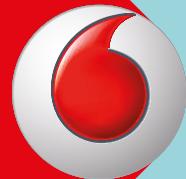


Why Vodafone for Utilities



Vodafone
Power to you



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Six trends driving change and creating new opportunities

Utilities businesses are facing growing challenges. Consumers' patterns of energy and water consumption are changing and new legislation is necessitating investment in infrastructure and a greater focus on renewable sources.

Businesses are moving to cloud-based operating models that rely on the gathering and interpretation of data. They're also grappling with data from smart devices and IoT technology. At the same time, it's getting more difficult to recruit young talent to replace a retiring workforce, leaving a potentially damaging knowledge gap.

The six trends



Beating the cost squeeze

Rising customer expectations

Disrupting supply

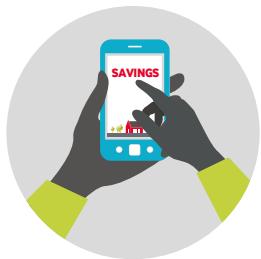


Safer working,
stronger business

Tapping into talent

Becoming data designed

1 Beating the cost squeeze



People are changing how they use their energy and water, and are more concerned about the environment. And smart devices in the home are helping millions to save money on their bills.

Providers have struggled to find the money to evolve their products and services, while stricter government regulation and energy targets have meant greater infrastructure spending. The expense of building new conventional infrastructure leaves operators with two options: develop and introduce new power transportation technology or use what they have more efficiently, reliably and dynamically with the help of smart technology.

This rapid pace of change puts new start-ups at an advantage. Traditional businesses must invest in the same technologies to cut costs, improve efficiency and remain competitive.

2 Rising customer expectations



Consumers are becoming more demanding. Their experience of buying from technologically advanced sectors like retail, have led them to expect the same standard of experience from utilities providers. Consumers want a seamless experience across all communications channels. It's now easier than ever to compare and switch providers, so delivering a standout customer experience is absolutely paramount. Providing connective technology like smart meters can vastly improve the consumer's experience by empowering them to understand and manage their water, gas and electricity consumption.

