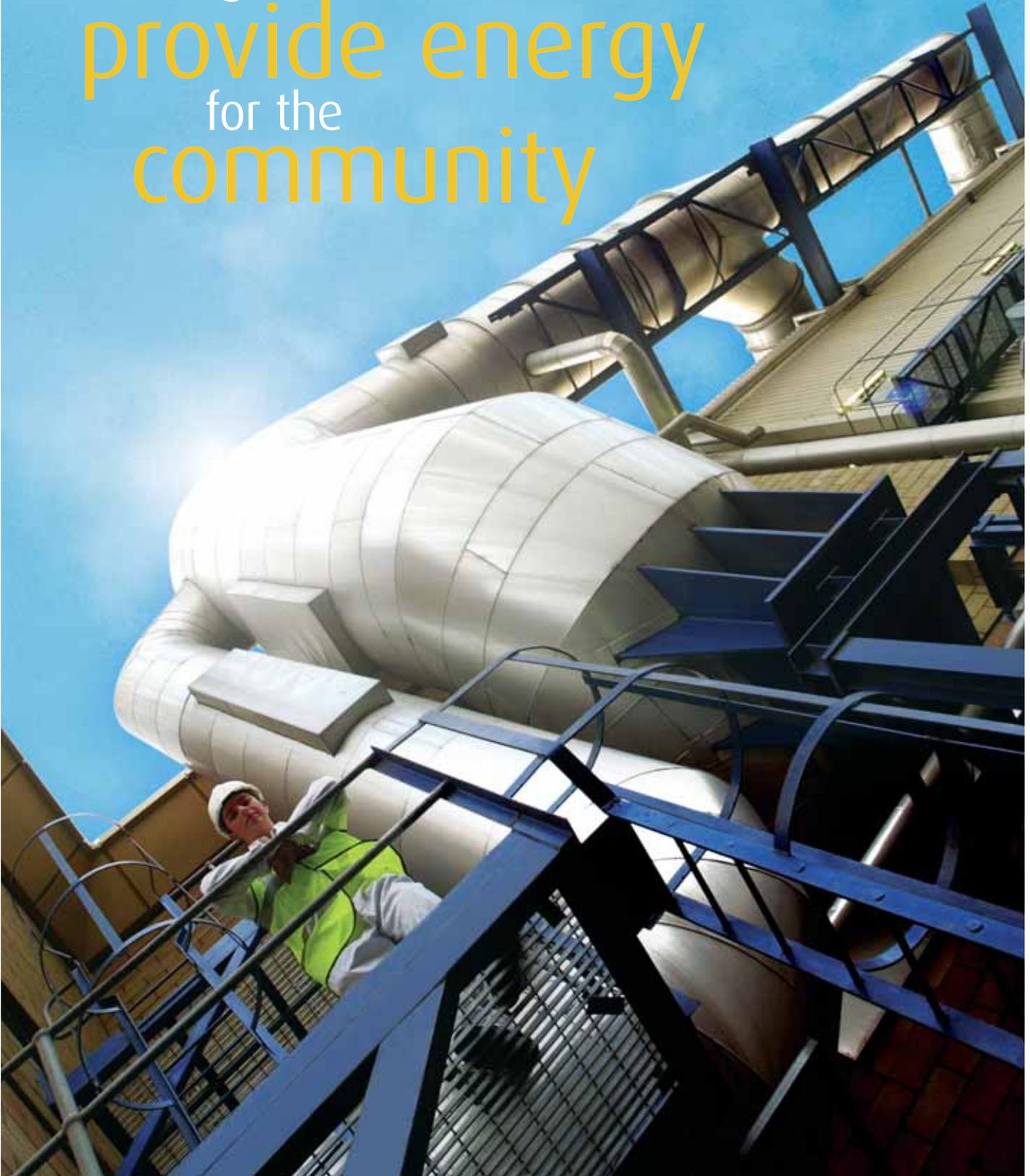
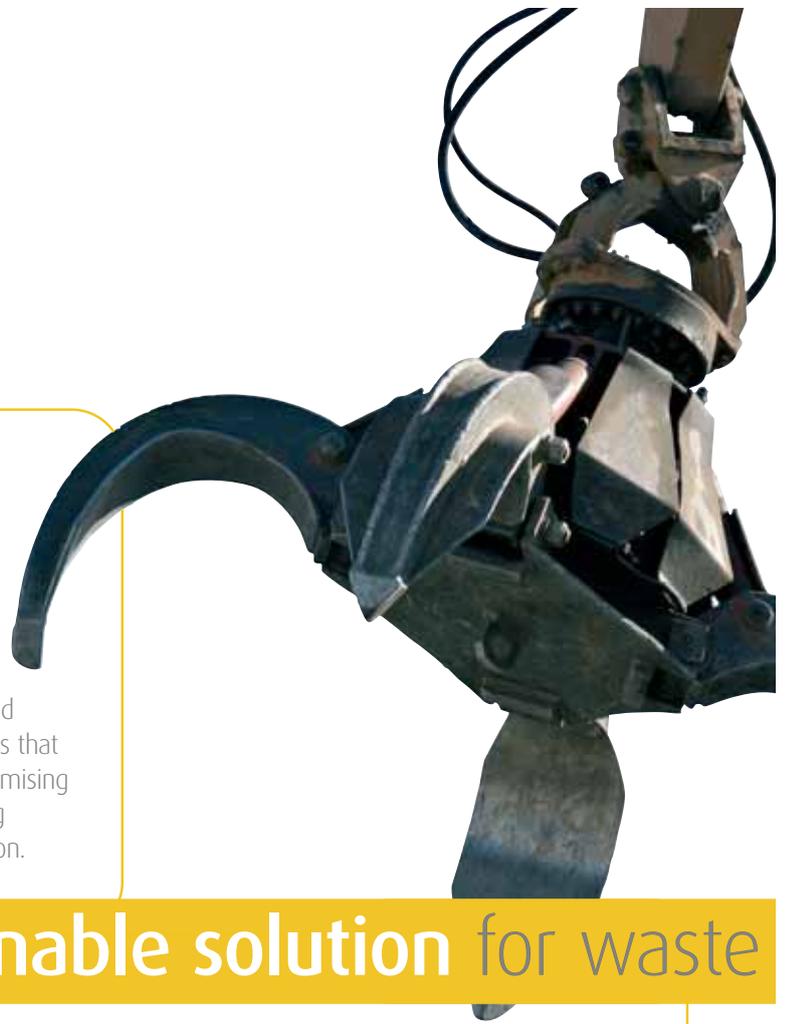




