

Attachment E5: Raw materials & Energy

Use of resources

The main raw material for the composting process will be waste organic materials, as described in Attachment E2.

The facility will require the following raw materials/resources to process the waste:

- ◆ electricity to power the air blowers
- ◆ diesel to operate the rolling stock and site electricity
- ◆ water to moisten the compost

Electricity

Electricity consumption by blowers (tunnel & ASPs) is estimated at between 6 and 9 kWh per tonne processed per day.

The electricity consumption of the remainder of the site would be nominal.

Diesel

Diesel consumption of rolling stock based on four loaders, a shredder and a compost screen would be 8,000 – 10,000 litres per month.

Water

To ensure optimum efficiency, it is important that the compost is kept moist. It is likely that water will only need to be added to the compost on the aerated static piles during the summer months. Surface water run-off will be collected and recirculated into the compost. In the tunnels, water can be added as required to ensure optimum conditions.

The quantity of water required by the process will be dependent on weather conditions and the moisture content of the raw material. However, during the design of the facility water balance calculation were carried and are included in Chapter 10 and Appendix 10.1 of the EIS.

Energy Efficiency

The main energy saving features of the facility relate to the process control system that controls the composting process. This will be based on temperature and oxygen feed-back that controls the speed of the fans. The benefit here is that the blowers will only operate up to the biological requirements of the biomass present thus minimizing excessive aeration based on simple time switches.

Efficient diesel usage will be achieved due to the efficient lay-out of the facility to minimize loader movements. In addition, aeration provided by the blowers will greatly reduce the cost of pile turning, which would result in a much larger diesel consumption rate. In this regard, the material will be moved four to five times during the eight to 10 week process. This compares favourably with agitated systems where windrows or agitated bays may need turning twice a week or 16 to 20 times over a corresponding period.