


the energy from waste process

1 Tipping hall



Waste is delivered to the facility in lorries. They enter the enclosed tipping hall and reverse up to the bunker edge. Air is sucked through the tipping hall and bunker and into the furnace so that odours do not escape.

2 Waste bunker



The waste is stored in the bunker waiting to be loaded into the furnace by crane. Around 10 days worth of waste can be stored here. Air is sucked through the tipping hall and bunker and used in the furnace so that odours do not escape.

3 Furnace



The waste is burnt under very carefully controlled conditions to ensure safe and complete combustion and maximise the amount of heat recovered as useful energy. The walls of the furnace are made up of pipes within which water is heated and turned into steam in the boiler drum.

4 Bottom ash

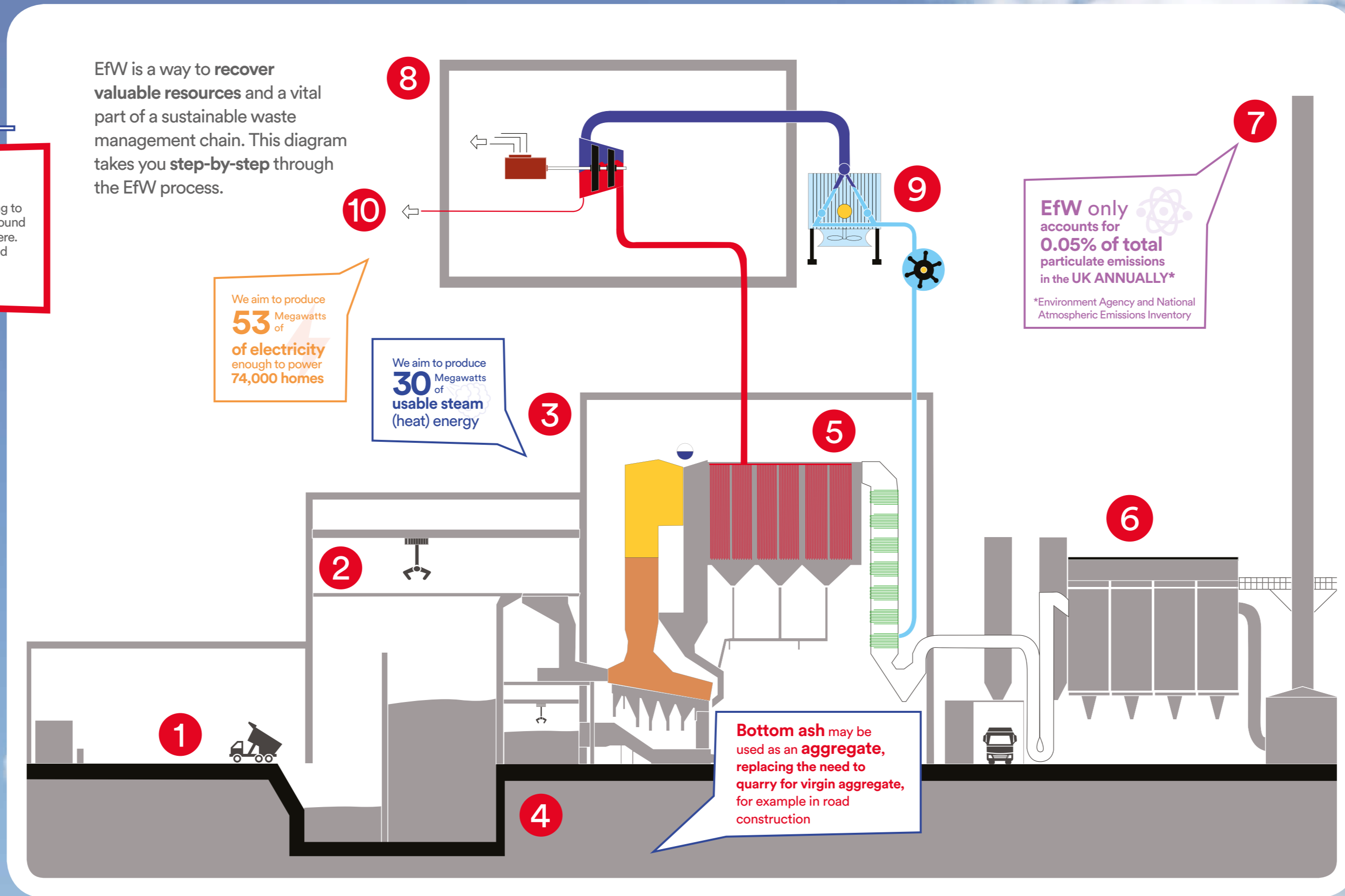


Those bits of the waste that don't burn, e.g. metals and bricks, are part of the ash that falls off the furnace grate. This falls into water to cool it and is then put into a separate bunker before being taken away for recycling.


5 Boiler



The very hot gases from the furnace are passed through the boiler. The steam from the boiler drum goes through tubes in the boiler to superheat it, ready to be sent to the turbine.



6 Air Pollution Control System




Having given up most of their energy to create useful heat in the form of steam, the flue gases have to be cleaned before they enter the chimney. The flue gases are injected with activated carbon and lime which react with pollutants such as acidic gases. The filters at the end of the system ensure that the residues, together with dust from the furnace, are captured so that the flue gas entering the chimney is well within the limits set by law. The system is controlled "real time".

7 Chimney



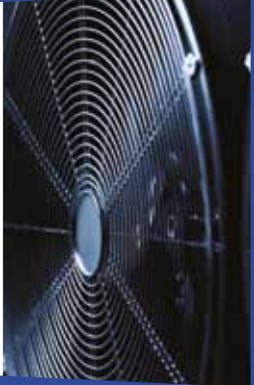
The chimney height will be calculated to ensure that the limited emissions allowed under law are dispersed safely.

8 Turbine Hall



Superheated steam from the boiler is sent to the turbine where it is used to drive an alternator, generating useful electrical energy. Steam can also be taken from the turbine at pressures and temperatures suitable for use by local industry. This reduces their dependency on fossil fuels and improves the overall efficiency of the facility.

9 Air Cooled Condenser



The condenser takes the exhaust steam from the turbine. Very quiet fans send cool air up through the condenser tubes. Warm water goes back to the boiler, where it is used to make steam again.

10 Energy Distribution



The energy in the waste has finally been turned into useful electricity and steam for use by local industry. Any excess electricity is sent to the grid locally, displacing fossil fuels. Steam will be sent to local industry through an over ground pipeline.



Find out more about how to feedback, event details and further information on the project by visiting our website -

www.mvv-medworthchp.co.uk