using waste to
provide energy
for the
community





Rising waste production, diminishing landfill capacity and increasing regulation are issues which affect everyone.

In a city the size of London, logistical problems of moving waste to a disposal site add more pressure to find sensible waste management solutions that address the 'proximity principle'; minimising unnecessary transportation and taking responsibility for local waste production.

a long-term sustainable solution for waste

In the mid-1980s the London Boroughs of Lewisham and Greenwich realised an alternative solution would need to be found to the dwindling landfill resources taking London's waste. The result was SELCHP, an advanced Energy Recovery Facility built through a partnership between the public and private sectors. Opened in 1994, SELCHP is now regarded as an example of industry best practice, with similar facilities modelled on its design being constructed around the world.

Energy Recovery

Energy recovery provides a long-term sustainable solution for waste disposal. Once the options of waste reduction, reuse and recycling are exhausted, residual waste can be sent to Energy Recovery Facilities to produce power for the National Grid, reducing our reliance on fossil fuels and providing us with energy from a constantly renewable source.

Modern Energy Recovery Facilities such as SELCHP operate under strict environmental controls, using the mass-burn process to incinerate waste at temperatures where potentially harmful chemicals are destroyed. Residues and flue gases are carefully treated to ensure that potential pollutants are not allowed to enter the atmosphere. SELCHP is operated by experts in energy recovery technologies, working hard to ensure the plant remains efficient, technologically up to date and above all, safe.