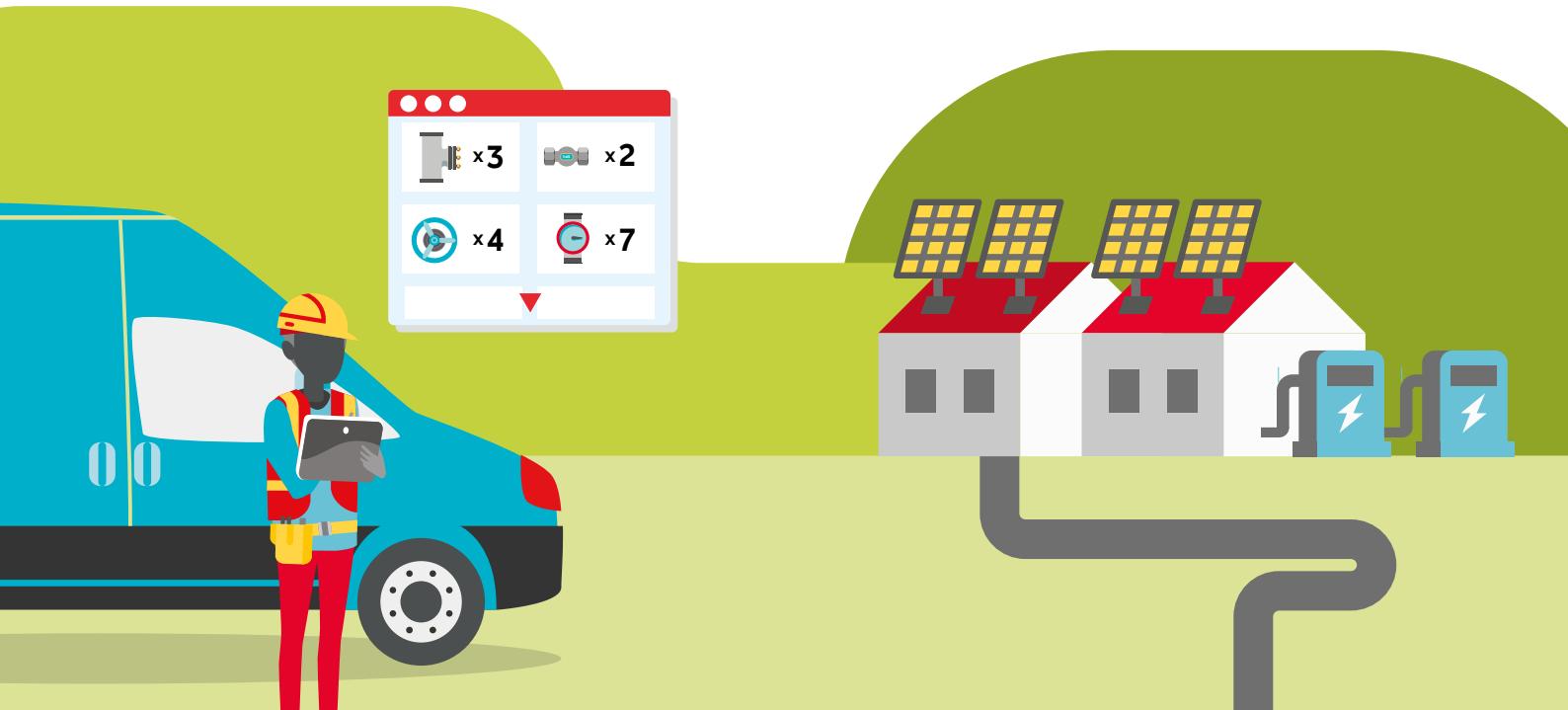
3**Disrupting supply**

In response to climate change, energy companies are generating more power from sustainable resources. Meanwhile, energy and water companies are moving from large generator hubs to smaller, more numerous ones closer to points of consumption. The rise of “prosumers” – people who store and sell their own energy – is taking absolute distribution power away from traditional providers. And smarter distribution and IoT technologies are making it easier to fix network problems before they escalate.

4**Safer working, stronger business**

Recent legislation has helped to make the utilities sector a safer place for workers. Mobile and collaborative technology is making it easier for businesses to monitor and protect lone workers out on location. It's also giving field engineers full sight over every job, so they can pack the right tools before heading out.

Given the increase in digital working, it's equally important to protect a business's virtual assets as its physical ones. IoT and smart connected devices give businesses complete visibility over physical and virtual infrastructures, helping them comply with regulation, data protection and site protection laws, while improving efficiency and customer engagement.





5 Tapping into talent

Utilities businesses want to attract the brightest and best. But the workforce is changing. Today's digital natives have grown up using the Internet and mobile, collaborative technology and they want to use similar consumer-grade technologies at work. Businesses must adopt these technologies to attract ambitious talent.

They must also understand the younger generation's motivations: they want support to develop their skills and are attracted to businesses with sound ethical and environmental policies.



6 Becoming data designed

More utilities companies are moving towards business models based on the collection and analysis of data. This is giving them insight into everything from demand management and workforce utilisation to customer preferences. This in turn enables smarter and faster decision-making, plus the development of new, personalised service offerings to help drive competitive advantage.



How Vodafone and technology can help

We have a long history of working with businesses in the electricity, gas and water sectors – and our global scale, knowledge and expertise mean we can help utility businesses overcome today's challenges and design strategies for growth.

In many countries we are a critical national infrastructure provider, supporting vital gas, power and water production, generation and distribution networks. It's why we're trusted by many of the world's biggest utilities companies, including Centrica, EDF Energy, South West Water, Enel, ScottishPower, RWE and EDP:

In-house expertise

We take enormous pride in having utility experts working at Vodafone. Among our consultants, engineers and developers we have over 250 dedicated utilities experts who bring a great deal of first-hand insight and experience.

