The employers’ guide to smart meters and energy efficiency awareness at work and at home

This guide has been prepared jointly by the Carbon Trust and Smart Energy GB

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The Carbon Trust is an independent company with a mission to accelerate the move to a sustainable, low-carbon economy. The Carbon Trust:

• advises businesses, governments and the public sector on opportunities in a sustainable, low-carbon world;

• measures and certifies the environmental footprint of organisations, products and services; and

• helps develop and deploy low-carbon technologies and solutions, from energy efficiency to renewable power.

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Smart Energy GB is the voice of the smart meter rollout. It’s our task to help everyone in Great Britain understand smart meters, the national rollout and how to use their new meters to get gas and electricity under control.

For more information visit smartenergyGB.org
The smart meter revolution is a once in a generation energy upgrade to every home and small business.

Smart meters are supporting the development of a smarter, more flexible grid, and the more efficient use of energy at home and in the workplace.

From households to large businesses, everyone has a part to play, providing the opportunity for employers to connect with their employees on sustainability issues like never before.

We are encouraging employers to support their staff to get this new technology installed in their homes and make the most of the benefits.

Employers sharing information about smart meters can help staff save on their bills and reduce their carbon footprint. Helping staff to get energy smart at home will help them to get energy smart at work.

We have been pleased to work with the Carbon Trust on this guide for employers, giving them the tools they need to run their own campaigns with staff.

This paper is full of expert advice, insight and ideas we hope will inspire you to get involved.

Sacha Deshmukh
Chief Executive, Smart Energy GB
Become a smart energy employer
Smart Energy GB is inviting business and organisations of all sizes to become Smart Energy Employers by sharing information with staff about smart meters. Those who take part will be awarded a ‘Smart Energy Employers’ badge.

Adnams, Hilton Hotels, Islington Council, NHS Employers, Skyscanner, Tech UK and TfL are just some of the employers that have been involved.

Resource centre for employers
We have a range of documents and videos available on our website and youtube channel to help you engage your employees with smart meters and energy efficiency.

To find out more visit smartenergyGB.org/employers
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Climate change is one of the biggest challenges that society currently faces. Businesses have already made significant progress to become more sustainable but some are not yet taking full advantage of the benefits of more sustainable operation. For example, there is a big financial incentive to save energy: UK businesses spent £11 billion on energy in 2016, whilst domestic customers spent £34 billion.

Energy efficiency in the workplace can make a significant contribution to bringing those costs down. This guide for employers will explain how to design and run an engaging energy efficiency awareness campaign in the workplace, and practical advice you can provide to employees to save energy at home.

Smart meters in homes and small businesses will help make savings a reality. The smart meter rollout will help individuals and businesses save energy and make the system fit for the future. They give people more control over their energy use, help them understand their bills and enable them to see what energy is costing.

In future, smart meters will enable the move towards a smart energy system. They will pave the way for a smart energy grid, which will help with the integration of carbon saving technologies, from electric cars to rooftop solar panels and heat pumps, and help us get the most from variable power sources like wind and solar. Energy users from domestic consumers to large business will be able to take a more active role in reducing their energy costs by responding to price signals from the energy market.

Employers can harness the current smart meter rollout campaign alongside this guide to make their employees aware of the opportunity to get a smart meter. They will benefit from more engaged employees better able to control their energy bills at home. And it is a great opportunity to remind employees how they can contribute to saving energy at work. It’s good corporate social responsibility, but also good business sense.

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Smart meters are the new type of gas and electricity meter that automatically send meter readings to energy suppliers. They ensure accurate energy bills and the portable in-home display (IHD) provides consumers in near real time with energy cost information in pounds and pence.

Smart meters are being offered to more than 30 million households and small businesses across Wales, Scotland and England. The programme is already underway and by by mid 2017 there were already around seven million smart meters installed across Great Britain.

The new meters are being installed by energy suppliers at no additional cost to bill payers.

Further information
Read more about smart meters at smartenergyGB.org

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Chapter 2
Why engage with your employees on smart meters?

There are energy saving opportunities for employers

To save energy we all need to change our behaviour – sometimes in small ways, like switching off the light when we leave the room, and sometimes in bigger ways, like installing a new boiler or switching to public transport instead of driving.

Our behaviours are influenced by a huge range of changing and overlapping factors, and the home and work environment are often very different. What motivates people to save energy when they are at home may be different to what drives people when they are in the workplace. At home, energy saving is most likely to be undertaken to save money. In the workplace, whilst managers are often focused on the financial savings, employee motivations can be more diverse and complex; for example making working conditions more comfortable, gaining recognition, or making an environmental contribution.

Finding ways to link the two together offers great potential for energy savings, and benefits to both employer and employee. It is likely that employees will already be familiar with smart meters and some will already have them installed. Getting employees who are already finding ways to save energy with their smart meter to share their experience of reducing their energy use can provide a good introduction to employee energy awareness in the workplace, bridging the home/work divide.

