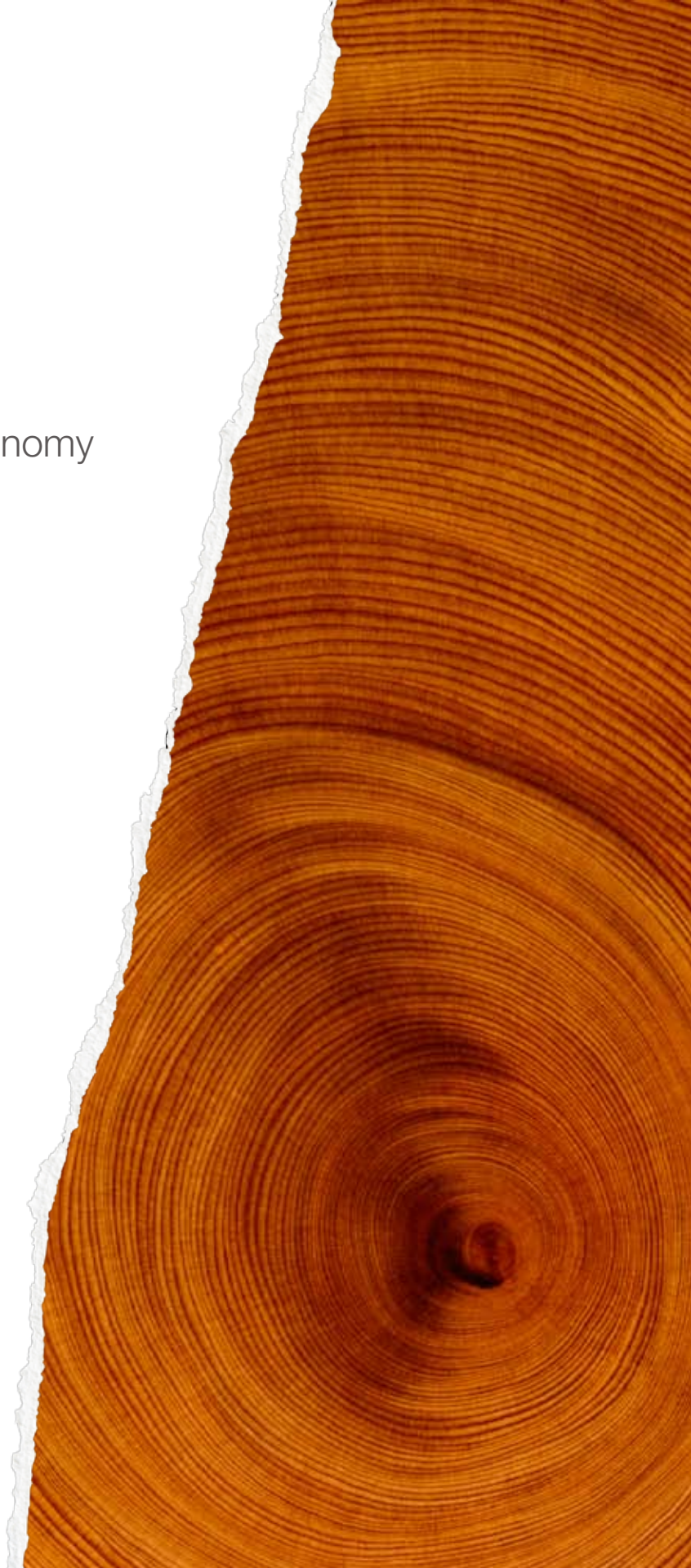
ACHIEVING THE VISION OF NO MORE WASTE

Engaging in the circular economy



WE WANT TO LIVE IN A SOCIETY WHERE THERE IS NO MORE WASTE

Waste management in the UK is in transition. We accept that our current rate of consumption of natural resources is unsustainable, and that we need to be more efficient while making the most of our resource base of raw materials and energy. In doing so, we also help fight climate change by reducing greenhouse gas emissions in the wider economy.

SITA UK has responded to this challenge. We have re-engineered our company to generate more value from our customers' waste, enabling them to reduce their environmental impact through our recycling and energy recovery activities.

