

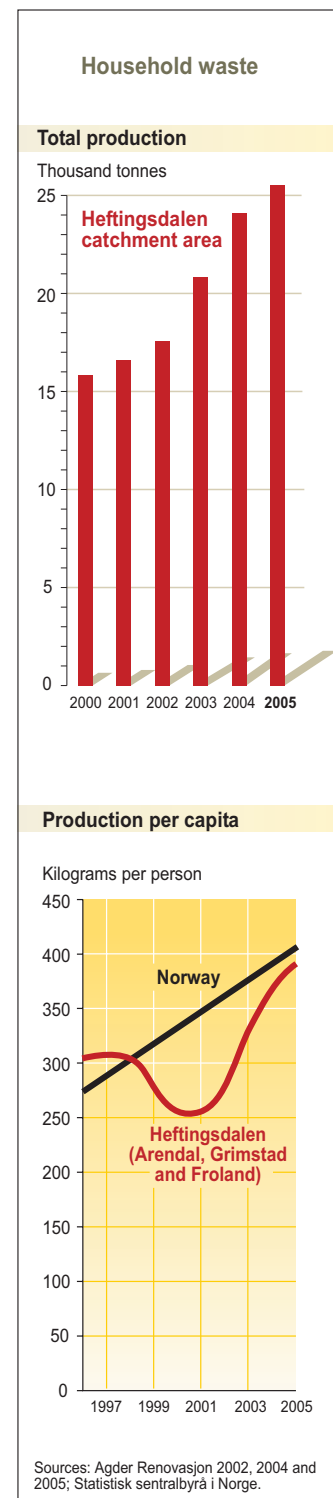
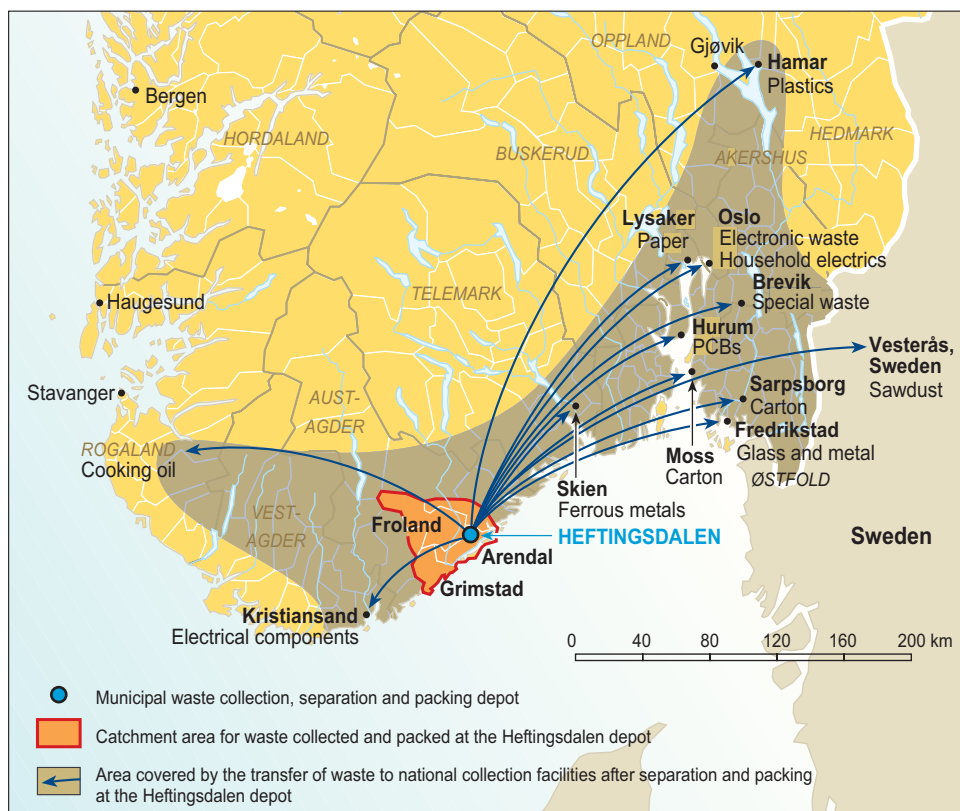
CASE STUDY FROM HEFTINGSDALEN, NORWAY