Delivering communications solutions

We're a 'total communications provider', supplying services across mobile, fixed-line, cloud and IoT networks. We deliver complex solutions, simply and effectively, to better connect your business, improve your operational agility and increase customer satisfaction

- We are the world's largest international mobile operator with over 460 million customers and the number one global voice carrier. Our fixed-line data network spans 73 countries and we offer mobile operations in 27 markets extended through partners to over 80 countries
- For more than 20 years we've been delivering world-leading IoT solutions and now have 41 million connected assets across 70 wireless networks on five continents. Last year, we retained our position as a leader in Gartner's Magic Quadrant for Managed IoT Services Worldwide for both ability to execute and completeness of vision

- Together with Huawei, we opened the world's first Narrowband IoT lab – a testing ground for new products and application
- We're a leader in providing secure national infrastructure telecommunications services. These services are built with security, resilience, latency and ubiquitous coverage in mind
- As experts in cloud hosting, we have 1,200 public sector and enterprise customers around the world, plus 17 data centres in the UK, Ireland, across Europe and South Africa, augmented by a network of partner facilities

We help businesses achieve:

- Better customer engagement
- Better operational agility
- Better connected employees



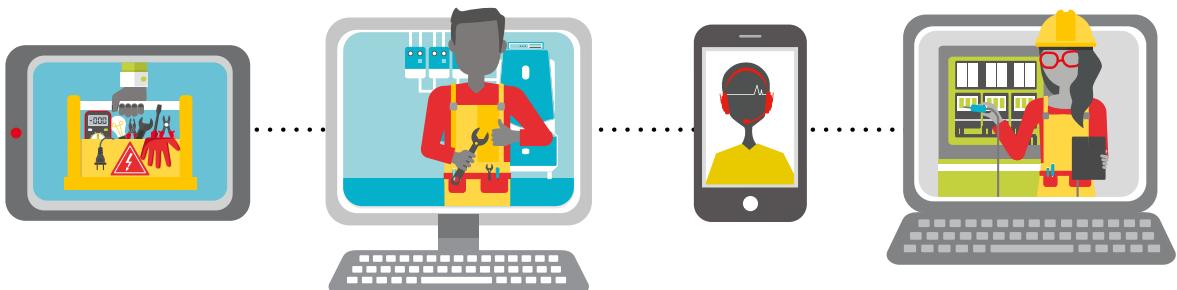
Better customer engagement



Better operational agility

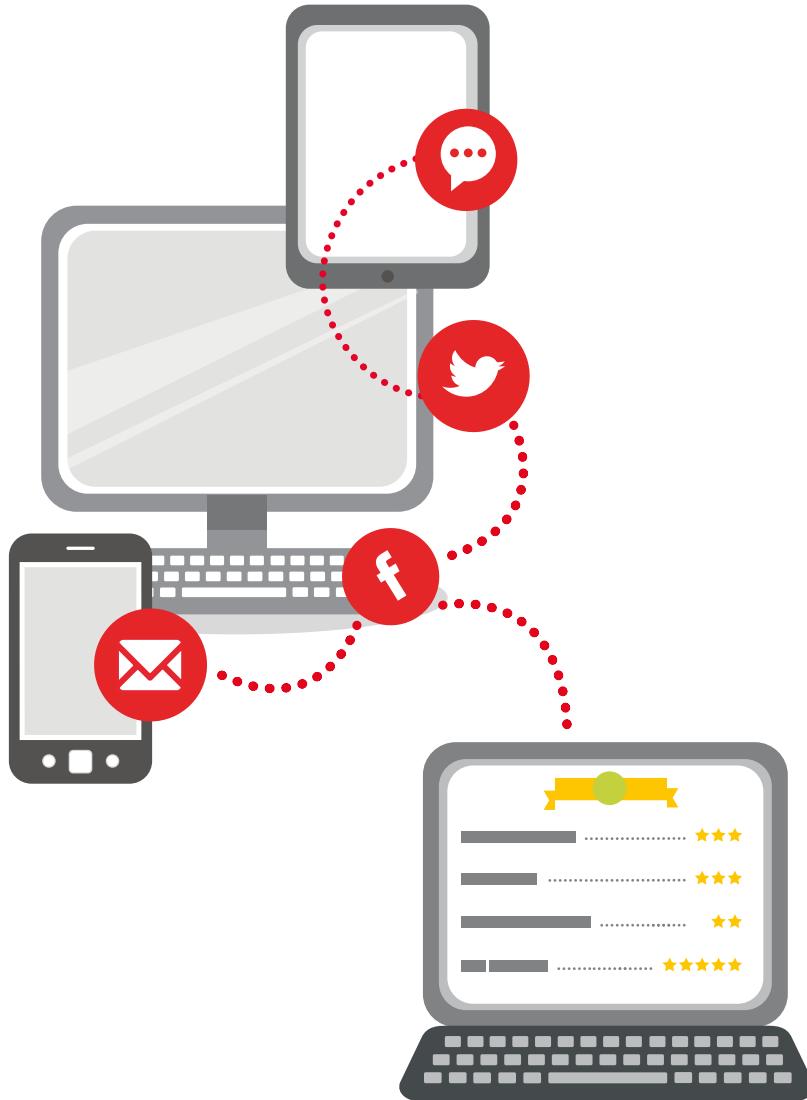


Better connected employees



1 Better customer engagement