How energy saving at home benefits both employer and employee

Leading employers recognise the benefits of helping their employees with issues beyond their immediate job role. Receiving help and advice about energy saving at home can make employees feel their employer cares about their well-being. Advice on energy efficiency fits well with other measures to support employee health and wellbeing such as advice services, subsidised gym memberships, or healthy food options.

In addition, helping employees with cost saving measures can help to relieve financial stress, especially as energy costs are one of the highest controllable costs that consumers worry about.

A campaign on energy saving and effective use of smart meters at home could also sit well within your company’s energy management activities. This is because higher awareness could lead to improved engagement with workplace-based energy saving campaigns.

Smart Energy GB’s campaign presents a perfect engagement opportunity to start a discussion on home energy efficiency, and link it to energy saving at work. This can fit well within an existing programme, or could be an interesting topic to kick-start a campaign in organisations new to energy management and staff engagement. Smart Energy GB can provide employers with advice and materials on the benefits of smart meters and how to get one, which they can then provide to their employees. Likewise, the Carbon Trust can provide extensive support with energy efficiency advice in the workplace.

See smartenergyGB.org and carbontrust.com for further support.
How can smart meters help?
We know that people respond well to information about their energy consumption, and smart meters are already successfully encouraging people to save energy at home. Key findings from Smart Energy GB’s August 2017 Smart Energy Outlook, a survey of nearly 10,000 consumers, include:

- 80 per cent of people with smart meters have taken at least one step to reduce energy use. Nearly two in three (63 per cent) have looked into ways to use less energy, and more than half (56 per cent) have made changes to their home to be more energy-efficient

- those who have had a smart meter for a longer time become even more likely to have taken action to use less energy

- those who have had a smart meter for longer are also more habitual in their day-to-day energy saving actions

Smart meters give real-time information on energy use, allowing people to understand it, control it better and save money and carbon. They help people to recognise the biggest energy users and focus on those (e.g. reducing tumble drying), switching off unused equipment (e.g. lights), and even encourage the purchase of more efficient equipment when it needs replacing. They also eliminate estimated billing, making budgeting easier.

Energy managers in the workplace have long installed metering which allows energy use to be monitored on a half-hourly basis. Identifying behaviour trends leads to the targeting of improvements, and cost and carbon saving. This approach can be just as effective at home.

Business leaders see significant benefits from social responsibility programmes
Employees who are satisfied with their organisation’s commitment to social and environmental responsibility are likely to be more positive, more engaged and more productive than those working for less responsible employers.

It is well-established that employers who demonstrate good corporate social responsibility (CSR), including environmental and sustainability issues, benefit from more motivated staff and are more attractive to potential employees. McKinsey found more than half of business leaders see environment programmes as important for attracting, motivating and retaining staff. Environmental, social, and governance programmes also create shareholder value, and that value is expected to increase. An energy awareness campaign at work that incorporates advice on home energy efficiency to staff, can help companies realise those benefits.

4 ibid
Case study

Smart Energy GB partnered with NHS Employers and the NHS Sustainable Development Unit to provide support for their trusts to run local campaigns around NHS Sustainability Day. Materials encouraged employees to be more considered with their energy usage, both in the workplace and at home, by taking small actions such as closing windows and doors, turning off IT equipment when not in use, and installing a smart meter.

It involved creating a range of tools and resources to help employers create local campaigns, including a communications toolkit, infographic, web banners and posters.

The campaign was shared widely and the campaign resources were shared with thousands of staff.

If you would like support from Smart Energy GB to run a similar campaign then contact Ed Rees on info@smartenergyGB.org
Helping employees get energy bills under control

There is a growing body of evidence showing that experiencing financial stress at home impacts on productivity at work. For example, a survey for the CIPD showed that financial worries affect the productivity of one in four employees in the UK. Increased anxiety in our home life can make it more difficult to focus on other aspects of life, including our jobs.

Energy costs are a major concern for many people. In April 2017, consumer organisation Which? found that two thirds of respondents cited energy prices as one of their biggest consumer worries. Helping employees to take control of their energy costs could mean a happier and more productive workforce. You can do your bit as an employer by signposting your employees to information on energy saving at home, and how to get a smart meter. Employers can be a trusted source of advice for their employees so can help get the message out.

Smart meters can help remove estimated bills and bill shock, allowing people to control their energy usage and budget more effectively.

Chapter 3
Methods to engage employees with energy management

There are two general approaches to running energy awareness campaigns in the workplace. Both of these can be brought into play for successful employee engagement.

The first approach is to try to instil in staff the environmental values that will motivate them to change their behaviour in line with those values. This is the traditional approach and, whilst it sounds straightforward, changing someone’s value system is a long-term process.

The second approach is to look at people’s existing values and motivations and build specific behaviour change campaigns around those. For example, a key issue with transport can be lengthy commuting times and time wasted driving, or on trains with no wifi. In an organisation where that is the case, a campaign promoting productivity gains from using conferencing software and holding meetings at convenient locations could be more relevant to staff than a campaign addressing costs and carbon.

