



# Circular thinking for a changing world

Sustainable innovation at Veolia UK in 2015



# Welcome to the resources revolution

We see a future in which waste is turned back into resources that power our homes and industry. In smart societies of the future, production and consumption will go hand-in-hand – and one person's waste will become another's resource. We call this the circular economy.

You'll be amazed at how UK commerce, industry and the public sector are already reaping the rewards of a more sustainable way of doing things.



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## Responsible Business of the Year (2016), Business in the Community (BITC)

“Veolia's journey to becoming a circular and resource efficient company is hugely ambitious – not only do they want to change the way they do business, but the way the world works. Through working collaboratively with customers, communities and competitors, Veolia can transform their business while having an impact beyond their own operations.”

Judging panel, BITC Responsible Business of the Year award



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# Q&A with our CEO

## On-track for success, or round in circles?

We catch up with Veolia's Senior Executive Vice-President, UK & Ireland Estelle Brachlianoff on all things circular.



*"We need to be even bolder in realising the endless possibilities that a more sustainable way of life presents for 21st century civilisation."*

**Q:** Veolia won BITC Responsible Business of the Year for its 2015 activities. Why is being a responsible business important to Veolia?

**A:** We firmly believe that being responsible is not just the right thing to do, it is the best thing to do – people want to buy from, work and partner with socially responsible businesses. At Veolia, we have gone through transformational change to address the challenges of the future, adapting our business model in order to contribute to the circular economy through closed-loop solutions, prioritising the employment of disadvantaged people and reducing our carbon emissions. As well as helping the environment, this is having a positive impact on our bottom line.

**Q:** What needs to change to bring about smarter societies?

**A:** Traditional ways of working need to give way to new and more dynamic operations and business models. This will include increased collaboration across industry, commerce and the public sector and a rethink of how products are manufactured and sold in order to create new efficiencies for customers. Today's technologies are limited by old world materials. In the future, materials will be lighter, stronger and greener than those we use today, providing new opportunities for innovation. We have heavily invested in innovation so far and, because I believe ideas stem from diversity, we also keep investing in inclusion and employability, both in the workplace and within our communities.

**Q:** 2015 was also a big year for climate change action. How is Veolia playing its part?

**A:** We think the resources sector can make a realistic 10% contribution to the 2027 UK carbon reduction shortfall through the decarbonisation of energy and the circular economy. Biomass is the cheapest green energy with great potential in the UK. At COP21, we called for a carbon tax set at €30–€40 per tonne of CO<sub>2</sub>. We've also got the ball rolling with our own internal carbon tax at £25 per tonne by 2030. This is not an academic exercise, it will shortly become part and parcel of our investment decisions.

**Q:** So what's next?

**A:** Over 20% of our business is already circular; we want to double that by 2020. To do this, we need to be even bolder in realising the endless possibilities that a more sustainable way of life presents for 21st century civilisation. Our customers are getting on board with the benefits this can bring, drawing on our know-how to think smartly about how they use, recover and generate these valuable resources. We are at the forefront of a new industrial revolution; with an innovative and responsible approach, we can all be winners in a circular economy. Let's not wait to make this happen.

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# Our transformation through innovation

In less than two years, we've transformed our business from an energy, water and waste services provider to one that transforms used materials back into resources that enrich our lives and power our homes and industry.

Along the way, we bring value to the economy, society and the environment – and, of course, to our own business.

## Collaboration = Innovation

Over the years, we've built strong partnerships with the UK government, universities, trade bodies such as the Confederation of British Industry, sector peers, suppliers and – of course – our customers. With a £90 million commitment, our global research and development facility is conducting approximately 70 research programmes.

In 2015, we extended our Innovation Forum competitions to the public, receiving 15 ideas from across the UK.

The two finalists were:

Bio•Bean, turning waste coffee grounds into advanced biofuels; Bag Reborn, a carrier bag that converts into a 60-litre sack for household waste.

## We innovate in energy, water and waste, creating value for...



**Responsible Business of the Year (2016), BITC**



**Queen's Award for Enterprise in Sustainable Development**



**Sustainable Products and Services Award, BITC**



**Leader of the Year, Estelle Brachlianoff (2degrees and edie.net)**

### Society

**354** apprenticeships

Up to **£4** of social value for every £1 spent with the public sector

Lost time injuries down by **3%**

**100+** people recruited from marginalised groups



### Environment

Up to **98%** of customer waste diverted from landfill

**195,000 tonnes** of compost produced at 13 sites

We are **carbon positive**



### Economy

**65%** procurement spend to small/medium enterprises

**Over 14,000** jobs created

Over **60,000** customers across public, commercial and industry sectors

Over **100** hospitals and **3,200** homes heated with low-carbon or renewable energy