- SELCHP was the first Energy Recovery Facility in the UK to meet and exceed new European Directives.
- SELCHP is strategically located to meet the 'proximity principle'.
- SELCHP is capable of handling 420,000 tonnes of waste per annum.
- SELCHP produces enough electricity to power around 48,000 homes.



t: 020 7394 4770 or 07000 SELCHP

www.selchp.com



disposal



SELCHP is strategically located to meet the 'proximity principle'

what are the benefits for the community

On average, every household produces one tonne of waste a year.

SELCHP can take up to 420,000 tonnes of household waste per annum, directly from residents of Lewisham, Greenwich, Westminster and Bromley. SELCHP manages the waste in a sustainable way, achieving a number of key environmental objectives.

- Energy is recovered from the waste, supplying enough power for 48,000 homes.
- One tonne of municipal solid waste is equivalent to 1/3 tonne of coal, so the facility has a significant role to play in reducing dependence on fossil fuels.
- Waste is diverted from landfill, helping the residents of the London boroughs to meet Government and European Directive targets.

The SELCHP Energy Recovery Facility was built to serve the community where it is located; taking into consideration the public's needs, not only in terms of waste disposal, but also through strict control of noise, traffic and odour.

Throughout the working life of the facility, SELCHP has maintained a close relationship with the community through the Incinerator Monitoring Group, made up of local residents who meet with SELCHP's management on a regular basis to ensure local issues remain high on the agenda and are dealt with promptly. An in-house magazine is published twice a year and distributed to around 6,000 homes and schools locally, keeping residents up to date with developments at the facility.



SELCHP produces enough electricity to power around 48,000 homes



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who built, owns and now runs **SELCHP**

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SELCHP is a successful commercial partnership between the public and private sectors, operated through a consortium of local authorities and specialist companies.

Veolia Environmental Services

Veolia Environmental Services is a worldwide waste management company which operates some of the most successful local authority waste management contracts in the UK. Currently serving over 8 million UK residents with waste collection, recycling and street cleansing services, Veolia Environmental Services brings unrivalled technical and operational experience to the SELCHP Energy Recovery Facility.

CNIM

CNIM provides turnkey industrial solutions, with a high technological content in three major groups of products and activities: (i) environment and services, (ii) mechanical engineering and services, (iii) energy and services.

CNIM has a wide experience in the design and build of household waste and biomass fired energy recovery facilities and flue gas treatment systems.

London Borough of Lewisham

Lewisham Council provides waste collection, a kerbside collection for paper and card, mini recycling centres, recycling sites on every housing estate, a Reuse and Recycling Centre and subsidised compost bins to help nearly 250,000 residents deal with their waste.

London Borough of Greenwich

Greenwich provides household waste collection, a doorstep recycling collection, bring banks and is piloting a green waste scheme for its population of over 220,000.

London Energy

London Energy is part of EDF Energy, one of the largest energy companies in the UK, supplying energy services to over 5 million customer accounts in the UK through London Energy, Seeboard Energy, SWEB Energy and Virgin Home.