However, the UK still has a long way to go before we can describe ourselves as a sustainable society. At SITA UK, our vision is to get to a point where the majority of waste materials will have been reused, recycled, or recovered for their energy content. We want to reach a stage where there is no longer any 'waste', because we recognise the intrinsic value of the materials we handle as a secondary resource.

To achieve this vision, a truly integrated policy framework must be created that locks resource and energy use, production, consumption and waste management into a 'virtuous circle'. This is known as the 'circular economy'.

We present SITA UK's policy proposals which, if implemented, would engage waste management further in the circular economy. Each set of proposals addresses the individual elements of the circular economy, while working in tandem to strengthen the entire resource management value chain. Some of our proposals reinforce existing policies or legal instruments, while others anticipate the likely future direction of waste policy.

It is with all these elements in place that we can realise our vision, to live in a society where there is no more waste.

THE CIRCULAR ECONOMY

Treating waste as a resource changes the way in which we see the waste management industry.

Within the circular economy, the role of waste management is to collect, treat and return secondary resources and recovered energy back into the cycle of production and consumption. Recovering value and creating markets for the materials and energy we produce from the waste our industry handles become the principal policy drivers.

At SITA UK, we have adopted these policy drivers as our strategic business development goals. We keep five sustainability criteria at the forefront of our forward-planning and investment decisions:

- Use energy and resources efficiently in our processes
- Lower the carbon footprint of our operations
- Increase the proportion of waste we recycle back into the economy
- Produce more renewable energy
- Landfill residues from which value has been extracted

We can only operate effectively in the circular economy if markets can be found for the products we create. Maintaining product quality is vital and, therefore, at the centre of our business strategy.

We believe that the cleaner the material, the greater the likelihood of securing stable long-term markets for products. Although there is no single one-size-fits-all solution, our experiences in the European secondary markets lead us to a preference for separate collection – at least of the key material streams – as the starting point for the waste management value chain.

We want to reach a stage where there is no longer any 'waste', because we recognise the intrinsic value of the materials we handle as a secondary resource.

THE CIRCULAR ECONOMY MODEL

The model below illustrates the circular economy, highlighting the economic and waste management cycles.

WHAT NEEDS TO CHANGE

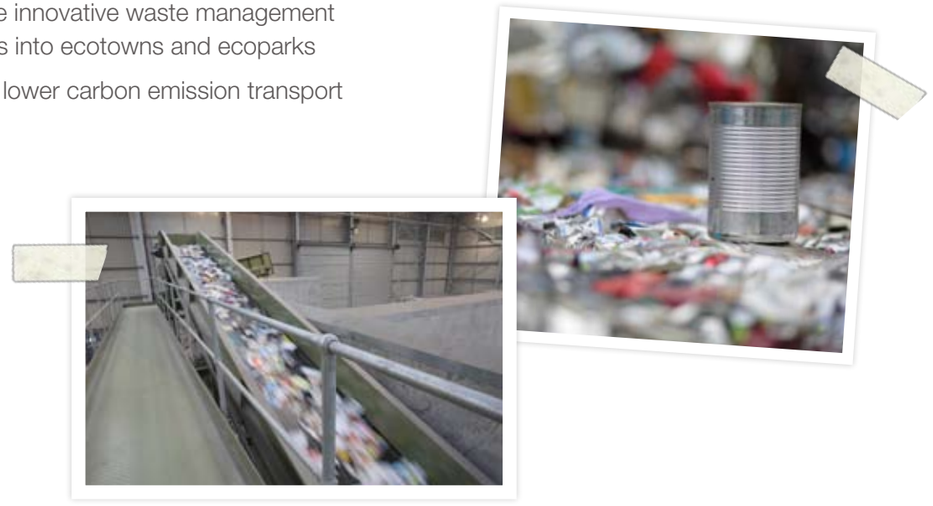
Changes are required at each stage in the cycle to fully embrace the circular economy model:

WASTE GENERATION

- Amend the Duty of Care to strengthen the Landfill Directive pre-treatment requirements on waste generators, prior to landfilling
- Introduce source separation for the commercial and industrial sector to parallel a similar requirement placed on households through the Household Waste Recycling Act 2003
- Push for the application of Extended Producer Responsibility to a wider range of consumer products