### Veolia

**25%** of revenue from manufacturing and selling green energy and green products

**£1 million** revenue generated from sustainable innovation projects



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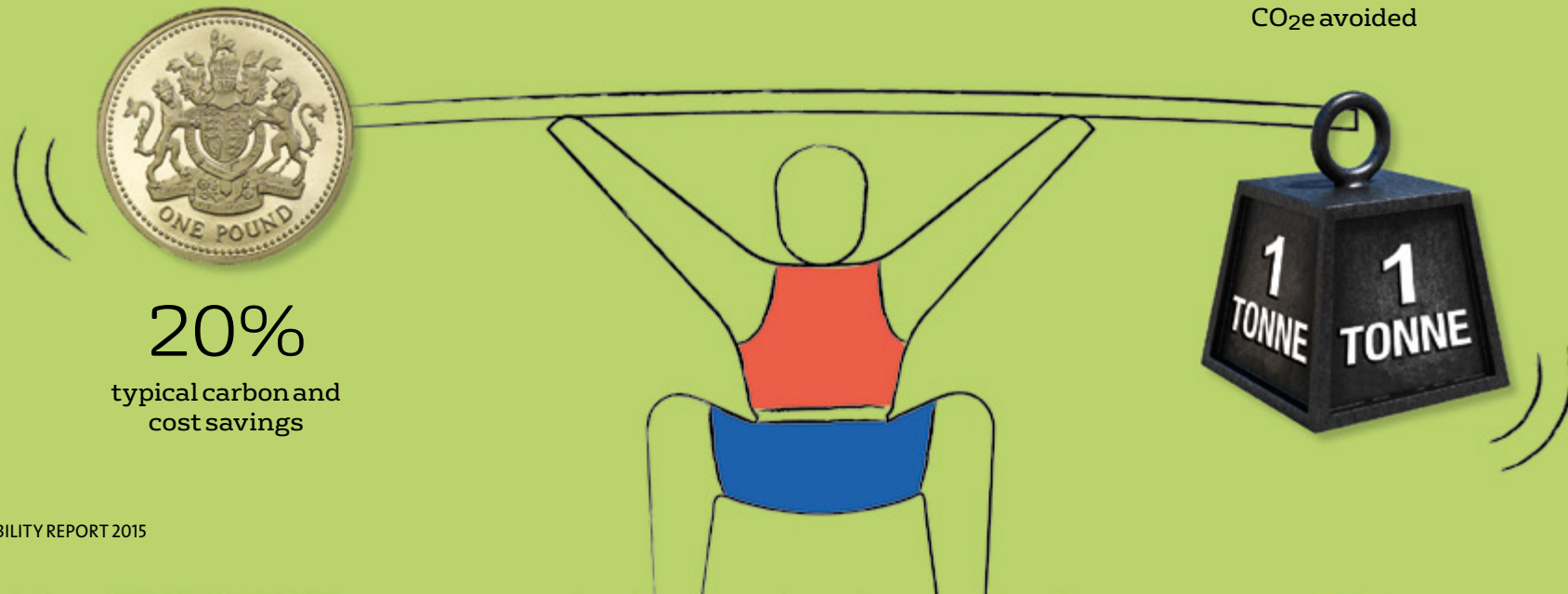
Valuing our people, society and the environment

Future innovation

# Value for customers

## Pushing the boundaries of resource management

Every day at Veolia, our resources experts try to find the right solution for each of our 60,000 customers. These customers, spanning the public, commercial and industrial customers, give us the confidence to dare. And their enthusiasm means we're even more certain that circular is the future. Put simply, our mission is to partner with our customers to improve their bottom line and to do so sustainably. In doing so, we build resilience to risks such as volatile energy prices; we enable business continuity and efficiency; we bring direct cost and carbon savings; and we generate new sources of sustainable revenue.



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VALUE FOR THE:

public sector

Our innovations, such as district heating and energy from waste, typically save customers **20%** in both costs and carbon emissions. When combined with our proactive approach to skills and employment in the community (see pages 22-29), we estimate we can generate social value of up to **£4** for every £1 spent.

We know times are tough for local authorities, schools, universities and hospitals. Our job is to make resources work harder for the public sector, to unlock the value in waste, generate green energy, and maximise energy and water efficiency.



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## Closing the loop on public sector energy

We've worked with the public sector for long enough to know that local authorities, schools, universities and hospitals each have their own priorities and targets.

Whether it's self-sufficient heating for communities or energy-efficiency measures for public buildings - our track record shows we can achieve cost and carbon savings of up to **30%**.

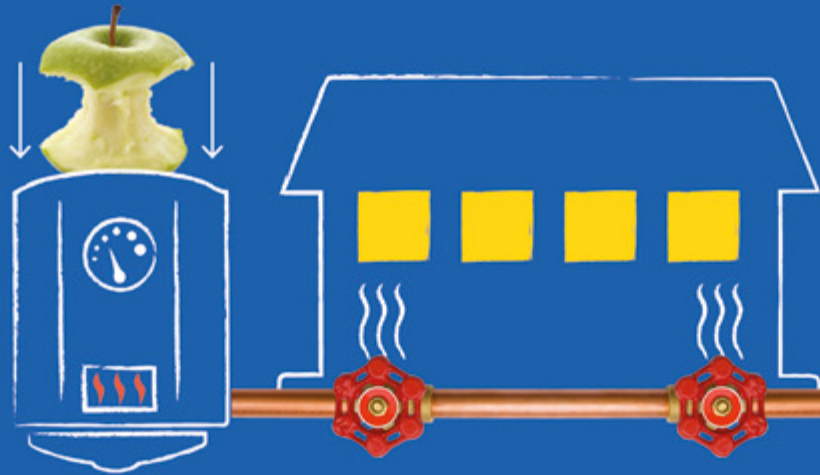


CHPs are more than **twice as efficient** as conventional power stations

### FIRED UP

By powering and heating many thousands of homes, a single district heating system can dramatically reduce a city's carbon footprint and dependence on fossil fuels, while keeping energy bills low for residents. Our combined heat and power (CHP) units turn gas, biomass and household waste into low-carbon energy. For over 40 years, we've built a reputation for designing, building, operating and even financing CHP schemes.

We find this solution appeals to local authorities balancing reducing fuel poverty with obligations around carbon. The model also lends itself to university campuses and hospitals with a large on-site population.



**500,000** tonnes of CO<sub>2</sub> savings in the last five years from CHP units in district heating schemes



**200,000+** students benefit from lower cost, lower carbon energy

Over **100** hospitals and **29,500** homes supplied with zero carbon heat and hot water from biomass (waste wood)



## Worthless waste: an urban myth?

What sets us apart from other resource management companies is our ability to extract value from waste that would have ended up as landfill. As well as increasing recycling and waste recovery by up to **70%**, we've identified lucrative revenue streams from mining waste for precious resources.