Most domestic energy efficiency campaigns have focused on the benefits of cost-reduction for consumers. This doesn’t always translate easily to businesses as the employees aren’t individually responsible for paying the bills. However, we do know that people respond well to visual data, and using smart metering at home and in the workplace could be a way to bridge the home-workplace energy efficiency gap. If you have smart/half-hourly\(^6\) metering in the workplace then you could use the data it provides to help employees feel more connected to their energy use.

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\(^6\) Many businesses now have “half hourly metering” installed which sends a reading to the meter operator every 30 minutes. They may not come with a display screen like domestic smart meters, but it is usually possible to obtain near real time graphical outputs on-line, which can be shared with staff.

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Gorilla in the Library case study
A study at De Montfort University Leicester looked at how people using the building reacted to information about the energy use of the building they were using. When the building was performing well they’d see a happy gorilla with a blue sky, but when the building was performing badly they’d see an unhappy gorilla in gloomy surroundings.

The study found that visual imagery that gives emotional cues can be more effective than words or numbers in getting building users to change their behaviour. The use of happy and sad faces, which is more common and easier to replicate, relies on the same principles.

Alan, accountant
“Before I used to wear a suit and therefore requested to have the air-conditioning on all day. Now we’re allowed to wear shirts on non-client facing days, and myself and my colleagues definitely feel less need for the air-conditioning to be on at full power.”
Energy awareness communications

The traditional approach to engaging with your employees on energy and environment can, over the long-term, help make staff more environmentally motivated and aware. Some research suggests that framing cost savings with CO$_2$ savings can actually promote broader sustainable behaviour, so a campaign that links the two could bring benefits beyond simple energy efficiency (e.g. water, waste, travel choices).

A number of communication channels can be used to gain employee buy-in, which are described in the section below. A particularly effective way to reach out to employees is to run lunchtime sessions.

Lunchtime sessions:

Lunchtime sessions are an easy, free or low cost way to deliver employee engagement. Many employers already hold regular lunchtime engagement sessions on a number of topics, such as healthy eating or staying fit. One or more energy awareness sessions could be delivered as part of such a programme but would also work as a standalone activity. A recent study found that giving people the chance to talk about energy use and data in a workshop setting was necessary for them to understand data and how to act on it.

Sessions may be information-based, including talks by internal or external staff, or practical e.g. a walk-around to look for energy saving opportunities, or looking at sample light fittings or meters.

Lunchtime sessions have a number of benefits:

- they encourage employees to meet new colleagues and build links across different teams, encouraging better cross-team working
- people are more relaxed than in a formal meeting and more receptive to the information you’re providing
- busy staff may find it easier to attend a lunchtime session rather than a session in the morning or afternoon as it doesn’t take time out of their working day
- because they are held outside core hours they can be free for the employer to run. In most cases the only costs will be the resource to run the session, plus possibly providing food
- they enable a two-way conversation that you cannot get through sending emails or posting information on the intranet
- they are an ideal way of covering both home and workplace energy use

Phillip, domestic consumer

“At the moment, we are in the habit of setting ourselves a daily limit and our smart meter warns us when we are close to reaching it.”

Themes for lunchtime engagement sessions on energy efficiency and smart meters
Whether you have an existing employee engagement programme or you’re starting from scratch, consider running the following sessions and remember that Smart Energy GB can provide support with this type of event:

1. Smart meters and energy saving at home
There is currently a wealth of material for employers to take advantage of, available through the national smart meter rollout campaign. This includes posters and leaflets with information on smart meters, frequently asked questions, handy text to copy and paste, as well as educational short films and other creative content such as energy-saving recipes: smartenergyGB.org/en/smart-ideas/hub
You could invite attendees to show the information a smart meter can provide, compare with colleagues and help make sense of everyone’s consumption data. This can lead into a discussion on the most effective energy saving measures employees can undertake at home.

This guide includes factsheets that you can use in lunchtime sessions. Factsheets 1 and 4 include information on smart meters, and Factsheet 2 contains top tips for energy saving in the home.

2. Energy saving in the office
You may already have an energy awareness campaign in the office. If you have a green champions network then they will be able to help run the session. Make sure that your energy manager and facilities team are also involved. The Carbon Trust has produced guidance on energy saving at work available at carbontrust.com.

If you don’t have an awareness campaign already, see p15 for advice.

3. Energy saving between work and home
Transport is responsible for around 40 per cent of carbon emissions so changing how we travel between home and work is somewhere many people can make a very positive contribution. A lunchtime session at work is the ideal place to talk about sustainable commuting and work travel. Think about whether there is a national activity you can tie-in with, for example, Cycle to Work Day, usually held in September, or Catch the Bus Week, usually in July. Your local situation is very important to sustainable transport campaigns (e.g. are you in a city centre or a remote rural area) so you could ask your local authority for help and advice.