Utilities businesses have to work hard to stand out in today's crowded and homogenised market. Consumer expectations have been changed forever by their relationships with other sectors, and utilities must now play catch-up to provide an omni-channel service with high levels of interaction across all touch points.



Here's how

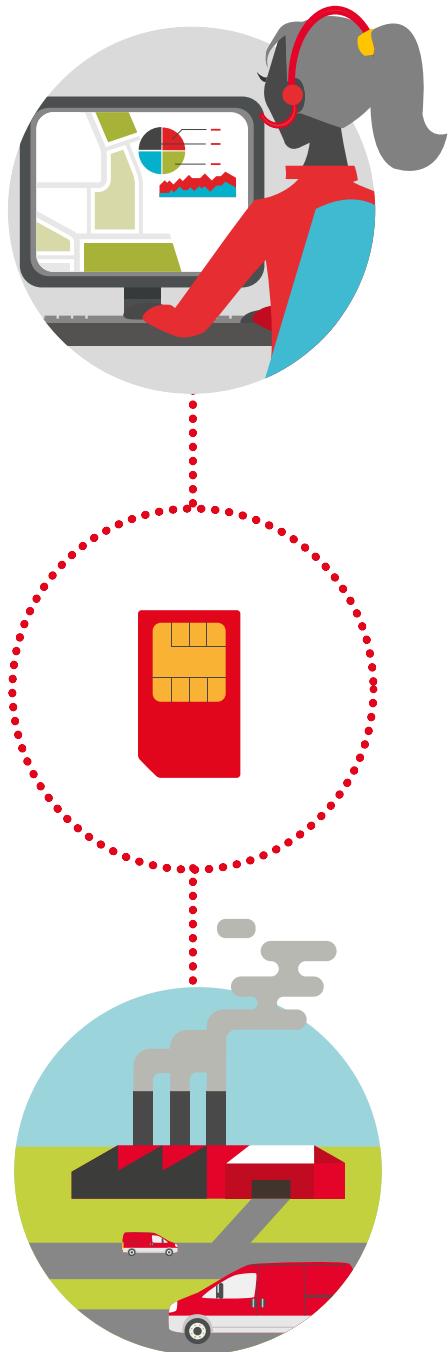
We help companies transform their levels of customer experience using the latest technology and service innovation.

- **Smart meters** use IoT technology to give users and suppliers the ability to monitor energy and water usage, giving them sight over how and where to reduce consumption and save money. They can also provide faster connection, supply and disconnection for new or departing customers. In the UK, we provide the managed communications services for five of the big six energy companies' smart metering programmes
- **Smart grid technology** and advanced analytics enable adaptive pricing for consumers, while allowing them to sell energy back into the grid at times of peak demand
- We design, build and support **omni-channel contact centres** that enable businesses to get closer to their customers, meet compliance obligations and obtain new customer analytics – all the while helping to drive down costs



2 Better operational agility

Connected devices and sensors are changing the way utilities providers operate. New business models based on data collection and analysis are powering confident decision-making. And traditional providers need to adopt these new models to protect their market share from being eroded by more agile start-ups.



Here's how

As a ‘total communications provider’, we’re able to embed business agility across an organisation’s communications platform.