### LEARNING ON THE JOB

We've become accredited to **Birmingham City Council's** Business Charter for Social Responsibility. As well as offering 150 hours of work experience and 12 apprenticeships, we helped social enterprise Jericho with its 'ReUser' programme to repurpose unwanted household items.



### HELPING COUNCILS IN TOUGH TIMES

We're working with our customer Watford Borough Council to inspire the community to live sustainably. What's more, we've recruited 55% of people locally and given 160 hours of volunteering time in Watford neighbourhoods.

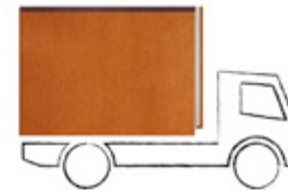


We have recruited **55%** of people locally



**The streets are paved with gold...and silver and platinum**

Our technology is finding treasure in simple street sweepings, bringing our customers new revenue and driving down street landfill waste to just 10%



We've funded a book designed to engage children in sustainability. It will be distributed to all Year 5 pupils at **320 schools** in the Birmingham area

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Spotlight on:

# Hospitals

Balancing today's needs for providing the best possible healthcare, while maintaining the complex infrastructure is an ongoing challenge faced by every health authority.

## Over 100 hospitals

served, that's 43,500 patient beds



Providing heating and power to  
**7.9 million patients**



## 100%

guaranteed  
energy supply  
allows for  
hospitals to  
rely less on  
the grid



## 75 MWe

of green energy generated,  
equivalent to powering  
199,090 homes



We have avoided carbon  
emissions of

## 100,750 tonnes

CO<sub>2</sub> equivalent in the  
last five years



This is equivalent  
to taking

## 59,000 cars

off the road  
each year



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VALUE FOR THE:

commercial sector

Transforming waste into energy and green products: we can help our commercial customers and save money. Whether it's avoiding landfill, or exploring water efficiencies and improving energy usage, we have the expertise to help businesses big and small exceed their environmental targets.

Up to 10% savings in cost and carbon through energy optimisation



“Waste is no longer wasted. Our expertise transforms unrecyclable waste and sludge into energy, and innovation now gives us precious metals from street sweepings, and plastics from sewage. By realising the potential we are now helping communities – through jobs for marginalised groups, lowered fuel poverty, and a cleaner, healthier environment.”

**Gavin Graveson, Chief Operating Officer – Public and Commercial in the UK**

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## Energised enterprise

We save our customers around **30%** in cost and carbon by creating energy from waste, and make **20%** savings by extracting new resources from waste.

We recognise that energy bills have a direct impact on the business bottom line. We also know that commercial waste can be a costly burden.



Our greenhouse gas tracker tool has been used annually for **Clarks** since 2012. In 2015, the emissions avoided from the treatment of Clarks' waste was **72.6 tonnes**, offsetting the emissions generated through the full process

## MEASURING AND MANAGING

Veolia's Energy Audit team has helped customers implement energy management solutions that span the entire energy cycle (Generation, Transformation, Distribution, Utilisation and Operations) in line with ISO 50001 and the Energy Savings Opportunity Scheme (ESOS), as well as delivering bespoke audits and solutions, tailored to the specific needs of our customers.

Typical savings of **up to 20%** can be identified through energy audits for individual customers.



## THE RETURN OF STEAM POWER, MANCHESTER AND YORKSHIRE

We are helping business customers divert increasing quantities of waste from landfill. Our dedicated plant at Trafford Park processes mixed residual waste from the area's businesses and turns it into Refuse Derived Fuel (RDF), which is sent on to an energy recovery facility at Ferrybridge, Yorkshire.

Here, it's turned into steam and sold back into the UK National Grid as low-carbon green energy. What makes our offer even more sustainable is the fact that both our processing facility and our supply chain are local (many of our competitors process RDF overseas). This ensures an operation that is efficient in both costs and carbon.





## REAL-TIME RESOURCE MANAGEMENT

Through our Hubgrade smart monitoring centres, we help businesses monitor their water, energy and waste. **Our analysts monitor real-time data** to improve the management of resources for municipal, commercial and industrial customers.

Each can be scaled up to manage data from buildings, municipal water networks, district heating and cooling networks, waste management facilities and industrial installations.



## BIOGAS: A WONDER-FUEL?

Biogas is derived from the natural breakdown of organic matter. It's emitted from landfill and can also be produced using a process called anaerobic digestion. Harnessing biogas as a fuel is a win-win; it avoids its release into the atmosphere and is a renewable energy supply for industry, reducing reliance on fossil fuels.

Our network of anaerobic digestion facilities turns food waste, sewage, effluent and **process by-products into renewable gas**, which can be used in CHP to generate electricity and heat for industry and homes. It's also injected into the mains gas grid as a form of renewable energy available nationwide.



VALUE FOR THE:

commercial sector

Spotlight on:

## Airports

We help airports run seamlessly by installing the smartest technology and keeping a watchful eye on energy, water and wastewater networks.

Airport leaks more than halved



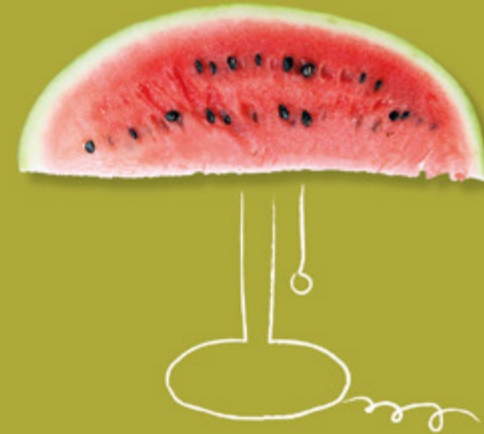
£4.4 million

worth of cost savings discovered at one airport



8 MW

of green energy generated



Strong health and safety performance

with 0 accidents and injuries



An average of 3,000 meter readings

from our utility metering each month



Supporting the movements of over 139 million passengers across UK airports



Over 15 years

is our average customer relationship



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VALUE FOR THE:

industrial sector

A reliable energy and water supply is critical for UK industry. By generating power closer to home and recycling water, we keep the lights on and the costs down.

