



Multidisciplinary
consultancy for energy,
water and industry.

Engineering your morning

While you're sleeping we're preparing your morning





Helping to secure energy for homes and business

In this house, the day wouldn't start without electricity – because the radio alarm clock wouldn't work. In the UK, we take electricity for granted, but behind the scenes a lot of effort goes into ensuring we all have affordable, reliable and increasingly sustainable power.

WSP works with the companies generating, transmitting and distributing electricity. Our projects include securing supply into the country via undersea cables, extending the life of the network and transitioning to a smarter grid powered by renewable energy.

Making electricity as simple as flicking a switch is a complicated business.



Supporting the production of innovative natural fibres

Who would have thought that bedding made from trees could be so comfortable? Derived from sustainable sources of wood, the latest natural fibres are incredibly soft and breathable – helping you get a great night's sleep.

What have engineering consultants got to do with comfy sheets, pillows and duvet covers? Our expertise in designing specialised spinning equipment for fibre manufacturers goes back a long way. Today we draw on this experience to create machinery that helps our clients innovate.

And when manufacturers need to update or expand their facilities, we deploy the engineering skills they need to deliver major construction projects.

A lot of hard work goes into creating the fibres that help you take it easy.



Exploring the use of hydrogen in the gas network

You don't generally give your central heating much thought (unless your boiler breaks down, of course). But how we heat our homes might soon change.

The vast majority of home heating in the UK comes from gas boilers. In the long-term, relying on diminishing reserves of this fossil fuel isn't sustainable. And it's doubtful that switching to electric heating could meet demand.

Against this backdrop, WSP is working with clients to explore the use of hydrogen in the gas network. This will allow the continued use of fossil fuels without the associated carbon emissions, while making use of existing pipes and other infrastructure.

Nobody yet knows exactly how this will work, but we're collaborating with the industry to help find ways that the country can keep cosy while cutting carbon.



Bringing battery storage online

Would you be surprised to learn that powerful batteries could be helping to power the lights in your home? Well, in the energy sector, our engineers are increasingly working on battery storage projects.

As renewables supply a greater proportion of the UK's energy, battery storage helps even out intermittent power from sources such as wind and solar. Designing battery storage for a solar farm, for example, enables it to export power to the grid even at night or on cloudy days.

Battery storage for key points in the grid also provides stability and helps accommodate periods of peak demand – such as when you turn on the light switch in the morning.



Keeping the cost of water low for customers

Tap water in the UK is so cheap that most people don't give the cost much thought. Did you know that it costs only pennies to fill a whole bucket with drinking water? And did you know that WSP is helping to keep costs low?

We support water companies to minimise costs for both supplying clean water and treating wastewater. We also help them operate their systems efficiently – by preventing leaks, for example. This all enables prices to remain as low as possible.

Something as simple as turning on a tap, though, can also lead to big issues. We help clients prepare for the future by developing new sources of water, or by looking at how waste in the system can be used – for example to generate energy – as part of a circular economy.

So it turns out there's more to turning on the tap than you might think.



Designing hi-tech pharmaceutical facilities

Have you ever stopped to wonder how the medicines in your bathroom cabinet were made?

Pharmaceutical research and production facilities demand the very highest standards of design. At WSP, we design and engineer industrial buildings for difficult or hazardous processes – including facilities to research diseases such as cancer.

We offer architectural design that meets stringent requirements for cleanliness and containment. We also design highly specialised heating, ventilation and air-conditioning systems that ensure absolutely nothing drawn from the room can reach the atmosphere.

With the very best facilities to work in, our clients develop the vital drugs such as antibiotics that help keep you healthy.



Engineering household chemical plants

You're probably too busy in the morning to read the ingredients on a bottle of shower gel or a tube of toothpaste. If you did, you'd see that products like these rely on a long list of chemicals, all of which have to be produced in specialised facilities.

Our industrial expertise supports clients who make chemicals such as fumed silica – a key ingredient in toothpaste, amongst other things – by providing the specialist skills they need to keep their plants running smoothly.

WSP's project management, construction management and multidisciplinary design teams all work together to deliver projects that maintain, improve or expand plants.

We've worked with some clients on their production facilities for over a decade. That's a lot of chemicals for a lot of toiletries for a lot of morning showers.