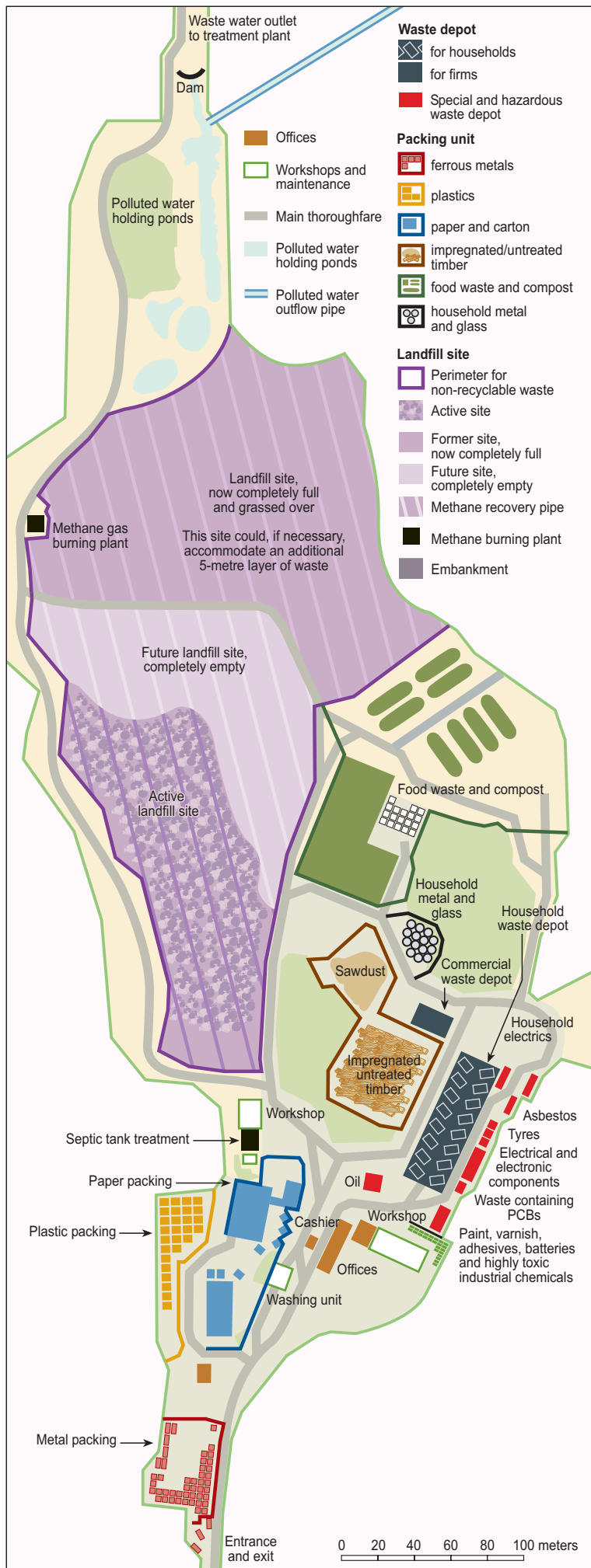
A model for waste processing?

“Everything you see, any of the goods on the shelves, will all end up with us. It may take a day or ten years, but in the end we recover everything, even the contents of septic tanks.” Our visit to the Heftingsdalen municipal waste processing plant (which serves three localities in southern Norway) starts in the supermarket of the nearby village of Saltrød!