- At the heart of every Vodafone IoT solution are our **IoT SIM cards**, which provide the connectivity between a business’s terminals and our network. They’re ready to use anywhere within our global footprint and connect applications like indoor alarms, asset tracking, fleet management and industrial metering
- Our **Managed IoT Connectivity Platform** enables businesses to monitor and manage their worldwide SIM portfolio. This gives visibility and control over every IoT device, making it easy to track the location of an asset, alert people to unusual activity, produce performance reports and gain insight into data usage. So it’s possible to discover where to make efficiency gains and better control costs
- We’re heavily investing in **narrowband IoT**. As the next generation of IoT connectivity, it revolutionises the way devices are powered and connected. With longer battery life, it provides better network coverage, supporting more connections and using less power. This helps businesses with devices in remote or dangerous locations communicate information without the need for regular checks or human interactions
- Our **Ethernet Services** give networks the agility, efficiency and performance to align with business priorities, operations and objectives. For instance, in providing the dedicated connectivity that’s vital for energy trading where milliseconds can cost millions
- Our **Total Cloud Private** solution provides a reliable, secure and scalable IT platform that protects data and enables faster decision-making as business opportunities and challenges arise
- Our **Total Workforce Mobility** solution helps businesses better plan and organise their working days, from scheduling appointments and maintenance visits to installations and reading meters, so staff are better utilised and spend more time adding value
- Our **energy data management solution** helps businesses with multiple sites to see where energy is wasted, educate staff on how to consume less and provide detailed data to enable them to challenge bills and negotiate better tariffs

3 Better connected employees

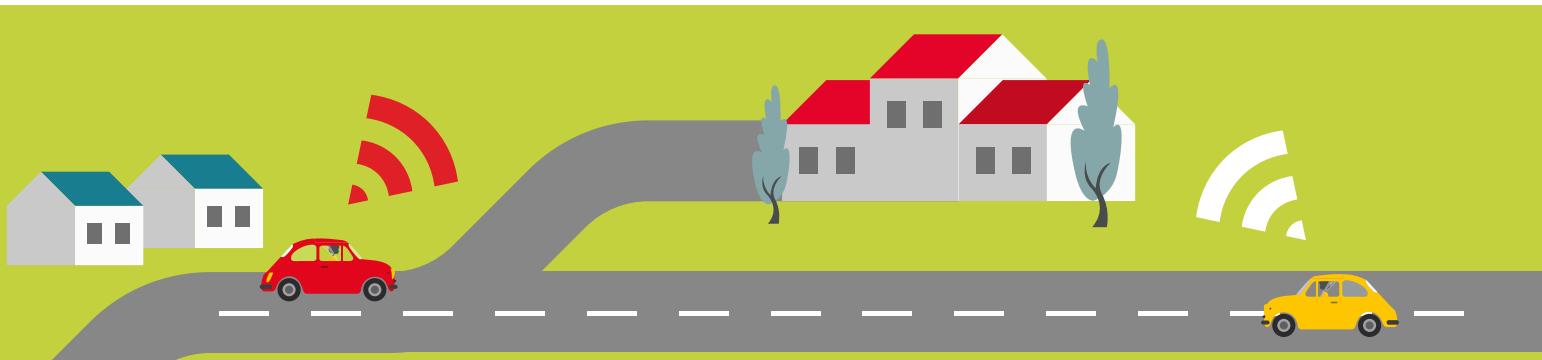
By giving workforces the tools to work where, how and when they want – in a secure and managed way – businesses can boost staff satisfaction, retention and productivity. Real-time communication and tracking can help protect people in high-risk jobs, and track lone workers. And drivers can be rerouted to make faster, more efficient journeys.



Here's how

Vodafone helps businesses maximise the potential of their workforce, creating happier, more productive employees and more satisfied customers.

- **Vodafone One Net Enterprise** (VONE) improves cross-border, team and business unit working to enhance internal decision-making and product, programme and project management. It connects a workforce together across fixed lines, mobiles, tablets and laptops – wherever they're working. VONE-C is a cloud-based Cisco platform that hosts the solution in the cloud without the need to install additional hardware or software. While VONE – M is a cloud-based programme that runs on Microsoft
- Our **Mobile Asset Tracking** solution uses IoT connectivity to track sensor-equipped vehicles. This helps to optimise fleet performance, improve maintenance operations, send drivers along more fuel-efficient routes and improve driving habits
- Our **Track4 in-Vehicle WiFi** solution enables engineers securely connect to the Internet in remote areas and access important documents or information locally
- **Fixed and mobile** connections ensure employees are better connected to internal systems, files, other employees and their customers, so a business can react rapidly to new opportunities
- **Vodafone Secure Device Manager** allows customer-facing staff to spend time with customers, yet always remain connected to other employees



Case studies

Vodafone helps utilities providers overcome some of their biggest challenges and put in place digital strategies and ways of working to drive future growth. Here are just a few examples.