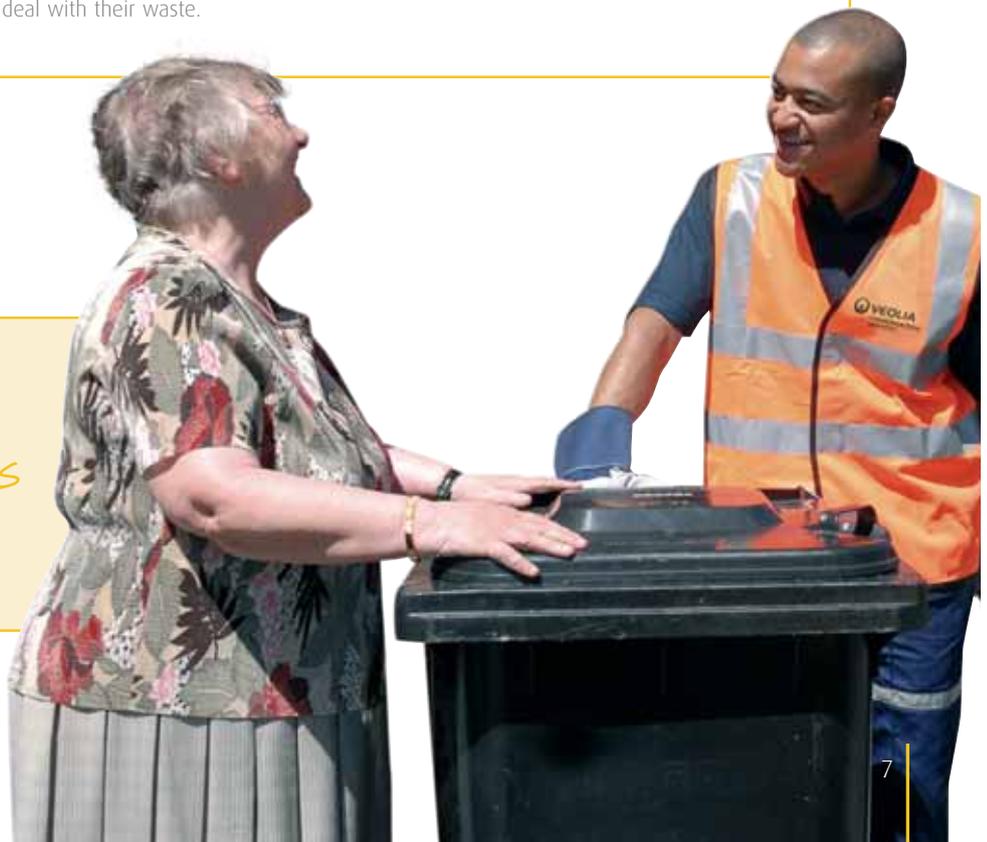
Switch 2 Energy Solutions

Switch 2 is committed to being the UK's leading provider of bespoke metering solutions enabling their clients to meter, monitor and control their utility supplies.

John Laing plc

John Laing plc invests in, develops and operates hospitals, schools, defence establishments, police stations and roads in the private finance initiative (PFI) and public-private partnership (PPP) markets.

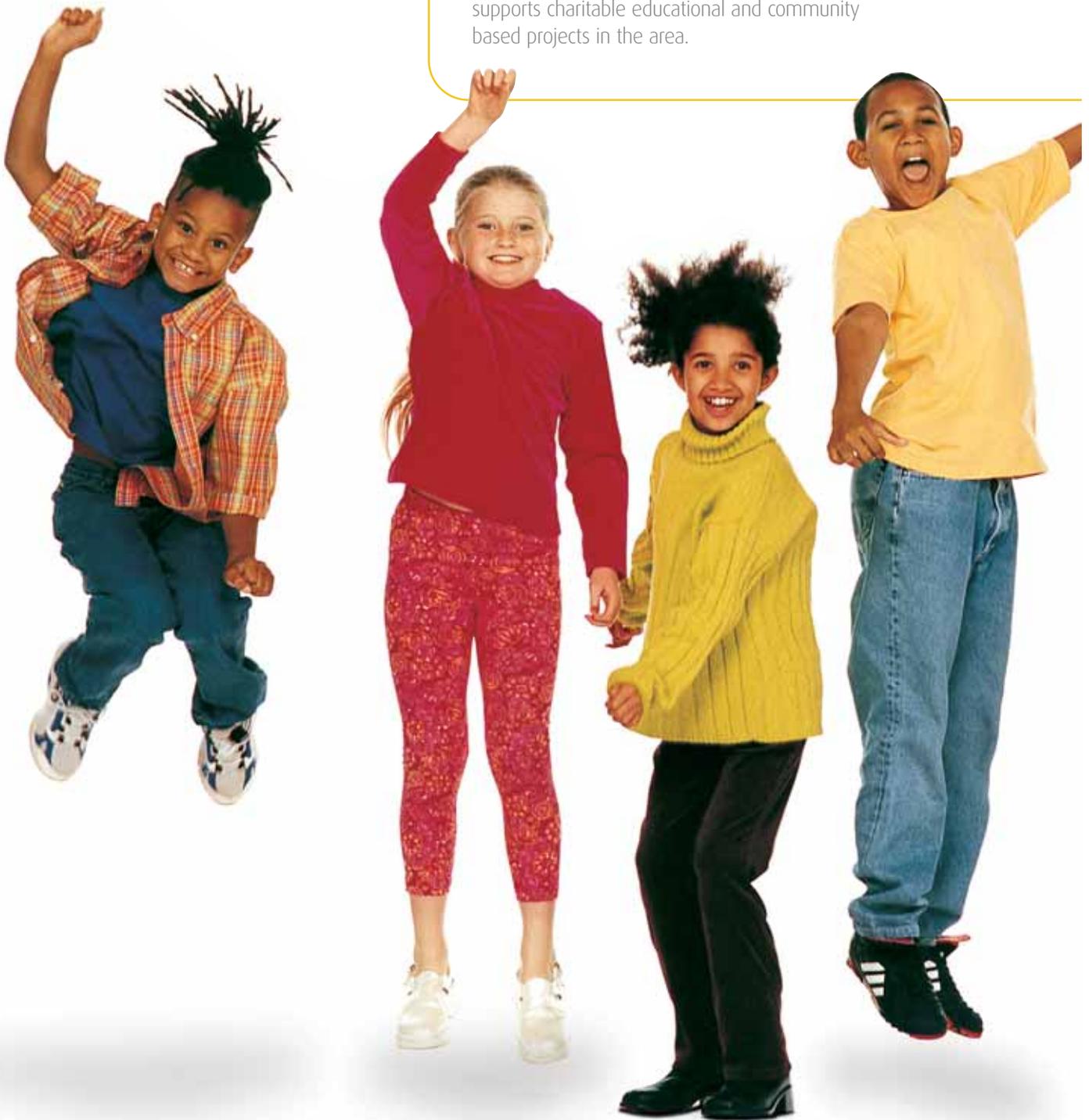
SELCHP is capable of handling 420,000 tonnes of waste per annum



