greatly on the availability of large volumes of electricity at prices that are both cheap and available. The ten aluminum smelters in Quebec use approximately 5000 megawatts of electricity.

How many watts are in a kilowatt? _____

How many watts are in a megawatt? _____

One megawatt is enough electricity to power more than 300 000 - 15 watt light bulbs!

If the electricity used to produce 24 new aluminum cans per month had come from coal-fired electricity, 10 kilograms of Carbon Dioxide would have been released into the atmosphere. Can you do anything to reduce this carbon footprint? Tell a friend or adult that we could save ½ a pop can of gasoline for every pop can made from raw materials. Were you able to convince them to recycle? How would this affect our

It's estimated that over 49 billion aluminum cans are landfilled in North America every year. That's the energy equivalent of wasting 54 million barrels of oil. North American daily consumption of oil is roughly 27 million barrels, so we'd save about the same amount of energy that is used in oil-based products (gasoline, diesel, airline fuel, heating oil, etc.) in a typical 48-hour period - two days! If that electricity weren't used to manufacture replacement aluminum to make replacement cans, it could be used to avoid burning coal worth about 45 million tons of Carbon Dioxide emissions.

1 kwh of electricity generated from coal uses ½ a kilogram of coal and produces over a kilogram of Carbon Dioxide.

Source: <http://www.green-energy-efficient-homes.com/energy-saving-facts.html>