COLLECTION AND LOGISTICS

- Develop coordinated logistics in urban areas
- Design innovative collection and storage for urban monostreams
- Integrate innovative waste management solutions into ecotowns and ecoparks
- Reward lower carbon emission transport



SORTING AND RECYCLING

- Push for genuine regional planning for strategic waste facilities
- Encourage primary sorting, but allow the market to decide on downstream technology
- Keep export markets open – they are critical for the viability of the recycling sector
- Waste policy should support product quality, not just quantity
- Review performance targets placed on local authorities and businesses to check that the 'right' materials are being recycled from a climate change perspective

ENERGY RECOVERY
(ENERGY-FROM-WASTE, ANAEROBIC DIGESTION, LANDFILL GAS)

- Build energy recovery centres with combined heat and power into ecotowns and ecoparks, and create an appropriate legislative framework to facilitate entry into local energy, gas and heat distribution networks
- Lower the 50 MW planning threshold so that regional-sized facilities are treated as major infrastructure projects
- Continue to press for the non-fossil element of mixed waste combustion to be eligible for Renewables Obligation Certificates
- Link the UK with the EU Environmental Technology Verification (ETV) Scheme, allowing the UK to share the risks of verification with other Member States

LANDFILL

- Keep landfill tax under review, giving an early signal as to its level after 2013
- Introduce landfill diversion targets for biowaste arising from the commercial and industrial sector
- Restrict landfill for combustible material in order to encourage energy recovery

PRODUCT USE

- Introduce a requirement for a minimum recycled content in selected products
- Introduce mandatory green public procurement targets
- Develop and extend ecolabelling to give visibility to products containing recycled materials

PRODUCT MANUFACTURE

- Create a mechanism for rewarding businesses and the waste sector for the savings in greenhouse gas emissions when using recycled materials
- Set sectoral industry benchmarks for utilities, materials and energy efficiency as part of the UK's Sustainable Consumption and Production (SCP) agenda

RESOURCES

- Raise the aggregate tax from its present level to stimulate further recycling of construction and demolition waste
- Introduce a 'peat tax' to stimulate biotreatment of waste into compost, thereby protecting natural peat habitats
- Support further end-of-waste protocols

CHANGES AND KEY DEADLINES

Changes will need to be delivered in order to meet legislative deadlines. The timeline below provides an overview of EU deadlines and what needs to be achieved by each stage.

ANTICIPATED UK AND EU LEGISLATION

SITA UK'S POLICY PROPOSALS

2010

- Biowaste Green Paper (1) Separate collections (2) Landfill bans
- UK Committee on Climate Change – set carbon budgets for five-year cycles
- Carbon Reduction Commitment hits SITA UK with carbon price of £12/tonne
- 'Light' revision of EC Landfill Directive
- Announce intentions for landfill tax post 2013
- Amend Duty of Care to strengthen landfill pre-treatment requirements on waste generators

2012

- Landfill Directive target – 50 per cent municipal biowaste diversion
- EC to report on inclusion of waste sector in EU Emissions Trading Scheme
- Introduce source separation legislation for commercial and industrial sector
- Integrated energy policy for new build and for use of heat/steam

2014

- Restrict commercial and industrial biowaste to landfill
- Raise aggregate tax
- Introduce 'peat tax'
- Introduce minimum recycled content in products
- Introduce mandatory green public procurement targets

2016

- Possible Framework Directive on Soil Protection
- Restrict / ban combustibles from landfill

2018

- Create CO_2 'wins' when using recycled versus virgin materials
- Introduce sectoral benchmarks for utilities, materials and energy efficiency

2020

- EU climate change commitment 20/20/20
- Landfill Directive target – 65 per cent municipal biowaste diversion

WHAT WE ARE DOING

WASTE GENERATION

Carbon calculator

Developed in-house and launched in 2007, SITA UK's carbon calculator allows customers to see the real value of their recycling efforts in meaningful figures.