how the **community fund** works

**SELCHP not only works in the community;
we work for the community.**

We believe we have a direct social responsibility in the area in which we operate. SELCHP actively supports charitable educational and community based projects in the area.



The SELCHP Community Fund

The fund was founded in 1994. Since then it has helped over 100 well deserving projects in and around the immediate area of the facility. Donations to date are in excess of £200,000.

The aim of the charity is to support small organisations within the local community in realising projects, especially of a self-help nature.

SELCHP is proud to continue its support for well-deserving projects in the local area.

Almost £35,000 of the funding has come directly from donations made by the 13,000 visitors from all over the world who have visited SELCHP to see just what can be achieved at a modern state-of-the-art Energy Recovery Facility.



Donations to date are in excess of £200,000

how SELCHP works

SELCHP receives waste from households and some businesses. Waste is tipped into a bunker, where a crane grabs it and places it into the feed hopper. It then drops down a feed chute onto a sloped grate, where it is constantly turned to allow all combustion phases (such as drying, ignition and combustion itself) to happen simultaneously and a constant high temperature to be maintained. Ash from the burning process is transferred by an ash discharger and residue handling system to the ash pit. During the transfer, ferrous metals are removed for recycling and the remaining ash is sent for reprocessing into recycled material for road building or construction use.

Hot gases produced in the combustion process pass through a water tubed boiler where they are cooled; the heated water is transformed into steam. A turbo-generator uses the steam to produce electricity for export to the National Grid.

The gases from the boiler go through a complex flue gas cleaning process, involving the injection of dilute ammonia solution to reduce nitrogen oxides to nitrogen and water; lime milk to neutralise acid gases

and activated carbon to absorb heavy metals and any remaining dioxins. Finally the particulate matter is removed from the gas stream by a bag filter before the cleaned gas is released to air. The resultant material known as Air Pollution Control Residue (APCR) is sent for disposal at a licensed hazardous waste site.