“Since teleconference calls have become integral part of the company’s norms, our Scope 2 emissions in transport have significantly dropped.”
John, sustainability manager

“Most of the time our display screen displays a picture of a smiley face, which is representative of a ‘happy house’. If we suddenly start using a lot of energy it changes to a sad face and the ‘unhappy house’ status. I’ve noticed this often happens when we switch on our gigantic oven, which is interesting because I had no idea it uses so much energy.”
Sarah, domestic consumer
Making the link between home and work
Try to make the link between saving energy at home and saving energy at work during these sessions. For example, if you’re talking about switching out lights then look for the parallels between home and work. Find out what data people can see at home and what data they can see at work to see whether you can link the two. If you find that people are switching off lights at home but leaving them on at work then try to understand why. This insight could help you to identify and overcome barriers to unlocking energy saving potential at work.

Materials and resources
User-generated content is always popular and effective – ask your employees for their views and stories and really engage them in the subject. For example, ask them to share their experiences of saving energy in the office and at home, their experience of using a smart meter, and their tips and advice for making the most of it.

The Carbon Trust has produced a comprehensive library of low carbon publications, including many on energy efficiency in the workplace. You can access the full range of tools, guides and reports for free on the Carbon Trust website: carbontrust.com/resources.

Be creative with content and source material from other websites. For example, the Smart Energy GB website includes a range of innovative recipes that use less energy, e.g. cakes baked in a microwave oven. This content can be used in your own newsletters or intranet pages. Smart Energy GB can work with you to ensure that your communications and engaging and informative.

Remember that these tools and techniques can be applied across other staff engagement topics – not just energy efficiency and smart meters.

Case study
eNewsletters have been used by a range of employers to communicate the benefits of smart meters to their staff and stakeholders.

For example, Islington Council and Adnams Brewery have provided information about smart meters alongside energy and sustainability information.
Other communication channels

There are many other ways to communicate with employees beyond lunchtime engagement sessions. In fact, the more diverse the range of communication channels you use, the more effectively you’ll get the message across. For example:

- think about having regular energy efficiency updates in your staff newsletter, showcasing examples where employees have achieved real results – this kind of recognition is a good way of rewarding employees for engaging in positive behaviours

- intranet pages are increasingly used for internal information and can have the added benefit of being interactive. There are a range of different ways in which you could use the intranet to engage employees, particularly to show data from your own metering systems. For example, you could communicate the energy performance of the building using techniques similar to the Gorilla in the Library case study on page 6. You could also create a function where employees can feed back on building temperature and you can offer them advice on how to stay warm or keep cool

- blogs and podcasts are a great way of engaging staff in an issue. You can use ready-made content from organisations such as Smart Energy GB or the Carbon Trust, or generate your own content by asking staff to write or record a contribution such as a simple podcast or even a video diary

- team energy champions can be a fantastic way to get information out to staff. They can also tie in energy efficiency activities with the broader sustainability agenda. They are often the company’s frontline representatives for staff when it comes to sustainability issues

- other staff representatives provide a strong link with employees on the ground and can be a trusted source of information for many staff. Think about enlisting their help to get the message out to help employees take advantage of energy efficiency opportunities

In-house energy efficiency awareness and behaviour change campaigns

Another way of encouraging more energy efficient behaviours in the office is to design and run a bespoke, in-house behaviour change campaign. These campaigns tend to focus less on an overall shift in employee values to make them more environmentally-aware, but look instead to use existing values and motivations to encourage employees to make very specific changes to existing behaviours.

People can have different motivations at home and at work so targeted, workplace-based campaigns can be an effective way of making sure that the message gets through and increase the likelihood of action being taken.

“‘We keep the display on the worktop in the living room and we like to look at it in the morning to see how much we have spent overnight. This has really helped us because we used to have a security light that we didn’t realise was coming on throughout the night and using a lot of energy.’”

Jonathan, domestic consumer

“‘Our metering showed that our company was the worst performing one in terms of energy consumption in the whole building. An audit showed that the security guard who was the last one to leave the office had not been trained adequately. After raising awareness around switching off all non-essential lighting out of business hours, our company saw 10% savings of lighting costs.’”

Aaron, energy manager
Laid out below is a step-by-step guide to creating a bespoke energy efficiency behaviour change campaign.

The more research you can do the more effective your awareness campaign will be.

1. **Collect quantitative data**
   All awareness and behavioural campaigns should be driven by the best-possible quantitative data. The available data will depend heavily on what metering you have in place – the more granular that data, the better. Smart or half-hourly meters will really help here, and will enable you to feed back near real-time data to staff in different ways.

2. **Collect qualitative data**
   Quantitative data allows you to form working hypotheses about where energy is being wasted, but this needs to be checked against qualitative data. Qualitative data can be gained from focus groups, walk-around surveys and monitoring, and staff surveys. It is important that you back up quantitative data findings with qualitative research: you might assume that high electricity demand is due to equipment you’re aware of, but it could actually be due to staff using portable heaters that you didn’t even know they had.