*Our customers are all users of energy and resources. By working with them to reduce their impact on the environment, as well as their running costs, we make them more sustainable. In this way both their climate and economic targets are met."*

**Kevin Hurst, Chief Operating Officer, Industrial Customers**

Waste (including hazardous waste) and wastewater for reuse or sale can bring up to

**20% savings**  
for cost and carbon



158,000 tonnes of carbon a year avoided for our industrial CHP customers – that's the same as removing

**91,000 cars**  
from the road



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# Energy independence

Imagine the possibility of continuous energy that's cheaper and cleaner. Imagine industry powered by its own waste; no longer reliant on the National Grid. Imagine no more – this is already possible for Veolia customers.

Over 20 years, we've been meeting the expectations of UK industry for consistently affordable fuel that's low in carbon and meets environmental and regulatory standards.



Our award-winning steam generating plant drives Europe's largest canning factory, helping to reduce carbon emissions on site by **40%** while saving **Kraft Heinz £400,000** a year in the cost of energy

## WOOD CHIPS = HOT WATER

Situated on a former industrial site in Tottenham, London, Hale village is a mixed-use development that includes 2,220 eco-friendly homes, commercial floorspace and community facilities. Our customer, Hale Village Properties, needed to be confident that each new home was low carbon and sustainable. So they approached Veolia to design, install and operate a centralised district heating system that would supply renewable heat and hot water to residents. The biomass boilers we installed burn life-expired wood pellets, creating carbon-neutral heat that's distributed to the buildings via an underground distribution network.

We operate the system 24/7, guaranteeing uninterrupted renewable heating and hot water. By using wood chips that would otherwise have ended up as waste (and yet are A-grade quality for burning), we reduce landfill and create a carbon-neutral, renewable fuel supply. We also help Hale Village Properties achieve Code Level 4 for Sustainable Homes and meet London Climate Change zone requirements.



Guaranteed biomass fuel supply

24/7 operation and maintenance

Reduced emissions and costs



We're helping drinks giant **Diageo** create heat from the by-products of whisky production at their Roseisle distillery. Our technology saves Diageo **13,000 tonnes** of carbon and **326,000 cubic metres** of water a year

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# Water: a revenue stream

As parts of the UK become drier<sup>1</sup> and water treatment becomes increasingly expensive, many industrial customers have sought tools to reduce water wastage and boost water recycling systems.

Managing this scarce resource not only reduces current operational costs – it also creates new revenue streams as surplus water is sold into the market.

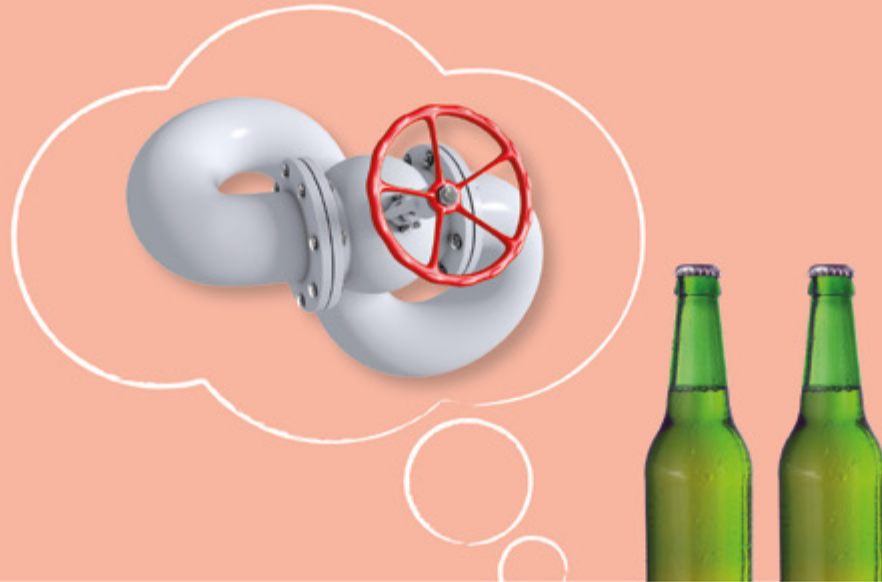


Over **4,700 tonnes** of solvents recovered and reused for use in paint thinners

## BEVERAGE: FROM PIPE DREAM TO REALITY

Looking to reduce their water consumption by 25% by 2020, one of our beverage customers knew it needed to tackle water loss in its borehole water treatment system. Combining our water reuse expertise and our online water calculator with their knowledge of cider production, we came to the conclusion that the mill could halve its water use, while maintaining the quality needed for boilers and reducing energy and chemical use.

Our solution is now reducing the mill's water footprint by more than 130,000m<sup>3</sup> a year and saving the company **£100,000 a year**.



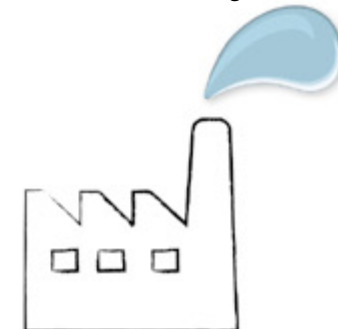
<sup>1</sup> Southern England has received 30% less rainfall since 2004, yet domestic demand for water has risen by over 10%



**85%** cost savings from water recovery for our customers



**Did you know?** Almost a quarter of water used globally is used by the industrial sector. As pressure builds to manage this scarce resource, Veolia has been partnering with industrial customers to maximise their environmental impact and cut their water usage



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# Dismantling complexity – industrial assets and hazardous waste

Managing, dismantling and recycling industrial end-of-life assets such as refineries and oil rigs require a responsible approach with innovative resource recovery. Veolia has specialised in responsibly treating, recovering and recycling hazardous waste and industrial waste in a manner that is sensitive and sustainable.