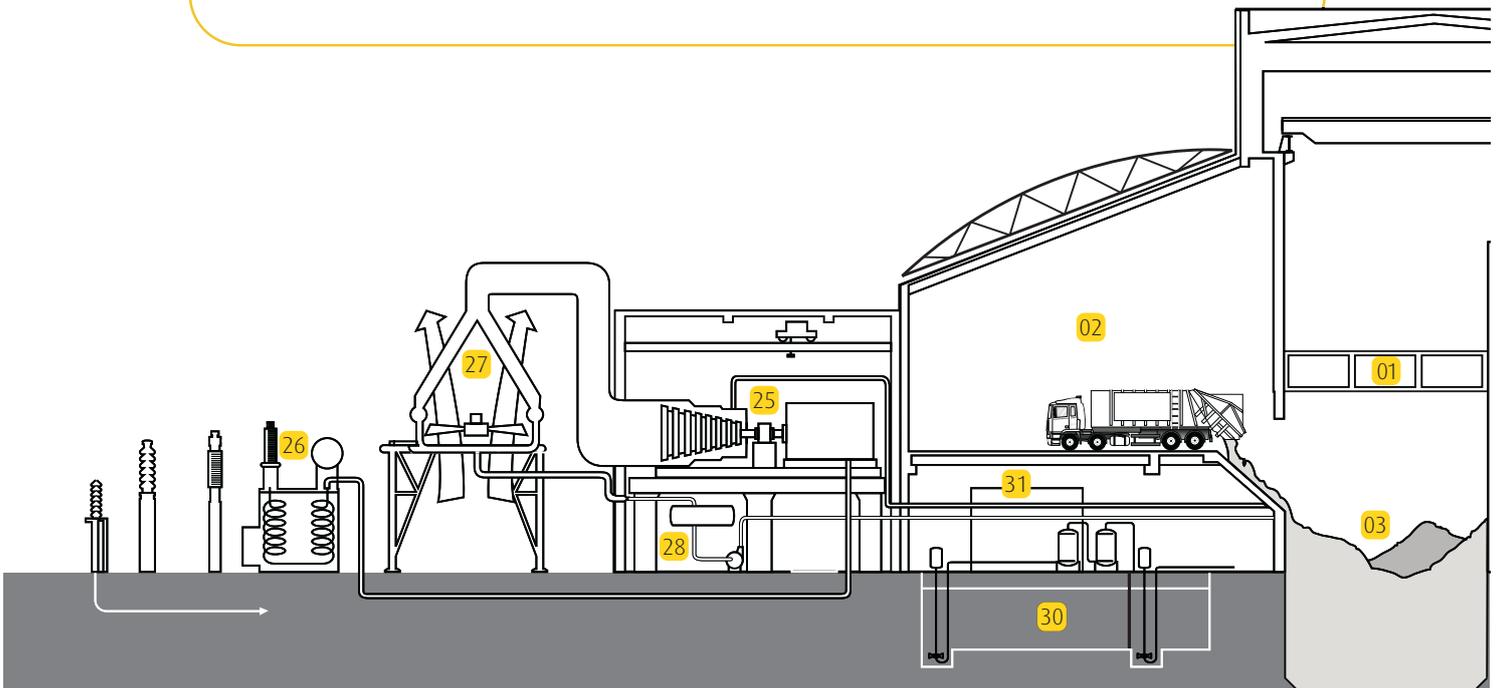
How the power is generated

Steam leaves the boilers at a temperature of 395°C and pressure of 46 bar, and is fed directly into a single 35 MW steam turbine generator.

The turbine rotates the generator to produce electricity. Steam from the turbine is also used to pre-heat the combustion air for the waste burning process.