3. **Look for non-energy related motivations**
   Focus groups are particularly important as they will enable you to understand why staff are not already engaging in energy efficient behaviours and the non-energy related factors that might persuade them to do so (see police HQ case study above). Ideally, focus groups should be run by experienced individuals in line with ethical research practices.

4. **Ensure you have senior management support**
   You’ll need senior support to free up the resources you need to plan and run campaigns. This is particularly important in smaller organisations or those with a very visible senior management team, where the individuals in charge can really set the tone, culture and influence individual working practices. If you don’t have top-level support in those circumstances you’re unlikely to achieve much.

**Case study**

A police headquarters was having problems persuading employees to shut down computers overnight. The usual energy saving and cost saving messages hadn’t worked. The Carbon Trust worked with staff to establish why those messages were not working and found that staff were so committed to doing their jobs that other messages which didn’t seem directly relevant struggled to get through. However, shutting down overnight has other benefits that did relate more directly to people’s daily jobs – it increases cyber security by allowing patches and updates to take place. It was therefore possible to design a campaign around switching off PCs to improve cyber security, a message that resonated far better with the dedicated police HQ staff.

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**Charlotte, domestic consumer**

“When I moved into the house it had six 50 watt halogen bulbs in the kitchen ceiling and you wouldn’t believe what they cost when they were switched on! Since seeing how much they cost to run on my in-home display I have replaced them with similar LED bulbs they cost about a tenth of the price as I’m now using 21 watts instead of 300 watts!”
5. **Analyze**

Using the results of your quantitative and qualitative data gathering, identify the areas where behaviour change could have the most impact. Look out for areas where a technical fix would be more appropriate. For example, where possible it’s usually more cost-effective to automate lighting rather than run campaigns to persuade people to switch off the lights.

6. **Set realistic goals**

It is important to set achievable targets. You will need to create a positive feedback loop for staff so you may want to focus on small, achievable goals that you can use to generate a positive message, and create further support for future activities. You can use an ease – effort matrix like the one above to try to establish which areas offer the most realistic potential.

7. **Create campaigns**

When you’re creating a campaign, think about what staff have told you are their main concerns, through focus groups, surveys and conversations, and try to build your campaign around that. Use principles such as ‘the bandwagon effect’ - people are more likely to adopt a behaviour if they think most people are already doing it. In practice this means presenting data positively, e.g. 75 per cent of staff already shut down computers overnight is a more effective message than 25 per cent of staff do not shut down computers overnight.

Think about multiple channels of communication, e.g. emails, posters, interactive intranet pages, staff meeting messages. Try to make sure that the message is given at the point when the decision to take an action takes place - e.g. if people send documents to print from their desk then putting posters about printing less by the printers means the message arrives too late.
Deliver
Now that you know your starting point and what you are trying to achieve, you can begin to pilot your behaviour change campaign. It's a good idea to run small pilots first so you can collect feedback and refine the campaign before rolling it out to the whole company.

8. Plan your resourcing
Think carefully about how much time any activities will take – if you're going to ask for staff time then make sure that senior management approve and promote it. Remember to plan carefully for offering feedback – if you fail to give feedback in the right way at the right time then you risk a bounce-back effect, undermining your original activity and making further action more difficult.

9. Time your campaigns carefully
Timing is critical – this includes time of year, time of day, and timing alongside other things going on in the business. For example, if you want to run a heating campaign asking people to layer up to reduce heating needs, you need to have your material ready to deploy as soon as the temperature drops – don’t bundle it up with other material delivered at another point in time. Or, if you’re running a switch-off campaign and sending emails to encourage people to shut down at the end of the day, don’t send the email in the morning!

10. Target your audience
Use your qualitative research from walk-arounds, surveys and observation to work out who you really need to target. Whilst involving staff from all levels across the organisation helps to drive commitment to change and "buy-in" towards energy reduction activities, for specific actions it may be more useful to hone your target audience. For example, there is no point telling employees to switch lights off when they leave if cleaners or security guards come in after everyone has left and leave them on again. Make sure that you are targeting the people whose behaviour you actually want to influence.

Monitor
You need to regularly monitor your campaign to discover successes and failures, gather feedback and maintain momentum and interest. Use the learnings to refine your messages and improve future activities.

11. Evaluate
Be rigorous about quantitative and qualitative monitoring – do everything you did at the beginning (data analysis, walk-arounds) to check whether anything has changed as a result of the engagement campaign. Have you made a difference? If there has been no change then talk to staff and try to find out why. Use that understanding to refine future activities. Check for external factors such as weather or purchase of new equipment.

12. Ask for feedback
Be prepared for positive and negative feedback and try to take it all on board. Consider anonymous feedback if you think people might otherwise tell you only what they think you want to hear. Planning how you will ask for feedback before you begin an intervention will make the feedback process easier.
How does all this apply to small companies?
Small businesses can request a smart meter, just the same as those used in homes. You can request a device to see your company energy use in real time, and access to data through websites or apps.