We offer safe treatment, recovery and recycling. We also ensure full compliance with environmental legislation.



**98.9%** reuse and recycling rate when decommissioning North Sea oil platforms

## NORTH SEA DECOMMISSIONING 2.0

We decontaminate, demolish and recycle complex offshore and onshore rigs. With safety and environmental standards at the centre of our approach, we guide customers through each stage of the process, from project management and Front End Engineering and Design (FEED) studies, to green accounting.

Take our customer Shell – we are decommissioning and recycling gas platforms from the North Sea. Shell's structures are to be recycled at our licensed facility, meeting Shell's environmental and safety standards, while delivering cost savings.



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VALUE FOR THE:

industrial sector

Spotlight on:

# Food and Beverage

We help the food industry reduce its environmental footprint and face 21st century resource challenges.

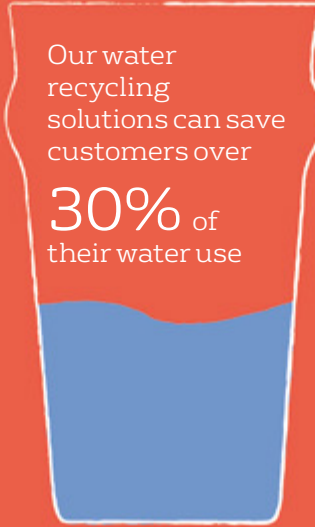
76%

waste diversion from landfill



Our water recycling solutions can save customers over

30% of their water use



We treat

1.25 million

cubic metres of water each year



310,000 tonnes

of food waste used to generate

bioenergy

or products

56,000 tonnes

CO<sub>2</sub>e saved for one customer each year through the production of green energy, biomass and plant optimisation



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VALUE FOR:

water companies

We design, build and manage water and wastewater services and infrastructure, from pipe networks to pumping stations, for municipal water companies and local authorities.

We also help our customers cut their carbon footprint through the treatment, disposal and recycling of biosolids.

Our water and wastewater customers partner with Veolia to **turn sludge into energy** and build treatment plants that are self-sufficient in energy. We also help customers reduce water leakage and specialise in maintaining critical assets in high-security areas. This can reduce infrastructure running costs

by around **10%** and ensure a secure and reliable water supply

*“We need to stop relying on fossil fuels when wastewater sludges could make a further significant contribution to meeting our renewable energy requirements, while keeping the lights on and taking pressure from the National Grid.”*

**John Abraham, Chief Operating Officer, Water**



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# Optimisation

We can enhance the efficiency and sustainability of vital utility services through our optimised operations and maintenance approach.

Looking at systems and resources holistically, we can ensure the quality and security of water supplies, minimise water loss and deliver cost savings.

We helped one customer bring down their water leakages by **over 50%**, with surplus portable water being exported to a neighbouring water company



We helped one customer meet their 2020 commitment to achieve a **25% reduction** in gross water usage 11 years early!

## VOOM! SPEEDY OPERATIONAL OPTIMISATION FOR NORTHERN IRELAND WATER

Ballyrickard wastewater treatment works forms part of Northern Ireland Water (Omega PFI contract). Site maintenance records indicated that reactive maintenance was having a significant impact on costs. Several critical assets had also failed and the sludge dewatering performance was lower than expected.

Veolia's Optimised Operations and Maintenance, or **VOOM**, is a cutting-edge management solution to deliver cost savings through resource efficiency and optimisation of systems and processes. Through VOOM, Veolia helped Ballyrickard Wastewater achieve:



**40% fewer** hours spent on reactive maintenance by mechanical and electrical technicians

**31% reduction** in equipment maintenance costs

**7% reduction** in energy use, saving £64,000

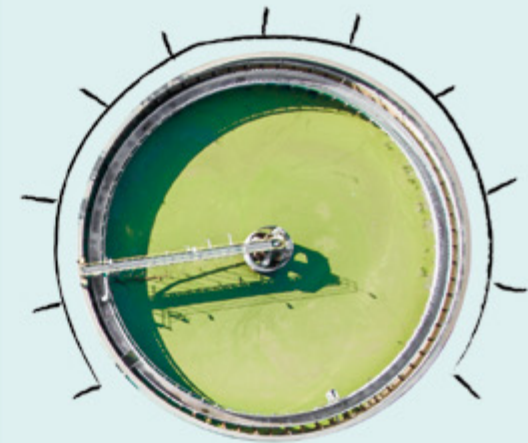
*“VOOM has provided a framework for delivering consistent operational stability and asset performance...allowing us to drive efficiencies from the ‘ground up’, across our wastewater treatment assets.”*

**Nick O'Hara, Omega Wastewater Operations Manager**

## SOUTH WEST WATER

Veolia used operational optimisations to help South West Water, one of the 10 water and sewerage companies in England and Wales, to achieve their best sludge operational performance since their facilities opened. Sludge now consistently meets the required Hazard Analysis and Critical Control (HACCP) standard for agricultural use and the overall cost of sludge treatment has reduced significantly.

Through operational asset optimisation, we deliver **savings of up to 10%** of operational costs





VALUE FOR:

water companies

Spotlight on:

# Water companies

Our aim is simple – to help our customers reduce costs and improve the efficiency of their water and wastewater infrastructure.