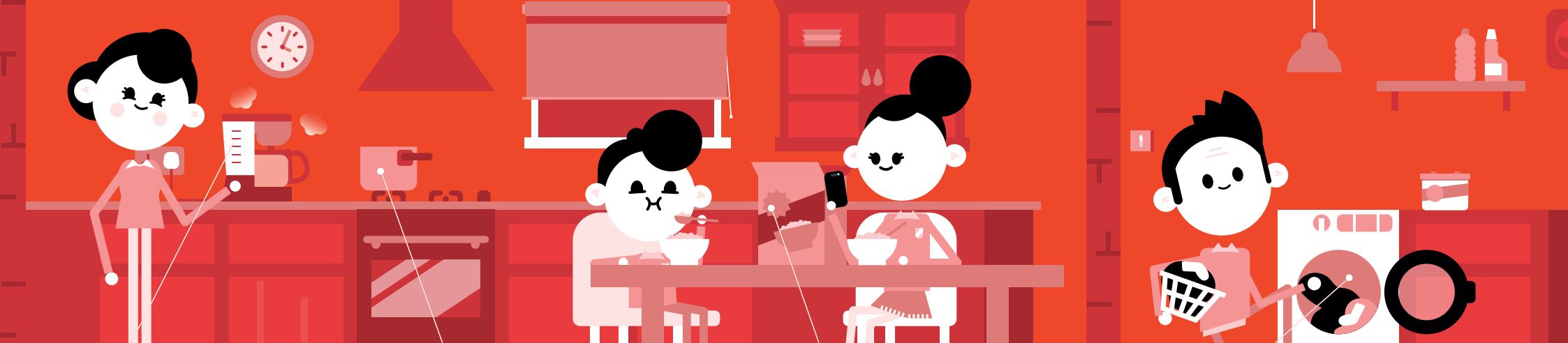


Managing the treatment of wastewater

Taking wastewater from homes across the UK and treating it so it can go back into the environment is a big commitment. WSP's engineering expertise helps water companies provide wastewater treatment that meets current and future demand, as well as increasingly stringent environmental requirements.

Like other forms of waste, wastewater is also a valuable resource. We work with our clients to help them design and implement technologies – such as anaerobic digestion or heat exchangers – that unlock low-carbon energy from wastewater.

So when your soapy shower water goes down the plughole, it's really just the start of its journey.



Supporting long-term water management

As a water customer, you want to know that you can turn on your tap and get the clean water you need – today, tomorrow and in the future. To safeguard the UK's supply, water companies are putting in place management plans that stretch as far as 100 years ahead.

WSP's water specialists help water companies tackle the tough questions in long-term planning. How can we maintain existing water sources? How can we reduce consumption and environmental impact? How can we ensure any new resources we develop, such as reservoirs, will be resilient to climate change?

Our work helps address these questions – through everything from implementing smart technology that optimises the network, to programmes that encourage customers to use less water.

There's something to ponder the next time you pour a coffee.



Designing facilities to bring natural gas into homes

Natural gas travels a long way to get to your cooker – and our engineering expertise is with it nearly all the way.

Piping gas from storage at LNG terminals or in underground caverns safely and reliably to your local area is a complex business. We design and engineer the high-pressure transmission pipelines that weave their way unnoticed, underground across the country. At the end of these pipes are the aboveground installations that reduce the gas pressure for distribution to homes and offices. These need specialist design too, as do the distribution pipelines that take the gas on to local metering stations before it can be piped into your home.

Because we design the infrastructure that ensures gas always gets to the right places at the right pressure, all you have to do is remember not to burn the porridge.



Increasing food and drink production capacity

Imagine going to the cupboard to find you'd run out of your favourite cereal. Now imagine there was none left in the shops, either. To keep you supplied with puffs, cornflakes or whatever cereal you like best, food manufacturers must keep their facilities running continuously. So how can they ever expand or upgrade a factory?

That's where WSP's expertise comes in. We specialise in these 'cut and carve' projects, carefully designing and constructing a new factory before joining it seamlessly with the existing one. All this is done without disturbing production and involves very careful planning of construction safety to ensure the site is isolated from day-to-day operations.

You could say we help engineer your breakfast. There's something to consider next time you munch a bowl of cereal.



Facilitating a flexible energy supply

Around the UK, millions of people start their day at the same time as the family in our animation. Millions of us step into our electric showers and turn on our kettles simultaneously.

For years, managing peak demand has been one of the big challenges for the electricity grid. Today all that is set to change: smart homes and smart grids will use technology to flatten our peaks in demand, meaning fewer costly infrastructure upgrades.

We're working with technology companies on the systems and flexibility services that will enable this transformation. Soon, for example, your smart washing machine could know your time-of-day tariff and tell you when it's cheapest to do a wash. Load it in the morning and the machine will run when demand is low – and energy is cheaper.

Sadly, though, you'll still have to do the ironing.



Enabling the manufacture of hi-tech materials

Carbon fibre has revolutionised many aspects of modern life. Strong and light, it's used to make everything from wind turbine blades to sports equipment. As you might imagine, manufacturing this material is a specialised business. But what you might not imagine is that WSP designs and builds machinery for making the fibres that go into carbon fibre.

In this hi-tech and rapidly developing sector, no two machines are quite the same. Our mechanical engineers use specialist 3D software to design the bespoke machines our clients use to produce the fibres that end up in your fishing rod, your tennis racket, your bicycle and even your sports clothes.



Getting future-ready for a changing climate

Climate change will make extreme weather events, such as drought and flooding, more likely in the UK. WSP works with clients who are striving to help limit the extent of the change and adapt to the impacts that are already inevitable.

So as well as areas such as managing water resources and tackling flood risk, our expertise is informing the latest renewable energy projects that are helping to reduce the UK's carbon emissions.

Our solar and wind renewables expertise includes developing complex wind farms in remote locations. We optimise designs to be as efficient as possible and make sure the grid can get the power to where it's needed.

Whatever the weather today, you can be sure we're getting ready for the changes that the future will bring.



Enabling a smart-energy revolution

The accelerating uptake of electric vehicles is driving a rapid transformation in the way your home gets and uses energy.

Soon, instead of just receiving electricity transmitted from centralised power stations, your home will be at the centre of a smart, sustainable and decentralised energy system. So as well taking energy from the grid, your intelligent home – with its solar panels or electric vehicle – will feed energy back into the grid.

At every point in the chain – generation, transmission and supply – WSP's expertise is enabling a shift to a sustainable energy future. We're even developing digital solutions to help consumers trade energy peer-to-peer through blockchain technology.

Yes, that's right, we're helping you become your own energy company.



**Watch the video
at wsp.com**