Even for smaller companies it is worthwhile doing some of the staff engagement activities listed in this guide - just make them proportionate to your company size and energy spend.

In smaller companies the measures that can be taken at work and at home will be similar, and so it may be easier to gain interest and buy-in.

Towards a smart energy future at home and at work
The way we think about energy at home and at work is different, but smart meters are one way of bridging that gap.

In larger companies with half hourly metering (and sometimes sub-metering), energy managers are usually able to view energy use information, either through their building management systems, or through online tools provided by energy suppliers or meter reading companies. We know that targeting improvements based on this data can save 5-10 per cent or more on energy bills.

Energy use in a business varies by time of day, and energy use profiles can be used to identify unusual, unexpected or unnecessary energy use.

Using smart meters can bring your employees similar benefits in their homes, based on the ability to see real-time data and act on it. In fact, we know from research that the act of measuring energy use through a smart meter is already having a positive impact on users’ behaviour. In future it will allow domestic customers to engage in the Demand Side Response (DSR) market. For example, at peak times a domestic customer could choose to reduce their demand by switching off or not using appliances, freeing up capacity, in return for a financial incentive. This could be a manual choice by the consumer or systems could be set to automatically reduce unnecessary load (e.g. switching off a fridge for half an hour) in response to a price signal received by the smart meter.

Just as people will have the possibility of shifting demand at home, they may increasingly find themselves asked to be part of shifting demand at work. Many organisations already have arrangements with energy companies where they reduce their demand at peak times to help ease pressures on the grid (and benefit from incentives, or reduced energy costs). Demand shifting can involve shutting down equipment or using stand-by generation, but employee behaviour can also potentially play a part by reducing the energy use under their control at key times.
Domestic customers with smart meters can see their data in a range of exciting ways (e.g. display devices, online, mobile apps) and informative designs (graphs, instant usage and costs, traffic lights etc.), depending on their smart meter supplier. Most displays will look similar to this one:

Try sharing your company’s energy use data with employees and discuss how it is used. They may suggest new ideas about what is causing trends and anomalies, as well as gaining a better understanding of the energy use within the business.

‘Gamification’ of data is already being trialled and showing good results in live projects\(^9\). For example, demand response games, where domestic customers energy to be controlled remotely have been developed. In return for participation in the game there is an opportunity to compete for cash prizes\(^10\). It has been estimated that, if as many people played a demand response game as played Pokemon Go, it could potentially free up 500MW of capacity, or enough electricity to power 1.1 million homes. This kind of game could also be played in the workplace, competing with colleagues or against other organisations or buildings.

Improving employees’ awareness of their energy use at work will bring down organisational costs and improve productivity, as well as show leadership in combatting climate change. By including this in your environmental or CSR programme and including energy efficiency at home you can improve engagement with employees and be seen a positive and caring employer. Whether you tackle energy efficiency through information sessions, awareness-raising programmes or specific behaviour change campaigns, measuring, understanding and controlling energy use and energy bills is key. At work advanced energy meter data can demonstrate where the priorities are, and a smart meter can achieve the same effect at home. As this guide has shown, smart meters will also pave the way to an even more interactive energy system, but already offer the potential to help people understand their energy use, get bills under control and start saving energy straight away.

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Smart meters are the new generation of gas and electricity meters which are replacing the traditional meters in our homes. Every home in England, Scotland and Wales will be offered a smart meter by their energy supplier, at no additional cost. For a simple introduction to smart meters check out the Smart Energy GB videos available here: smartenergyGB.org/en/about-smart-meters/what-is-a-smart-meter

Smart meters will enable you to see exactly how much energy you’re using, as you use it, and what it is costing in pounds and pence. Smart meters take regular readings and share these wirelessly, through a secure network, with your energy supplier. This means your bills will be accurate, not estimated, and you will no longer need to have manual meter readings. In the future, smart meters will make switching between suppliers, or between credit and prepay, quicker and easier. If you are a prepay customer, you will also be able to top up online or via mobile phone.

What happens next?
Before your installation day
Your energy supplier will contact you beforehand to arrange a time and date for your installation. They will tell you what to expect, how long it will take and if there’s anything special you need to do.

A word of advice: you will need to let the installer in on the day and make sure they can get access to your traditional meters. So you might need to clear out the cupboards. Any access issues, do let your supplier know.

During your installation
Depending on whether you’re having one or both replaced, you’re having one or both upgraded, you’ll get a electricity and gas meter. These normally go exactly where your old meters were. If they need to be fitted somewhere else, the installer will ask you first.

You’ll also be offered an in-home display – a portable display screen that you can put anywhere in your home. You don’t have to have one, but it’s the easiest way to see what energy you’re using and what it’s costing you. The in-home display will not cost you anything.