Rather than being expressed in purely financial or abstract terms, the carbon savings are converted into equivalent numbers chosen by the customer – whether car or flight miles, number of trees, or days in the life of a person – and related to the organisation's carbon footprint. In this way, customers have more readily understandable information that can be used to inform employees of the value of recycling and support decision-making. The carbon calculator uses the Environment Agency's life-cycle assessment software for comparing different waste management solutions.

Network Rail

In 2008, SITA UK signed a new three-year contract with Network Rail to improve recycling and waste management services at 17 of the biggest and busiest railway stations in the UK. Used by over 800 million visitors, each of these stations generates up to 3,000 tonnes of waste per year.

SITA UK is working closely with the different sites to help maximise segregation of recyclable material. In environmental terms, achieving a 60 per cent recycling target from the London stations alone, Network Rail will reduce its carbon footprint by approximately 4,000 tonnes of CO_2 per year – this is equivalent to 1,600 individual return flights from London to New York.[1]

COLLECTION AND LOGISTICS

Biofuel trial

SITA UK has been trialling pure plant oil – a low-emission fuel similar to cooking oil – since 2006. In 2007, we converted another five vehicles as part of this trial, bringing our total to six. The results so far show that exhaust emissions have been cut by 28 per cent.

Using the oil lowers a vehicle's carbon footprint by 80 per cent – even after taking into account processing and transportation of the fuel. The conversion technology and biofuel is supplied by Regenatec.

Recycling in Warwick

In 2008, SITA UK was awarded Warwick District Council's five-year waste services contract.

SITA UK is working in partnership with the council to help improve recycling rates and meet the targets for landfill diversion by providing new and improved recycling and rubbish collections for residents. The contract expands the existing box recycling scheme to include the additional collection of cardboard and plastic bottles, as well as introducing food waste collections. Warwick also benefits from on-board computing, with optimised routes to ensure fuel and vehicle efficiency.

Recycling rates in the district have reached 61 per cent.

1 Assuming 2.5 tonnes of CO_2 and 300 people per return flight

SORTING AND RECYCLING

Recycling registration scheme

If the public is to continue supporting the national effort to raise recycling rates, they must have confidence that the materials collected are processed efficiently and responsibly in well-run recycling facilities, whether at home or abroad. This is why SITA UK backed the fair trading scheme developed by the industry body, the Environmental Services Association, in 2007.

The Recycling Registration Service ensures that recyclables are traceable by local authorities and regulators, and all materials are handled and processed in accordance with good practice. SITA UK was one of just two operators to gain accreditation to the scheme in 2007. By the end of the year, five facilities had achieved the required compliance standard; four of them operated by SITA UK.

Greener offices

SITA UK's initiative to reduce the carbon footprint of company operations includes a 'go green' scheme. At our head office in Maidenhead, general waste bins at desks were removed in 2007 and replaced with communal recycling bins in office and kitchen areas.

Waste and recycling collected each day is weighed on-site, enabling us to monitor output and track trends. Paper, card, food waste, plastic and cans are all recovered and recycled.

West Sleekburn

SITA UK's newest recycling materials facility opened in April 2009 in West Sleekburn, Northumberland. The new £13 million facility can manage 120,000 tonnes of recycling and residual waste each year.

One of the first of its type in the UK, this materials recycling facility separates recyclable material using the latest technology. An air knife ejects light material, such as paper, from the size-segregated streams, whilst eddy current separators remove aluminium and electromagnets extract ferrous metals. Optical sorting equipment, capable of detecting and segregating PE and PET materials, is also used to remove all plastic containers to a separate storage bay.

Planning approval was given in April 2007, just four months after SITA UK and Northumberland County Council signed their PFI contract.

ENERGY RECOVERY

Renewable energy

Our energy-from-waste and landfill site gas generation facilities currently generate over one million MWh of electricity a year. This is equivalent to the electricity needs of approximately 220,000 homes.[1]

Wind turbine at Teesside

2007 saw the installation of the first wind turbine at any energy-from-waste facility in the UK. With a 16 kilowatt capacity, the 20 metre high turbine at our Teesside site is already offsetting some of the facility's electricity consumption, helping to maximise its carbon-saving exports to the national grid.