Early leak detection on water networks can save up to

10%

of water loss, and achieve over

10%

reduction in energy and chemical use



150,000 tonnes

of biosolids sent to agricultural land each year as an alternative to chemical-based fertiliser – saving over

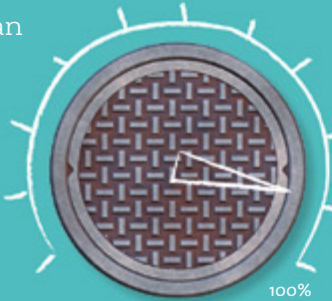
1,000 tonnes

of phosphate



Smart sewer control can improve compliance and reduce combined sewer overflow (CSO) pollution spills by

90%



Capital spend can be reduced by

35%

and energy use by

8%

9 MWe

of installed renewable energy generation capacity, enough to power 23,890 homes



4 million+

people served in the UK through Veolia's water and wastewater treatment, and over

94 million

worldwide



50%

reduction in burst mains incidents through monitoring water networks and predicting pipe failures



Implementing intelligent technology to optimise wastewater and treatment plants, which cuts energy consumption by up to 12% and chemical use by up to

24%



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# Valuing our people, society and the environment

## Driven by the circular economy, led by employees and local communities

Every day, Veolia people find innovative solutions for a more sustainable future – solutions designed to meet local needs in diverse communities.

This calls for ongoing dialogue with charity partners and NGOs, governments, think tanks, sector peers, suppliers and customers to bring about lasting social value. It also means leading the way on resource efficiency and environmental protection in our own operations.



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## A better business

Our diverse workforce is at the heart of Veolia's success in finding innovative solutions for a circular economy. At the same time, the safety and wellbeing of our people remain our top priorities in our day-to-day business.



We're helping Southwark Council turn Londoners' discarded plastic bags into new rubbish sacks. Bag2Bag is an initiative that came out of our **Innovation Forum**. It became a fully fledged business in 2015.

**£1 million**

revenue generated from Innovation Forum projects



*We need to nurture and deliver scalable solutions like these that we see as absolutely business-critical if we are to build smart cities that close the loop on production and consumption."*

**Richard Kirkman**  
Technical Director

## INCLUSION MEANS INNOVATION

One of the benefits of a diverse workforce is the range of skills, experience, opinions and ideas we can call upon. There are so many formal and informal ways in which our people can help us to stay at the forefront of innovation, including performance reviews, road shows and training, and submitting suggestions to our regular Innovation Forums.

In 2015, the Veolia Women in Leadership programme was extended to the UK and Ireland and, during the year, more than 900 employees completed the Inspirational Leader course. Ideas generated during the programme have already delivered **savings of £125,000**.



### Helping consumers to Live Circular

As a group, we've created an online information hub called Living Circular that showcases the inspiring examples of what's happening out there. This platform is about far more than Veolia; it's a way to celebrate game-changers from all pockets of society.

## DRIVING DIVERSITY

We believe that if colleagues around the table all look the same, come from the same background and have the same professional history, you end up reproducing the same things without moving forwards.

So in 2015, we conducted research into our workforce demographic, and found that we needed to improve the applicant-to-hire ratio for females (currently 25% applicants to 12% hires). We also surveyed a group of 25-39-year-old employees to understand how we could increase retention.

Armed with this insight, we will keep pushing ourselves to improve gender balance and diversity across the business.



**A third** of the Veolia Board is female, that's 10% more than the FTSE100 average



**2%** increase in employee perception of how inclusive Veolia is as a work environment and its commitment to advancing equal opportunities

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## Health and safety

We have a duty to maintain the highest standards of health and safety throughout our business. To achieve our ambition of zero accidents, we look to identify potential risks, raise awareness and find ways to prevent incidents. Our efforts include initiatives such as Veolia Safety Week and our behavioural safety management programme, 'Think Safe, Work Safe, Home Safe'.

### Engaging and protecting our employees

We gave safety training to 3,000 people at all levels in 2015. Thanks to our combined approach to training, changing attitudes and improving the visual identity of health and safety at Veolia, we saw a 6.3% reduction in accidents in 2015 (1,767 accidents). We also reduced our Lost Time Injury Frequency rate to 3.47 (up from 3.43). Although this exceeds our global goal of achieving an injury frequency rate of lower than 6.5, a priority for 2016 will be embedding a culture that makes safety second nature.

### MAKING SAFETY SECOND NATURE

In 2015, Veolia filmed and launched a new visitor safety induction. The film featured colleagues from Veolia delivering key safety messages to our visitors with the emphasis on accident prevention.

Every visitor entering a Veolia site is required to watch this film and complete an accompanying questionnaire to ensure that they have understood what their health and safety responsibilities are when on site.



Health and safety performance <sup>1</sup>	2013	2014	2015
Accidents	1,910	1,885	1,767
Lost Time Incidents (LTI)	104	97	100
Days lost	3,609	3,276	3,589
Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)	139	120	113
Lost Time Injury Frequency Rate (LTIFR)	4.18	3.43	3.47
Lost Time Injury Severity Rate (LTISR)	0.12	0.11	0.12

<sup>1</sup>2015 data verified by Lloyd's Register Quality Assurance Ltd



### SLEEPERS IN BINS CAMPAIGN

In 2015, Veolia produced a film highlighting the increasing problem of vulnerable people sheltering in waste bins, following a number of deaths and serious injuries. All Veolia drivers and operational staff watched the film to encourage them to report any instances of people found sleeping rough in our waste containers. Our sales teams were also briefed to improve how we engage with our customers on this issue.

Finally, the project involved reaching out to homeless charities to publicise the dangers of sleeping in bins.



## Local opportunities for local people

As well as the social payback of our contracts with the public sector, we actively invest in enhancing the life chances for those marginalised in society by offering jobs and training in our communities. We do this because it's the right thing to do and also because it's critical to ensuring we attract and keep talent - now and in the future.