The installer has to:
• show you a photo ID card when they arrive
• explain what your smart meter system does and how to use it
• check it’s all working properly
• give you a handy guide to using it
• answer any questions you have
• tell you where you can find more help and information

How can I get a smart meter?
Smart meters can only be installed by your energy supplier. Contact your energy supplier to request your installation. To find out more check the Smart Energy GB website:
smartenergyGB.org/en/how-to-get-a-smart-meter/energy-suppliers
If you don’t know who your energy supplier is then you can call this number to find out: 0870 608 1524.
Top-tips for low and no cost ways to save energy at home:

1. Ask your energy supplier about getting a smart meter at no additional cost, to help you understand how much energy you are using and where you could save.

2. Turn down your heating by 1°C: Turning down your thermostat by 1°C can save around 8 per cent of heating costs.

3. Keep your radiators clear: Avoid blocking radiators with furniture, such as sofas and shelves, or using them to dry clothes.

4. Install insulation on your hot water cylinder and pipes: Insulate hot water pipes and install a hot water cylinder jacket, and you will typically save enough energy to recoup the cost of this within three years.

5. Install draught proofing measures: Draughts can make a room feel much colder than it is, which encourages people to turn the heating up.

6. Switch off equipment: Ensure that your appliances are turned off at the wall rather than in standby mode to save up to £30 a year.

7. Use thermal curtains (or just heavy ones) during the colder months: Close them at dusk during the winter so heat doesn’t escape through the windows.

8. Fit a shelf above the radiator to redirect heat: Fitting a shelf above the radiator to deflect the heat into the centre of the room rather than letting it drift straight up to the ceiling.

9. Use natural cooling: During the summer months, use natural cooling by opening windows overnight to make use of lower outside air temperatures (as long as this doesn’t leave your house unsecure).

10. Use blinds, shades and shutter during summer: If you use air conditioning, save energy by closing blinds and shades on south-facing windows during the hottest part of the day (11am – 3pm).

11. Replace old light bulbs with energy efficient bulbs: Switching to efficient light bulbs uses up to 80 per cent less electricity than a standard bulb, but produces the same amount of light. LED bulbs can be found to fit almost all light fittings now and typically save up to 15 times their purchase cost over their lifetimes.
Heating and cooling advice for employees:

1. Find out who manages your heating and air conditioning: This allows you to report any issues or requests to the correct person, so that they are addressed as soon as possible. It will also help you to understand how the system works across different rooms.

2. Reduce sun radiation: If you sit near a window, and the heat from the sun is making you uncomfortably warm, close blinds or where possible adjust the blinds to direct the light away from your desk and towards ceilings or walls. Blinds or curtains should be closed at night to reduce early morning solar heat gains from the sun in the summer and heat loss in the winter.

3. Turn the heating down before opening a window: If you are too hot, first check whether the heating is on and whether it can be turned down before opening a window. If it is on, opening a window can cause the heating system to work even harder.

4. Use natural ventilation and cooling: Before turning the air conditioning on, first check whether opening windows on opposite sides of the room can achieve a comfortable temperature. If this is not possible, close the windows when the air conditioning is turned on. Air Conditioning should never be operating while the windows are open.

5. Avoid using portable heaters and coolers: Do not bring heaters or coolers into the office without permission. These devices are often a health and safety hazard and should never be left in unoccupied areas or plugged into an extension lead. If you are feeling too hot or too cold - report it first.

Heating and cooling advice for energy managers:

1. Maintain your building fabric: Ensure that your building fabric (the walls, floors, roofs, windows and doors) of your building is in good condition and well insulated. Ensure that windows and doors are sealed without any gaps.

2. Temperatures appropriate for the activity: Understand the most appropriate temperature for the activity in your workplace to avoid over heating or over cooling. If there are different needs in different rooms, set the room thermostats accordingly.

3. Go natural: Use natural ventilation and night cooling where possible. Open windows at opposite sides of the room to encourage air circulation at times of the day and night when the temperature is lower outside than in.

4. Set a ‘dead’ band: Do not heat and cool the same space at the same time – set a ‘dead band’ between the thermostats of the heating and cooling systems.

5. Use time switches: Use time switches to ensure that your HVAC systems are only operating when needed. Make sure you adjust them when the clocks change. You could try turning off the heating / cooling an hour or so before most employees leave (or install equipment such as optimising controllers to do this automatically).

6. Insulate hot water cylinders and pipes: Insulate all hot water pipes with temperatures over 50°C and install a hot water cylinder jacket for a typical payback of less than three years.
**Lighting advice for employees:**

1. Always turn off the light when you leave a room: Unnecessary lighting usage wastes energy and money. Forgetting to turn off the light once may only have a small impact, but the impact quickly grows when they are regularly left on. If you make a habit of turning them off you may find that your colleagues follow your lead, multiplying your impact.