Green fuel

For the first time in the UK, landfill gas is being used to generate a carbon-saving 'green' fuel. In partnership with Gasrec, the UK's first commercial producer of liquid biomethane fuel, liquid biomethane is being generated from landfill gas collected at our Albury landfill site in Surrey. The project to move into fuel production has been in development for four and a half years. The plant obtained its environmental permit to operate in 2007.

Gas is extracted and used in the generation of electricity at over 35 SITA UK sites in the UK. In this instance rather than produce electricity the site has been designed to produce a liquefied fuel. The plant is expected to produce more than five million litres of fuel per year, which is sufficient to fuel up to 150 HGVs or up to 400 LGVs. Used as an alternative to diesel, this will save 15,000 tonnes of CO_2 per year.

Renewable power at Packington

Our landfill site in Packington, near Coventry, has been producing electricity for 21 years.

The original turbine plant was constructed in 1988, with a waste heat boiler and steam turbine added in 1993.

Today, the plant exports an average of 45,000 MWh of electricity per annum. This provides enough power to support over 9,500 homes[1] and off-sets 19,350 tonnes of CO_2 per annum.[2]

The project is classified as a qualifying renewable technology under the government's Renewables Obligation and is awarded Renewables Obligation Certificates (ROCs) for every MWh of electricity exported to the grid.

Approximately three per cent of renewable power in the UK is generated from SITA UK landfill sites.[3]

1 Based on average annual domestic usage of 4,700 kWh per annum, DBERR Digest of UK Energy Statistics 2006.

2 Fixed displacement factor of 0.43kg CO_2 / kWh.

3 Based on 2008 OFGEM Renewables Obligation data.

RESOURCES

Metals

SITA UK is now one of the largest metals recyclers in the UK following its acquisition of the Easco Group in 2007. We process and trade approximately 500,000 tonnes of material each year and operate 11 metals recycling facilities.

The move into metals recycling fits with our strategic aspiration to move our business further up the value chain. We collect ferrous and non-ferrous material from a range of industrial sources. We then grade and separate the material and trade it to end-users within the UK, across Europe and around the world.

Since moving into the metals business, SITA UK has become one of the first recyclers in the country to start checking metals for Smartwater – a forensic liquid used to tackle metal theft, which assigns metal with a unique signature registered to its owner. Metals brought onto SITA UK sites, whether from the general public or scrap metal dealers, are checked under a UV light for traces of Smartwater before being processed. If in any doubt, SITA UK reserves the right to refuse to handle the metals and where necessary will inform the appropriate authorities.