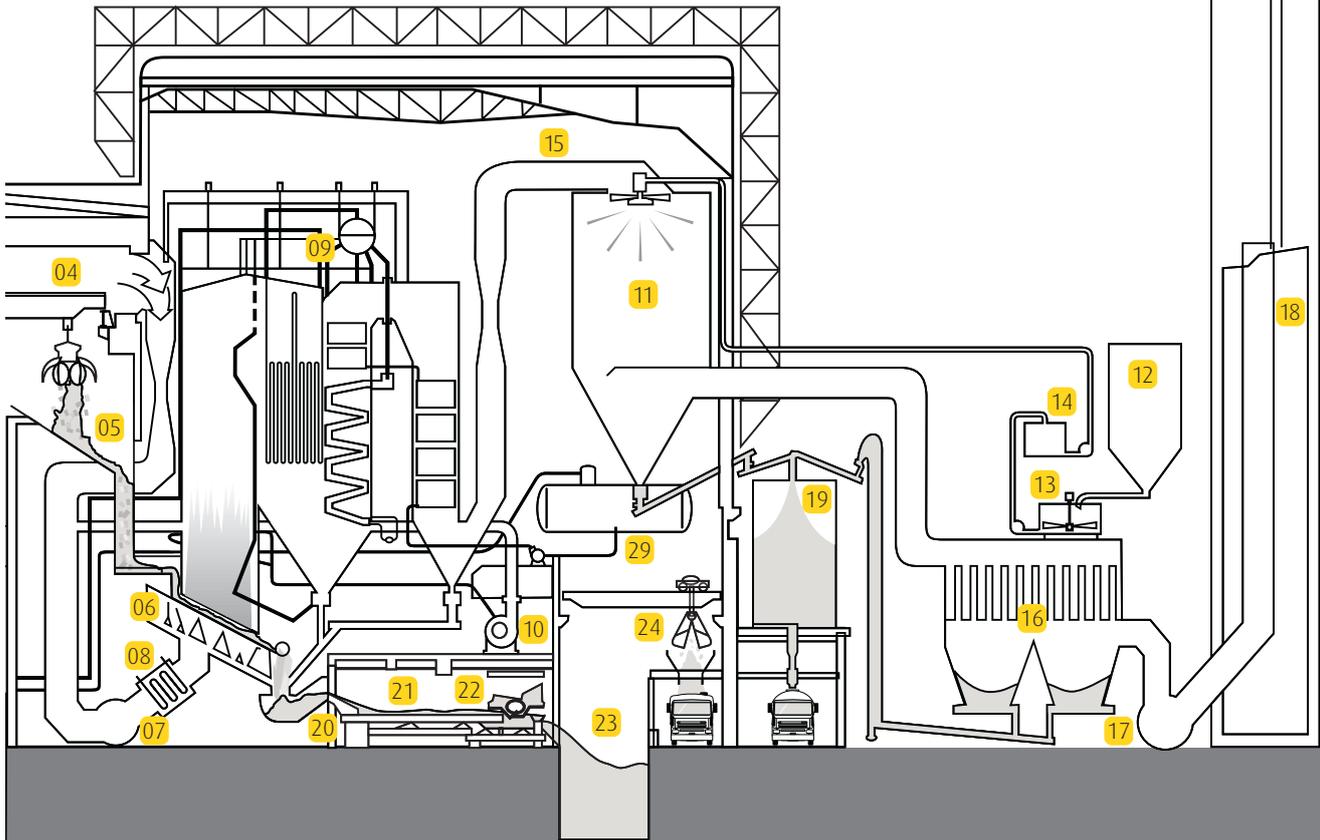
A bank of air cooled condensers condense the exhaust steam from the turbine and recycle the water back into the process.

Electricity is generated at 11kV and transformed up to 132kV for export to the London Electricity system which passes very close to the SELCHP facility.





SELCHP was the first Energy Recovery Facility to meet and exceed new European Directives



- | | | | |
|--------------------------|-------------------------------|----------------------------------|---|
| 01 Control Room | 09 Steam Boiler | 17 Induced Draught Fan | 25 Steam Turbine and Generator |
| 02 Tipping Hall | 10 Over Fire Fan | 18 Chimney Stack | 26 Electrical Substation |
| 03 Refuse Bunker | 11 Gas Treatment Scrubber | 19 Air Pollution Control Residue | 27 Air Cooled Condenser |
| 04 Refuse Handling Crane | 12 Lime Silo | 20 Ash Discharger | 28 Condensate Tank |
| 05 Feed Hopper | 13 Lime Preparation | 21 Residue Handling Conveyors | 29 Deaerator |
| 06 Incineration Grate | 14 Prepared Lime Storage | 22 Magnetic Separator | 30 Water Treatment Plant |
| 07 Under Fire Fan | 15 Activated Carbon Injection | 23 Bottom Ash Pit | 31 Future Heat Exchanger for District Heating |
| 08 Air Heater | 16 Bag House Filter | 24 Residue Handling Crane | |



South East London Combined Heat and Power Limited

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