



Get the lead out!

The benefits of phasing out leaded fuel far outweigh the costs of continued use. The question is: how do we wean ourselves off this deadly pollutant? A new campaign may provide some answers.

In 1921, Thomas Midgley Jr. discovered that adding tetraethyl lead to gasoline would reduce the knocking and pinging in internal combustion engines. By 1923 gasoline with lead additives was available on the market. With the passage in the United States of the Clean Air Act in 1970, the health risk that leaded gasoline posed was becoming more widely known. The manufacturers of the lead additive soon predicted the decrease of leaded fuel sales in US markets and began to look to increase sales in foreign markets. By 1979, foreign sales of lead additives were greater in foreign markets than in the US, and today you can't buy leaded petrol in the US.

The negative effects of leaded gasoline on public health are unquestioned. In developing countries, vehicle emissions in cities account for up to 90 percent of airborne lead. The World Health Organisation (WHO) estimates that there are currently 15-18 million children in developing countries who suffer from permanent brain damage due to lead poisoning.

Lead adversely affects the neurological system, the kidneys and the cardiovascular system. One principle effect associated with elevated blood-lead levels is a decrease in intelligence quotient (IQ) levels. Lead poisoning is also known to cause retarded mental and physical development and reduced attention spans in children. In adults, lead blood poisoning is linked to increased blood pressure, hypertension and higher risk of cardiovascular disease. Excessive exposure to lead was responsible for 200,000 to 500,000 cases of hypertension, resulting in roughly 400 deaths per year in Bangkok, Thailand in the late 1980s. The WHO has described leaded gasoline based poisoning to be one of the world's most serious environmental health problems.

And yet the costs of phasing out leaded fuel are extremely low. The World Bank, UNEP and OECD member countries estimate the cost of conversion from leaded to unleaded fuels at between 80 Kenya cents and 1.6 shillings (US \$0.01 - \$0.02) per litre. The World Bank has stated that countries can expect to save five to ten times the cost of converting to unleaded gasoline through the resulting health and economic savings. To support this claim, the Bank has cited the example of the United States, which had saved \$10 for every \$1 invested as a result of its phase-out efforts.

There are a variety of other health and non-health related benefits to phasing out leaded gasoline. Catalytic converters, which control other significant vehicle pollutants such as carbon monoxide and nitrogen oxide, are now installed in over 85% of new gasoline-fueled cars manufactured around the world, but cannot be used with leaded gasoline, since lead renders the catalyst ineffective. Various studies have documented that the use of unleaded gasoline increases the lifespan of exhaust systems and reduces engine wear. Unleaded gasoline increases fuel efficiency as well, due to its higher energy content.

While most of the world has converted to unleaded fuel, most of sub-Saharan Africa and some Middle Eastern countries continue to rely on leaded gasoline. The experience of one country that provides an exception - Egypt - is telling of how critical it is that these regions undergo a conversion to unleaded fuels. A study of



the health effects of leaded petroleum in Egypt showed that lead in the air was causing 6,500 to 11,600 heart attacks per year, 800 to 1,400 strokes, 6,300 to 11,100 premature adult deaths, and around 820 infant deaths. In addition, lead in the atmosphere was leading to an average IQ loss for children of around 4.25 points. Two-thirds of the lead in the air was from vehicle emissions, and one-third from smelters. In response to these horrifying statistics, Egypt converted completely to unleaded fuels within Cairo, and reduced leaded fuel use by 85% nationwide, within only six months.

In June, 2002, a campaign involving governments, civil society and the private sector was launched following a workshop held at UNEP headquarters in Nairobi. Its main objective is a complete transition to unleaded fuel in the region within three years, reduction of lead in urban air in the region to half of current levels within two years, and 100% increased public awareness of the dangers of leaded fuel and the benefits of unleaded fuel within one year.

There is good news from Kenya's oil industry. Starting in February 2002, Shell/BP introduced unleaded fuel to the Kenyan market. They were soon followed by Caltex, Mobil and Total. Now collectively selling up to 2,200 cubic metres of unleaded fuel monthly, they are pushing the government to require that all imported refined fuel should be unleaded. However, industry officials insist that without a major upgrade of the refinery, costing an estimated \$US100 million, it will not be possible to produce unleaded fuel locally.

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