### Future-proofing Veolia

In 2015, there were around 1.8 million people in the UK looking for work<sup>1</sup>. This group included the long-term unemployed, young people outside the education and training system, homeless people and former military personnel.

In our own sector, we continued to witness an increasing skills gap in operative and technical roles for waste, water and energy management. By working with partners such as Jobcentre Plus, Blue Sky, local schools and governments, Veolia creates training and development opportunities that bring measurable social value and build a circular economy - critical for our own future success.



Our charity partner, **FoodCycle**, combines volunteers, surplus food and spare kitchen spaces to create tasty, nutritious meals for people at risk of food poverty and social isolation. Veolia will continue to support FoodCycle to expand their local reach

## A FRESH START, CAMDEN

We've been working with the London Borough of Camden, the Department for Work and Pensions, and Westminster Kingsway College to set up a Street Cleansing Academy. The Academy offers pre-employment training in customer service, teamwork and health and safety, as well as two days of work experience and a day of interview coaching. From nine candidates in 2015, **five secured positions within the Veolia Camden team**. All five recruits had previously been unemployed for periods of between 18 months and 14 years.



*I've been six years out of work and felt the only way I would get a job would be for someone to see me do the job - I would never get an interview. To have a wage again after six years has totally changed my life."*

**David Evans, Street Cleansing Operative in London Borough of Camden**



<sup>1</sup>Office for National Statistics defines as those not in work but seeking and available to work

## BEN THOMPSON, APPRENTICE OF THE YEAR

At 22, Ben Thompson has been working as an engineer apprentice in one of our District Energy teams, helping turn black bag waste into power for 150 buildings. Ben has now completed an Advanced Level Apprenticeship in engineering, including a Level 3 Diploma in engineering maintenance and a BTEC Level 3 Diploma in mechanical engineering, passing with double distinctions.

Ben was presented with his award by Skills Minister Nick Boles MP and Veolia Senior Executive Vice-President, UK & Ireland Estelle Brachlianoff.



*As a two-time winner of the National Vocational Qualifications Employer of the Year award, we see many of our future leaders emerging from our apprenticeship programme which is central to our investment in the company's long-term development."*

**Estelle Brachlianoff**



**354**  
apprenticeships delivered in the UK – exceeding our target of 300

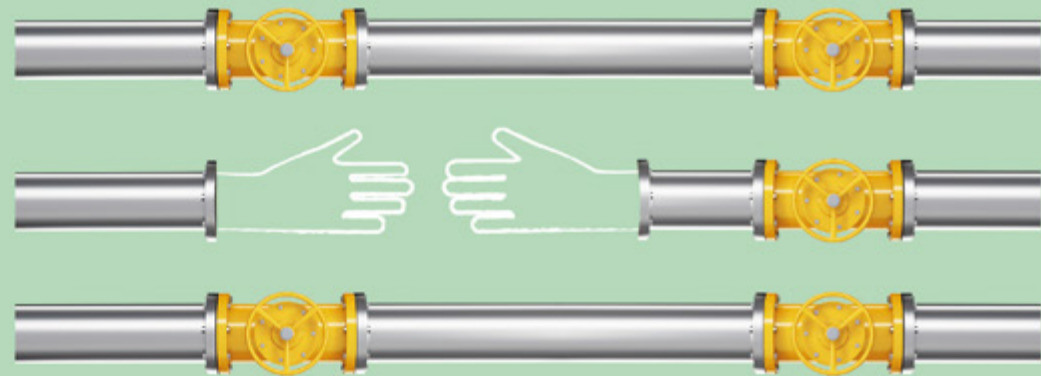


Investors in People award,  
**Gold**

## GETTING TO KNOW OUR NEIGHBOURS

At our thermal processing site in Ellesmere Port in the North West, we worked with the organisation Tomorrow's Engineers to offer three maintenance apprenticeships.

As well as strategically tackling science, technology, engineering and maths shortfalls in the area, we are also making a more direct contribution to local issues. For example, we've sponsored 60 school children to attend a science workshop at Catalyst, a science discovery centre in Cheshire, and we've partnered with Drugwatch to supply drug awareness booklets to 300 local children.



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## SMALL AND LOCAL - 65% SME SPEND

We only work with suppliers that meet our social and environmental standards (as defined by our Supply Chain policy) and we audit those considered to be high risk. Wherever possible, we do business with small, local suppliers. In 2015, small and medium-sized enterprises (SMEs) received over 65% of the £831 million procurement spend in our waste and water business.



**SMEs received  
over 65%**

of the £831 million procurement spend

## MODERN DAY SLAVERY: ZERO TOLERANCE

We encourage sustainable procurement that supports human rights, social welfare and protection of the environment. Following the Modern Day Slavery Act, which came into force in 2015, we amended our Sustainable Procurement policy. We are also developing a statement on the Modern Day Slavery Act to ensure there is no modern slavery in our business and supply chains. This will be available by the end of 2016.



**87% of suppliers** think Veolia is an ethical business and **83%** think our payment terms are realistic (2015 supplier survey)



**59% of our framework agreements** have had the sustainable development clauses signed by the suppliers

# Staying positive

We help our customers save **2.2 million tonnes** of carbon each year; we are also a carbon positive business, meaning we save more carbon than we emit. Our global goal is to reduce carbon by 100 million tonnes and avoid 50 million tonnes of emissions by 2020.



Over **545,000** MWh of electricity generated from landfill



Over **1.1 million** MWh of electricity generated from Energy Recovery Facilities



**2.2 million** tonnes CO<sub>2</sub>e avoided

In 2015, we established an energy-efficiency strategy, with technical key performance indicators for major energy sites. Given that travel accounts for 2.7% of our energy use, we invested over £1 million to retrofit 3,000 vehicles with smart telematics systems to improve efficiency as well as safety. Performance monitoring of energy sites will be a focus for operational efficiency in 2016.

