

Waste Equals Wealth

As societies grow wealthier, they create more and more rubbish. Each year we throw away billions of tons of solid waste - a major portion of which is hazardous. Add to this the million tons of agricultural waste, and it is clear that treating and disposing of all this material - without harming the environment - becomes a major headache.

Most of what we throw away is either burnt in incinerators, or dumped into landfill sites. But both these methods create environmental damages. Land filling not only takes up more and more valuable land space, it also causes air, water and soil pollution, discharging carbon dioxide (CO2) and methane (CH4) into the atmosphere and chemicals and pesticides into the earth and groundwater. This, in turn, is harmful to human health, as well as to plants and animals.

More than 45,000 tons of waste is produced in Iran daily, 30 percent of which is solid waste.

By 2020, it is estimated that our waste generation would double. Obviously

towards the recovery of resources from waste, disposal is still the most common form of managing waste.

The government should aim for a significant cut in the amount of rubbish generated, through new waste prevention initiatives, better use of resources, and encouraging a shift to more sustainable consumption patterns.

Turning Point

Three basic drivers of change are turning waste and waste management into a dynamic, fast changing, international economic sector. The drivers of a change are:

- Growing concern about the hazards of waste disposal

- Broader environmental concerns, especially global warming and resource depletion

- Economic opportunities created by new waste

Old industrial sites, abandoned mines and landfills contain large amounts of hazardous waste that threatens the environment

that is widely dispersed across collection, processing, materials technology and product design.

Intensive recycling requires householders to separate their waste into three main streams: organics, dry recyclables and residual waste, supplemented by periodic collections of a fourth stream of durable goods and hazardous items. Recycling needs skilled frontline collectors, transformed management information systems and multiple bins.

The second driver of change is concern about global warming and resource depletion. There is now widespread recognition that this level of consumption, along with the energy required and the greenhouse gases produced by it is unsustainable.

Waste is still treated as waste, rather than as a

Modern Approach

The approach of most advanced countries to waste management is based on three principles:

1. Waste prevention: This is a key factor in any waste management strategy. If we can reduce the amount of waste generated in the first place and reduce its hazardousness by reducing the presence of dangerous substances in products, then disposing of it will automatically become simpler. Waste prevention is closely linked with improving manufacturing methods and influencing consumers to demand greener products and less packaging.

2. Recycling and reuse: If waste cannot be prevented, as many of the materials as possible should be recovered, preferably by recycling.

The European Commission has defined several specific 'waste streams' for priority attention, the aim being to reduce their overall environment impact. This includes packaging waste, end-of-life vehicles, batteries and electric and electronic waste. EU

packaging waste.

3. Improving final disposal and monitoring: Where possible, waste that cannot be recycled or reused should be safely incinerated, with landfills only used as a last resort. Both these methods need close monitoring because of their potential for causing severe environmental damage. The EU has recently approved a directive that sets strict guidelines for landfill management. It bans certain types of waste, such as used tires, and sets targets for reducing quantities of biodegradable rubbish.

Inherited Waste

Another recent directive lays down tough limits on emission levels from



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There is growing concern about the hazards of waste disposal



Each year billions of tons of solid waste is thrown away.

we must reverse this trend if we are to avoid being submerged in rubbish.

Historical efforts at waste management have focused purely on the disposal aspect. Whilst there is now a general move

regulations and technological innovation.

Intensive recycling and waste reduction depends on changing whole systems. It relies on distributed intelligence rather than centralized knowledge and on innovation

resource for new industries. Its economic development potential has been strangely inverted, so that the lack of markets for secondary materials is seen as a major weakness of the recycling alternative.

directives now require member states to introduce legislation on waste collection, reuse, recycling and disposal of these waste streams. Several EU countries are already managing to recycle over 50% of

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incinerators. The EU also wants to reduce emissions of dioxins and acid gases such as nitrogen oxides (NOx), sulphur dioxide (SO2), and hydrogen chlorides (HCL), which can be harmful to human health.

The amount of waste each of us produces is rising steadily with rising consumption. Economic growth has resulted in

higher production and consumption, and is the most important driving force behind the growing quantities of waste. During the 1990s, there was also a steep rise in the amount of waste used for material recovery (recycling materials such as paper, plastic and metal from waste). Waste and waste treatment contribute to a number of

environmental problems, for example emissions of greenhouse gases, heavy metals and other environmentally hazardous chemicals.

Hazardous waste is the term used for waste containing chemicals that are hazardous to health or the environment. It cannot be dealt with ordinary consumer waste because of the risk of serious pollution or injury to people or animals. We now know more about the dangerous properties of many chemicals. More and more hazardous chemicals that were once disposed of on landfills are now collected and treated properly. For example, electrical and electronic waste such

as televisions and fridges is now collected so that the equipment can be dismantled and parts containing hazardous waste removed.

Old industrial sites, abandoned mines and old landfills containing hazardous waste contain large amounts of hazardous chemicals that over the years have been dumped or have entered the environment as a result of leakages and accidents. Old industrial sites are often polluted, and there are polluted sediments in fjords, harbors and rivers. In some cases, the pollution may be a clear health hazard or cause irreversible environmental damage.

Steel Production



Mubarakheh Steel Complex has a production target of 3.75 million tons in the current Iranian year.

Iran produces some 8 million tons of steel per year and is ranked 21st in the world in terms of steel production. However, Iran can easily improve its ranking due to the abundance of rich iron ore and coalmines in the country.

With the implementation of development plans at Mubarakheh Steel Complex and Khuzestan Steel Complex as well as the private sector's projects, the steel production capacity of the country will hit 14 million tons. This will help Iran's standing to improve by 3 to 4 ranks. If such a trend continues, within the next six years, Iran will be ranked as the top five producers of steel.

The most important obstacles in the way of production of steel at the national and international levels are procuring raw material such as iron ore, coal and coke as well as transporting them. Iran may not have the problem of transportation of raw material to a large extent. But, at any rate, shortage of raw materials is a global dilemma, which it is predicted, will adversely affect the international steel industry in 2005 more than ever.

In view of the abundance of mines and rather inexpensive energy resources, Iran

should focus on exploration and exploitation and also privatization of mines so

that the national steel industry would not face the problem of procuring raw

materials.

In the meantime, given that many steel-related projects will become operational in the near future and that these undertakings will need iron ore urgently, this prob-

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lem might become more complicated and therefore factories should have easy access to the mines.

Mubarakheh Steel Complex, in line with the plans for expanding steel industry, intends to increase its annual output from the current 2.4 million tons to 4.2 million tons. This plan is divided into 16 subcategories, including increasing the output of cold sheets to 77 million tons, increasing the output of hot sheets to 4 million tons

and increasing the production of raw steel to 4.2 million tons. Some of these plans have already become operational and some others are on the verge of becoming operational. It can be asserted that 91 percent of the plans have been completed.

This year, Mubarakheh Steel Complex has targeted to produce 3.75 million tons of various steel products and intends to raise its output to 4 million tons next year. During the first half of the current Iranian year (started March 20, 2004), this complex produced 1.89 million tons of raw steel and 1.05 million tons of steel products, marking increases of 13 percent and 22 percent respectively compared to the corresponding period in the previous year.

Meanwhile, in the same period the complex's exports increased by 98 percent and reached over 435,000 tons of steel products with a total value of \$192 million. Furthermore, for the first time this year the complex produced galvanized steel. During the first six months of the current Iranian year, the production level of galvanized steel hit 65,000 tons. It is projected that if this trend continues, the country would not need to import galvanized steel.