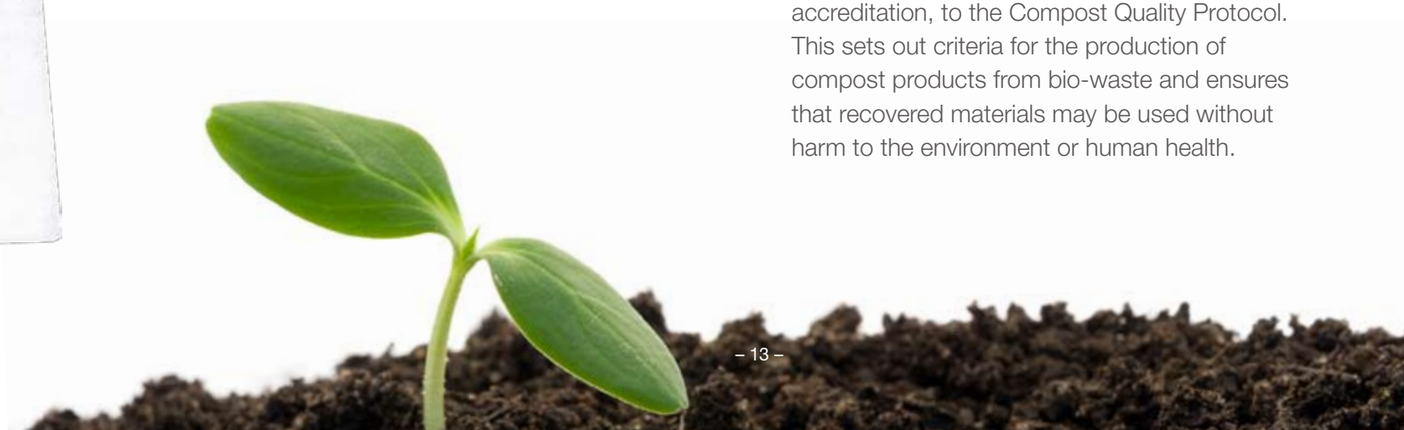
Compost

Turning garden and kitchen wastes into compost reduces pressure on the world's shrinking peat bogs while diverting a significant household waste stream from landfill. Composting is central to our strategy as a resource management service and, increasingly, to local authority waste management strategies. We are dedicated to growing this activity, which involves expanding the market for compost products as well as our production capacity.

In 2007, we developed a mulch for the landscaping and horticulture markets, and a very fine compost used as a top dressing for sports surfaces, including golf courses. Our own-label soil improver, Organo, is already well established, and we also supply compost through the industry's APEX scheme.

Through our work with William Sinclair Horticulture, SITA UK supplies the peat-free element for both the J Arthur Bowers and New Horizons brands of peat-free and peat-reduced compost for sale through Homebase, Wye Vale Garden Centres, B&Q and independent garden centres.

All our composting sites have now been registered, and are working towards accreditation, to the Compost Quality Protocol. This sets out criteria for the production of compost products from bio-waste and ensures that recovered materials may be used without harm to the environment or human health.



MOVING FORWARD

Working towards our vision, we continue to develop solutions for our customers and explore new ways of managing waste and recovering energy.

The circular economy is a collaboration between the manufacturing and service sectors for the collective benefit of the economy and environment. The circular economy works by eliminating waste – raw materials and primary resources are exchanged for materials, energy and utilities drawn from the waste management cycle.

To bring waste management right into the heart of the resource and consumer economy, we need to:

- Conserve natural resources by feeding back into the production cycle secondary materials and energy derived from the waste stream
- Set sectoral industry benchmarks so that production and manufacturing processes are run in the most efficient way possible
- Credit secondary resources for the environmental savings made over the entire life cycle in order to incentivise their use
- Maximise the generation and use of energy and heat from waste carbon, either co-located with industrial or community offtakes, or fed into a power or gas grid
- Encourage more source separation by extending the practice to the commercial and industrial sector
- Stimulate the demand side for recycled materials through green procurement and wider application of extended producer responsibility
- Treat regional waste management facilities as strategic assets to be determined as major infrastructure projects

By pulling together and making a concerted effort to engage in the circular economy, then the vision of living in a society where there is no more waste can become a reality.

TALK TO SITA UK

To talk to us about these proposals, please contact our External Affairs Director, Dr Gev Eduljee, on 01628 513195.

ABOUT SITA UK

SITA UK is a recycling and resource management company. We deliver sustainable and increasingly innovative solutions for the public, local government, industry and commerce, enabling our customers to minimise the impact of their waste on the environment.

SITA UK serves over 12 million people and handles more than 10.9 million tonnes of domestic, commercial and industrial waste through a network of recycling, composting, energy-from-waste and landfill facilities. SITA UK, a subsidiary of SUEZ ENVIRONNEMENT, employs over 5,500 staff and has an annual turnover in excess of £750 million.

In 2008, we recycled 30 per cent of the waste that we handled.

SUEZ ENVIRONNEMENT

SUEZ ENVIRONNEMENT supplies drinking water to 68 million people, provides wastewater treatment services for 44 million people and collects the waste produced by 46 million people. SUEZ ENVIRONNEMENT has 62,000 employees and, with its presence on a global scale, is the world's number one group exclusively dedicated to environmental services.

SITA UK AT A GLANCE

In 2008, SITA UK managed more than 10 million tonnes of waste. We recycled over three million tonnes of this waste. We generated over one million MWh of electricity from our landfill gas and energy-from-waste facilities. All this electricity is enough to power approximately 220,000 homes.[1]

1 Based on average annual domestic usage of 4,700 kWh per annum, DBERR Digest of UK Energy Statistics 2006.

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