Our environmental performance <sup>1</sup>			
Direct (scope 1) emissions (tonnes CO <sub>2</sub> e)	2013	2014	2015
Waste	1,133,663	1,244,562	1,247,280
Water	5,428	3,789	6,106
Energy	-	396,127	644,359
<b>Total</b>	<b>1,139,091</b>	<b>1,644,478</b>	<b>1,594,880</b>
Indirect (scope 2) emissions (tonnes CO <sub>2</sub> e)	2013	2014	2015
Waste	32,766	34,219	35,207
Water	36,613	41,601	40,001
Energy	-	11,231	9,425
<b>Total</b>	<b>69,379</b>	<b>87,051</b>	<b>84,633</b>
Avoided emissions (tonnes CO <sub>2</sub> e)	2013	2014	2015
Waste	1,202,780	1,366,912	1,322,976
Water	134	167	41
Energy <sup>2</sup>	-	386,728	829,702
<b>Total</b>	<b>1,202,314</b>	<b>1,753,807</b>	<b>2,152,720</b>

Carbon performance ratio (CPR) <sup>3</sup>	
2013 (Waste and Water)	1.0
2014 (Waste, Water and Energy)	1.01
2015 (Waste, Water and Energy)	1.09

<sup>1</sup> 2015 data verified by Lloyd's Register Quality Assurance Ltd

<sup>2</sup> CO<sub>2</sub> figure including CHP figures

<sup>3</sup> CPR is the calculation of avoided emissions divided by the total of direct and indirect emissions



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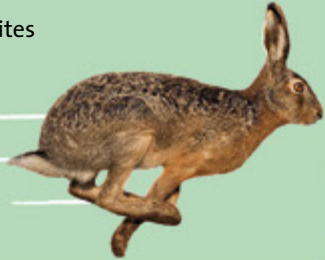
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## LEADING OUR SECTOR IN COMPLIANCE

The Compliance Classification Scheme is used by the Environment Agency to note any non-conformances in relation to environmental permit conditions.

In 2015, **95.29%** of permitted sites in Veolia were bands A and B, showing us to be leaders in compliance across our sector.



## BIODIVERSITY TOOLKIT

Many of our operational sites offer important habitats for wildlife. Using our own tried and tested biodiversity toolkits, we are implementing action plans at all our sites with significant ecological interest.

Our approach emphasises working in partnership with local environmental associations and communities. By working together, we can target the most threatened species and be more efficient and credible. Our global goal by 2020 is to carry out a review and implement an **action plan at 100% of sites** with significant biodiversity issues.



## OUR WASTEWATER TREATMENT PLANTS

In 2015, Veolia treated over 300,000 cu. m/d of wastewater in Scotland (at Stirling Water Seafield) and achieved 100% compliance of discharged water. Operated on behalf of Scottish Water, the site meets European Wastewater Directive Standards and Scottish Environment Protection Agency (SEPA) requirements and increased biogas production by 10%, **improving its self-sufficiency in energy to 56%.**

*“Our investment in the thermal hydrolysis process at Seafield has resulted in immediate returns and with the replacement of one of the three engines and ongoing operating improvements we are forecasting a self-sufficiency rating in excess of 75% for 2016 increasing to greater than 85% for 2017.”*

**Mark Keast, Veolia's Seafield General Manager**



**2 beehives** installed at our Integrated Waste Management facility in Southwark. Honey harvested will be sold to raise funds for FoodCycle



# Future innovation

## Tomorrow's challenges...

There are more people living on this planet right now, than have ever lived. With current rates of consumption, we will soon need three earths instead of one. For our customers, tomorrow's environmental, social and economic challenges will require action and innovation today.

On the back of Veolia's 2015 sustainability performance, we are working with our customers to leverage existing technologies to improve resource efficiencies and cut carbon emissions to meet the needs of business and society.



**70%**  
of the world's population  
will be living in urban areas  
by 2050. But there exists  
a skills gap to design, build  
and sustain efficient urban  
infrastructure



**55%**  
increase in global  
water demand  
expected by 2050

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## ...demand smart thinking

It is only by reflecting on past sustainability performance and future trends that Veolia can develop the next generation of innovative environmental and commercial tools to help realise the circular economy and build smart cities.

Our *Imagine 2050* project sees us working with futurologists, academics and customers to explore future scenarios. We have now co-created two reports as part of *Imagine 2050* – the first on [future cities](#); the second on the future of [water, waste and energy](#).



“Meeting humanity’s rapidly growing consumption needs, with finite resources on a planet that is already under stress, requires more than greater resource efficiency. With three billion new middle-class consumers anticipated by 2030, new business models must be explored if we are to continue to thrive.”

**Dr Nick Voulvoulis, Reader in Environmental Technology, Imperial College London**

### Manufacturing



Trend #1  
Hyper-efficient business models



Trend #2  
New generation materials



Trend #3  
Rise of robotics

**58%** of British manufacturers have invested in automation and/or robotics

### Pharmaceuticals and chemical



Trend #1  
From waste to want



Trend #2  
Emotional investment



Trend #3  
Food but not as we know it

The number of health apps downloaded has more than **doubled** over the past 2.5 years

### Food and beverage



Trend #1  
New dynamics



Trend #2  
Personalised health



Trend #3  
Biofuture

**30%** of the world’s population already eat insects as part of their diet

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Veolia UK Sustainability Report 2015: This Report covers all Veolia water, energy, recycling and waste management operations across the UK. Lloyd's Register Quality Assurance Ltd (LRQA) was commissioned by Veolia to assure our 2015 Health and safety performance table (p.24) and 2015 Environmental performance table (p.28).

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