

# Questions & Answers About Incineration



**Question:** Isn't incineration the solution to the solid waste crisis?

**Answer:** No. Incineration is not the long-term solution to the solid waste crisis, because it wastes (not recovers) resources. Simply removing and recycling the glass (not to mention the aluminum, office paper, cardboard etc.) from one ton of garbage saves more energy than is recovered by the burning the rest of the ton.

**Question:** Won't incinerators remove the need for landfills?

**Answer:** No. After incineration, up to 40 percent of waste remains, which will require landfilling. Incineration actually perpetuates the use of landfills because of the large quantities of leftover ash produced by incinerators. In addition, this ash is very toxic, containing concentrated amounts of heavy metals and dioxins, which when buried will eventually leach into the soil, thus polluting the groundwater.

**Question:** If incineration will not replace landfills, won't it stretch available landfill space by almost tenfold because it reduces waste volumes by 90 percent?

**Answer:** No. Often, decision-makers are misled by industry claims that there is a 90 percent volume reduction when garbage is burned in an incinerator and conclude that their dwindling landfill space will stretch 10 times as far. This is not the case. The 90 percent figure refers to a comparison between the waste entering the incinerator and the ash leaving it. It does not include waste that cannot be burned (building debris, old refrigerators, etc.) or that is missed when the facility is closed for repairs, and does not take account of compaction in the landfill. When such factors are taken into account, an incinerator saves somewhere between 60 and 70 per cent of the volume; the landfill space is only stretched 2.5 to three times, not the tenfold increase sometimes implied by promoters of incineration.

**Question:** Isn't it reasonable to require that all hospital waste be incinerated to protect public health against infectious diseases?

**Answer:** No. Only 10% or less of a typical hospital's waste stream is infectious, and that can be sterilized with heat or microwaves. The remaining waste is not infectious. The paper, plastic, food waste and other hospital waste are similar to the same waste coming from hotels, offices or restaurants, since hospitals serve all of these functions.

## Questions & Answers About Incineration, continued

**Question:** Can't communities invest in both incineration and recycling operations?

**Answer:** It is very difficult. Once a community embarks on building an incinerator, it soaks up all the available cash, and little is left over for an effective recycling and composting program. Incinerators with state-of-the-art pollution control equipment are formidably expensive. A 2000 ton per day facility which began operations near Amsterdam in the Netherlands in 1995 cost US\$600 million. Once that investment is made, local authorities don't have the money to invest in waste reduction.

**Question:** Doesn't an investment in an incinerator plant pay off in terms of new jobs created in the community?

**Answer:** No. Very few jobs are created in return for this huge economic investment. Most of the jobs are temporary ones created during the building of the plant. A large incinerator may employ about 100 workers. On the other hand, if the community puts its efforts into source separation, reuse and repair, recycling and composting, many more jobs are created, both in the actual handling of the waste and in the secondary industries which utilize the recovered material.

Also, most of the money invested in the incinerator leaves the community. The huge engineering firms that build incinerators are seldom located in the host community and thus most of the money invested leaves the community. On the other hand, money invested in the low-tech alternatives stays in the community creating local jobs and stimulating other forms of community development.

**Question:** Can't modern incinerators be used to generate enough electricity to sell which can offset its operating costs?

**Answer:** No. The claim that modern trash incinerator is a waste-to-energy facility makes for good public relations, but the reality is that they produce very little energy. And energy production certainly does not justify the huge costs involved in building them. All of Japan's 193 waste-to-energy incinerators combined produce less energy than one nuclear power station.

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## Questions & Answers About Incineration, continued

**Question:** What about the state-of-the-art incinerators with pollution control equipment? Won't that eliminate pollution concerns?

**Answer:** Pollution control equipment can remove some, but not all, of the heavy metals from the stack gases. But the metals do not disappear; they are merely transferred from the air into the ash, which then has to be landfilled. So the cleaner the air emissions, the more toxic the ash. Also, pollution control technologies for different pollutants are often incompatible. Scrubbers designed to filter out particulates and heavy metals cool the exhaust gas to the ideal range for dioxin formation. So decreasing the emission of one pollutant increases the emissions of others. And no pollution control device can eliminate dioxin or heavy metal emissions completely.

Also, pollution control equipment often does not perform as it should. It is very costly to maintain equipment 24 hours a day, 365 days a year. The U.S. EPA reported that a modern incinerator in Indianapolis, Indiana exceeded its permitted pollutant limits more than 6000 times in less than two years.

**Question:** Doesn't incineration concentrate the toxics into a dense powdery ash that is easy to dispose of?

**Answer:** The leftover ash can be extremely toxic, containing concentrated amounts of lead and cadmium, as well as dioxin and furans. Disposal of toxic ash in an environmentally sound manner is problematic and expensive. The average cost in the Midwest U.S. for disposing of a ton of hazardous waste is \$210, compared to \$23 for ordinary waste. Some experts recommend burying this ash in a landfill equipped with a plastic liner to prevent leaching into groundwater. But all landfill liners eventually leak. According to the U.S. EPA, liners may last 10 or 20 years, but not forever, so groundwater is threatened by toxic incinerator ash.

**Question:** Don't cement kilns destroy hazardous wastes as effectively as other commercial treatment facilities?

**Answer:** No. Cement kilns are designed to make cement and are not designed to dispose of waste. In the U.S., commercial hazardous incineration is expensive because these facilities may cost \$20-\$50 million to build, require 100-200 employees to operate, and must have, by law, sophisticated air pollution control devices. By contrast, cement kilns might spend about \$1 million for add-on equipment to existing facilities to burn hazardous waste and require far fewer employees. According to a study by the U.S. Center for the Biology of Natural Systems, emissions of dioxins are eight times higher out of cement kilns burning hazardous waste than from those that do not burn it.

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