Vodafone Energy Data Management

Our new energy-saving solution for businesses with large estates

nPower

A leading supplier of gas and electricity in the UK

WIKON

One of Europe's largest IoT providers

ScottishPower

A top six UK power company

Enexis

One of the biggest energy network operators in the Netherlands

Aguas de Valencia

A leading water company operating in Spain and Latin America

Vodafone achieves energy savings of up to 40% with Energy Data Management solution

With more than 450 million customers in over 70 countries worldwide, Vodafone has come a long way since making the first mobile call in 1985.

Faced with rising global energy costs and a need to minimise our global footprint, we decided to implement a solution that would improve energy management in our 240,000 buildings around the world.

We wanted to get a granular understanding of the factors influencing energy consumption and use that information to manage energy more proactively. But to do this on a global scale, we realised we needed to build the solution ourselves.

The solution

Energy Data Management features data logging devices, called Green Boxes, that sit alongside building consumption meters which take inputs from multiple sources such as heating and lighting.

The smart meters and Green Boxes send data securely through our global wireless IoT network to an online portal. We also developed a dashboard that enables managers to monitor consumption and make decisions based on that information.



The impact

- We're able to track exactly how and where we're using energy across our entire estate, enabling us to see how different site systems – like heating and lighting – contribute to overall energy consumption
- On average, we're saving 29% in energy costs across all 200 sites that participated, with one site saving 40%
- In our Italian radio base stations, EDM is monitoring cooling systems and triggers an alarm if they're not working properly. This preventative maintenance is estimated to save over £200,000 a year
- With the knowledge of how and where we were wasting energy, we've been able to change processes, educate staff on energy saving and upgrade facilities
- With new intelligence, we can reduce inaccurate estimates, challenge bills and negotiate better tariffs from utility suppliers



nPower – making UK homes smarter

nPower is a leading supplier of gas and electricity. As part of the RWE group, it serves 6.5 million homes and businesses throughout the UK and employs 9,600 people.

As part of its drive to create more efficient homes, the UK government wants to install smart meters in all 26 million homes in the country by 2020. This will allow consumers to better monitor their energy consumption, lower bills or choose a better tariff. As part of this drive, nPower needs to install smart meters in over one million homes every year, nearly 19,000 a week. These meters have to be secure, easy to deploy and super reliable.

The solution

A US smart metering specialist supplied the communications hub, while Vodafone provided the secure connectivity. With Vodafone Global SIMs, smart meters can be installed anywhere in the UK and then automatically connect to the strongest signal.

The impact

- Each smart meter can send monthly, daily or 48 half-hourly readings, helping nPower update customer tariffs or take meter readings more frequently
- With the Vodafone MachineLink terminal, Vodafone can test connections independently, improving diagnostic capability and network infrastructure
- By spending time face-to-face with the customer during installation, each household can learn how to get the most out of the device
- All updates along with a map of daily usage can be seen on the customer's In Home Display (IHD)



Helping WIKON streamline global logistics for industrial gas suppliers

WIKON, a remote monitoring and control company based in Kaiserslautern, Germany, has been an IoT provider for over two decades. It started out in 1991 with solutions for heating systems and air conditioning, before moving on to provide a wider range of remote monitoring systems.

One of WIKON's biggest lines of business is the remote monitoring of tank levels for companies supplying liquefied gas to industry. Their supply is so crucial that it creates pressure on the supplier to perform without error.

To take this service to the next level, WIKON wanted to introduce a standardised solution for customers operating across the world.

Solution

Vodafone's Managed IoT Connectivity Platform manages the deployment of the WIKON IoT portal to customer sites worldwide. Vodafone also provides a global SIM, which is designed to withstand extreme industrial conditions and work in any region.

Fill-level transmissions are now automatically transmitted over the Vodafone network and made available to WIKON's customers on a secure and password-protected portal.