“I wanted to remind you why places like Heftingsdalen exist. For consumers, waste disappears the moment their bin is emptied. They see us as a sort of cemetery for the consumer society. They completely disregard the concept of waste and what it becomes. Nor do they have much idea of the many ways waste may be processed. Nothing disappears. It all becomes something else, which inevitably impacts on our environment and way of life.” Our host, an engineer, takes us past the shelves pointing out needlessly over-wrapped goods and packaging that mixes materials (carton and plastic, for instance), a nightmare for recycling. “There are times I feel like a paramedic in a humanitarian crisis. We have this enormous ability to produce consumer goods, with a correspondingly huge flood of waste, which is stretching our limits. Five years ago waste processing plants represented a fairly effective, sustainable solution, now they are a crisis response.” In 2005 household waste output was up by 10 000 tonnes on 2000, rising from 15 000 to 25 000 tonnes for almost the same population. Nor does this include 20 000 tonnes of business waste (construction, light industry and service sector). In all Heftingsdalen processes about 45 000 tonnes of waste, making an average of 720 kilograms per person per year.

At the entrance to the plant, which covers more than 15 hectares, a sign announces: “Compost, bark and wood shavings for sale”. Other waste is separated, packed and redirected to logistics centres elsewhere in Norway and Sweden. Jens Christian Fjelldal, the head of the plant, explains that they sell a range of more than 200 recycled materials to buyers in Europe and even South America and Asia. The recycling activity pays its way, enabling the three localities to cover the full cost of waste management. The plant employs about 30 people and makes a tiny profit of about €500 000.





The plant is designed to restrict waste movement and environmental damage. Strict safety regulations govern storage of hazardous waste (chemicals, asbestos, varnish, oil, etc.). Such waste is not moved until it is destroyed on the spot or redirected to specialist plants elsewhere. All the other waste is separated by the consumers themselves and dumped into skips. Full skips are transported to the relevant processing plant in such a way as to restrict internal movement. Special drains collect any polluted surface water, contaminated with chemicals, germs or pesticides, and channel it to holding ponds. From there it flows down a closed pipeline to a waste water treatment plant 20 kilometres away. Waste effluents must never come into contact with the water table.

Much of the plant is devoted to composting and landfill for unseparated waste, the latter occupying half the total area. This is the destination of all the waste that can neither be separated nor recovered (37 per cent of the total). Every day bulldozers carefully spread 20 to 25 cubic metres of trash dumped by the refuse collection vehicles. The heaps of detritus are a stark reminder of the problem of over-consumption and waste. The area allocated to landfill is filling up much faster than in the gloomiest forecast. The current site has already reached the level originally planned for 2014. At this rate Heftingsdalen will soon be full, the only solution being to spill over into the surrounding forest. The plant could also obtain permission to raise the embankment making room for several tens of thousands more tonnes of waste, but that too is only a short-term solution.

As it seems likely that the Norwegian authorities will introduce measures, coming into force in 2009, to ban landfill for unrecoverable household waste and switch to incineration, the team at the plant is looking at ways of recovering energy from waste incineration, a technology that is cheaper and more energy-efficient than the methane production plant previously considered. At present methane gas emissions are almost all burned in a furnace at one end of the site. In all some 1.9 million cubic metres of gas are burned every year to avoid releasing it into the atmosphere. The energy could however be put to other uses.

In terms of waste separation Heftingsdalen is exemplary, processing waste in ways that are safe for its workers and the environment. But it is just one small cog in a complex system, with energy consumed at every step in the recycling process, including transport and handling. If the ecological balance sheet includes energy costs the whole process proves pointless. It may save raw materials and protect nature, but oil consumption and emissions still increase. Plants such as Heftingsdalen only make sense if they go hand-in-hand with progress by all the players involved. Upstream, manufacturers need to rethink their choice of materials, to facilitate separation, with distributors redesigning packaging. Downstream, government and international agencies must restrict the movement of waste and promote the construction of local or regional processing plants.