The impact

- The streamlined global service helps WIKON's gas supplier customers optimise logistics, meet SLAs and reduce downtime
- The SIMs have enabled WIKON achieve DEKRA (Germany Motor Vehicle Inspection Association) certification for durability
- WIKON can now manage all IoT data communications in house, including SIM activations, roaming and price plans
- Global SIM makes it easy to roll out services for global contracts, eliminating the need for WIKON and its customers to deal with separate data network providers

Making ScottishPower's network more reliable

ScottishPower is one of the top six power companies in the UK, providing energy to over five million households and businesses. Formed in 1901, it's owned today by the Iberdrola Group, a global energy company focused on delivering a more sustainable, greener future. The company is investing more than £6 billion over eight years to upgrade and enhance its infrastructure.

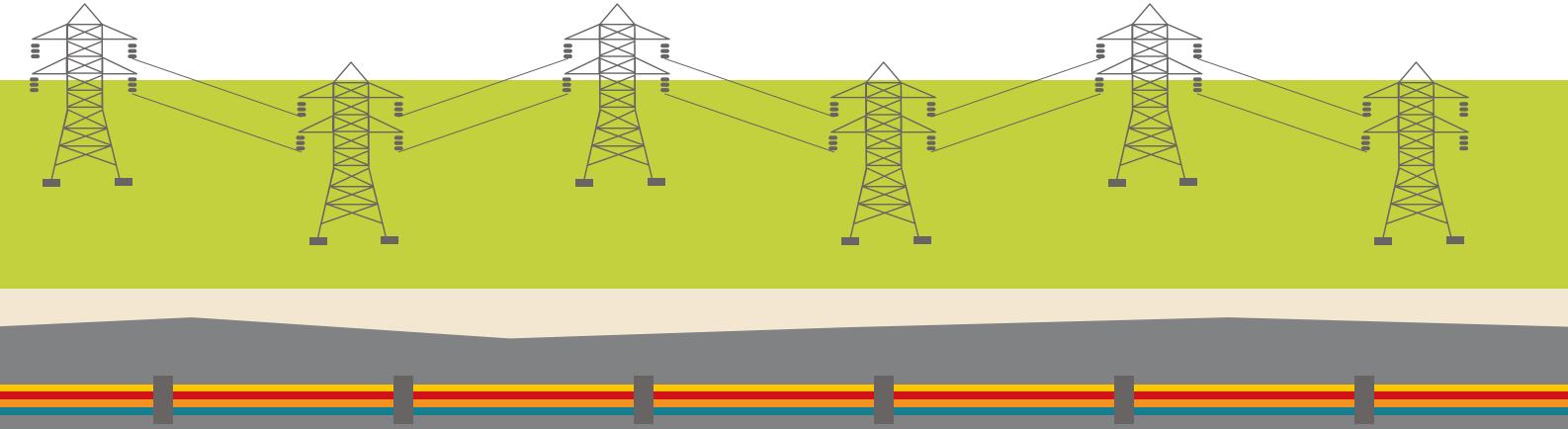
The solution

Vodafone is working alongside ScottishPower to manage and upgrade its performance monitoring and fault identification systems across the company's electricity and distribution networks that cover more than 3.5 million homes and businesses.

This includes more than 110,000 km of overhead lines and underground cables, and more than 30,000 substations across Scotland, the north of England and north Wales.

The impact

- ScottishPower can better manage the day-to-day reliability of its network and plan for growth in the future
- The company has gained a world-class digital communications network to support its already world-class power distribution network
- Vodafone is helping to implement new smart grid technologies and integrate power generation from renewable sources like solar and wind
- Performance data gathered and analysed by Vodafone will help ScottishPower in prioritising its improvement plans
- The work is helping ScottishPower to meet the long-term needs of its customers



Helping Enexis power ahead with smart meter rollout

Enexis is one of the largest energy network operators in the Netherlands, managing around 4.5 million customer connections. As part of the European Union's directive that by 2020 80% of homes must be able to monitor their electricity consumption, Enexis had to roll out secure smart metering – and fast.

The solution

Vodafone Global SIMs have been integrated into each smart meter so homes can now transmit energy consumption data to and from Enexis's data centres. While Vodafone's network provides a reliable and scalable solution to support roll-out across the country.

The impact

- Vodafone's IoT capabilities provide Enexis with the scalability to help meet EU legislation targets
- Comprehensive national network coverage ensures smart metering technology can be implemented throughout the Netherlands
- Vodafone's dedicated IoT business unit offers best practice and strategic planning from its experience in the global energy sector
- A dedicated account manager provides a single point of contact to address any challenges, while being able to review and improve service levels to help boost the company's green credentials



Enabling Aguas de Valencia to introduce more efficient smart meter readings

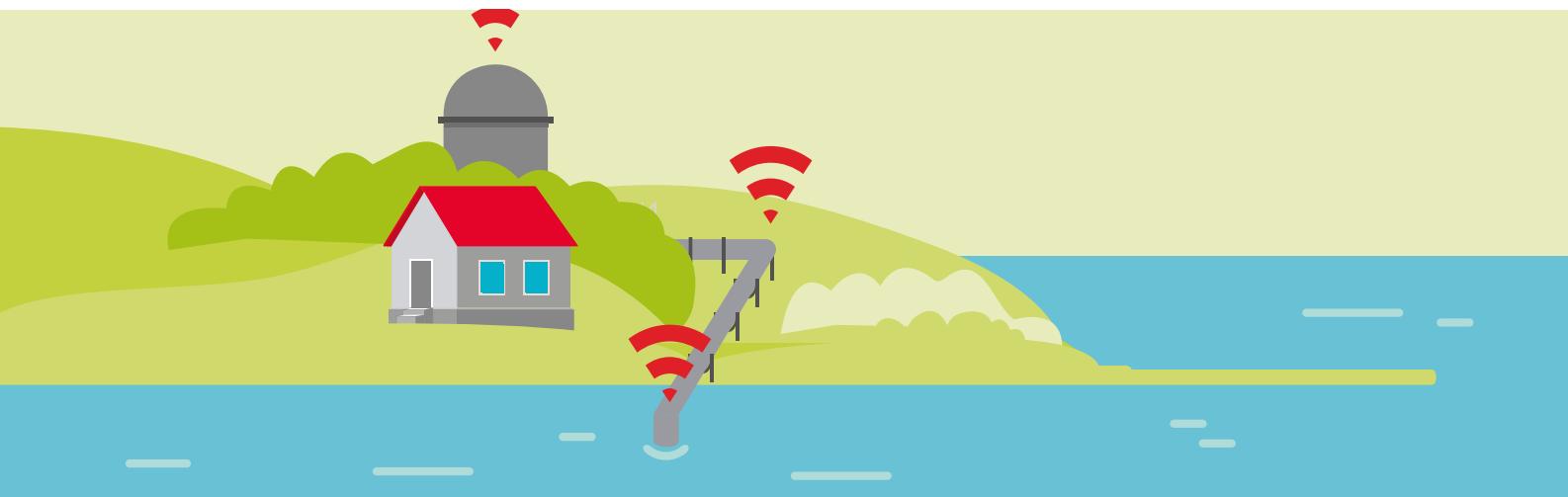
Aguas de Valencia is a leading Spanish water company that operates in 11 regions in Spain and throughout Latin America. To manage the complete water cycle in each area, the company installed 1.1 million meters and 600,000 automated meter reading devices, taking 24 readings a day. But it needed to improve the efficiency of its meter readings and develop a workable model that could be rolled out nationally and internationally.

The solution

Aguas de Valencia partnered with Vodafone to run a trial in the village of Moncada, using Vodafone's Narrowband IoT solution because it was low cost, provided assets with excellent battery life and was ultra reliable.

The impact

- The solution was the first pre-standard Narrowband IoT trial over a live commercial network in Spain
- Aguas de Valencia was able to see where meter signals were weak and then boost signal strength to ensure service continuity and minimal disruption
- The trial gave the company the confidence and insight to develop a long-term operating model both nationally and internationally
- With a new, more commercially viable operating model, Aguas de Valencia was able to embrace further innovation, become more agile and provide customers with more benefits



What next?

At Vodafone, we're always looking to better understand the challenges your business faces, today and in the future.

If you'd like to know more about the trends impacting the utilities industry, as well as the opportunities they present to you, please read our **Ready Utilities Guide**.

Want to talk? We'd love to hear from you.

Contact your account manager or call **0845 084 0157**.

Visit www.vodafone.co.uk/utilities