2. Use natural daylight as much as possible: Daylight is free and zero carbon, yet in offices with lots of natural daylight it’s common to see the lights on when there is more than enough light. Switch them off when they’re not needed. Where blinds are used to reduce glare or solar gain, try adjusting them so that they reduce direct sunlight but still let in enough daylight to allow the electric lights to be switched off.

3. Use enough light for you: When working alone, consider whether the entire room needs to be lit or whether a small task light will suffice. If this happens regularly but you cannot control the lights, speak to your manager about getting a task light.

4. Find the switch: Many people don’t switch lights off because they don’t know which switch controls which light. It’s very important that big banks of light switches are accurately labelled - ask your managers to label them to help you and other staff.

**Lighting advice for energy managers:**

1. Conduct a walk round: Walk round the office in the morning, at midday and in the evening to record which lights are left on unnecessarily.

2. Label light switches that can be turned off by all staff: Especially in infrequently occupied areas such as meeting rooms, storerooms and bathrooms.

3. Implement a switch-off schedule: Who is the last person to leave the building every evening? Ensure that cleaners and late workers know which switches they need to turn off on their way out.

4. Remove excess lighting: If lighting levels could be reduced, either install dimming controls, or simply consider removing bulbs from unnecessary light fittings for immediate energy savings.

5. Clean windows and light fittings: Without regular maintenance lighting levels can fall by up to 30 per cent in 2-3 years, which reduces the ability of employees to work effectively and causes additional use of artificial lighting.

6. Use natural daylight as much as possible: Consider fitting slatted daylight blinds, which allow sunlight to enter the room without decreasing employee comfort, by directing sunlight up to the ceiling where it is reflected throughout the room.
Office equipment advice for employees:
1. Activate power saving features on your equipment: Ensure you reduce your ‘phantom’ power use.

2. Turn it off: Equipment when plugged in/switched on still consumes energy. Switch off or unplug all equipment if fully charged or not in use and at the end of each day.

3. Reduce printing: Use ‘print preview’ to reduce the number of printed drafts, consider double-page printing and print in batches, to reduce the ink warm up time.

4. Save in the kitchen: Fill kettles only with the amount needed, switch the coffee machine off at the end of the day, keep fridge doors closed, wash up in batches or only run the dishwasher when it’s full to keep energy use in the kitchen to a minimum.

Office equipment advice for energy managers:
1. Activate power saving features on all equipment: Ensure you reduce your ‘phantom’ power use.

2. Implement a group switch-off schedule: You can schedule the switch off of several pieces of equipment at once, to ensure that nothing is left on overnight and at weekends.

3. Install plug-in seven day timers on shared equipment: Relatively cheap to buy from most DIY stores, they will ensure that nothing is left overnight and can save up to 70 per cent on energy costs.

4. Take care of your technology: Well-maintained equipment is more energy efficient. Taking care of your equipment will extend its lifespan, save maintenance costs and reduce the risk of breakdown.

5. Centralise your equipment: Ensure that staff do not have individual printers on their desks or individual portable heaters or fans. Talk to them about their needs and find a solution on how to centralise this equipment.
**Factsheet 4**
Smart Energy GB FAQs

**What is a smart meter?**
Smart meters are the new generation of gas and electricity meters. They are being installed in homes and small businesses to replace traditional meters.

**What are the benefits?**
Smart meters are paving the way for a smarter, greener and more energy-efficient future. The key advantages are that your bills will always be accurate and you will have access to all the information you need to manage your home:

- accurate energy bills – with no need for manual meter readings
- the information you need to work out whether you are getting the best deal, or if you should switch to a different tariff or supplier. Once the national infrastructure is complete smart meters will be fully interoperable between suppliers, which will mean quicker and easier switching
- in future, cheaper tariffs will be available at off-peak times. This means we will pay less to mow the lawn or run the washing machine when electricity is not in high demand

**How will prepayment customers benefit?**
Smart meters will make prepayment as easy as prepay your mobile. You will have the ability to switch easily between payment options with no need to change your existing smart meter. Smart prepay means you can:

- conveniently see how much credit you have left on your in-home display, without having to look at a meter which might be outside or in the back of a cupboard
- top-up when and where you want to – online, with an app, on the telephone, or via text message
- top-up with cash payments in person, without any need to put a key or card back into a meter, which may be difficult to access. Payments will automatically be added to your account
- pay the same rates as everyone else – smart meters remove the need for prepay to be more expensive than other tariffs
How do smart meters work?
Your smart meter measures how much gas and electricity you use and communicates this information directly to your energy supplier and your in-home display, using secure wireless technology.

How can I get a smart meter?
Every household in England, Wales and Scotland will be offered a smart meter by 2020 and they will be provided and fitted by your energy company, at no extra cost to you.

You can also register your interest with your supplier. For more information please see our information page: smartenergyGB.org/get-yours
Visit smartenergyGB.org/smartideas or our YouTube channel to find out more.

Will my smart meter stop working if I switch energy supplier?
Many people with smart meters can switch seamlessly between different energy suppliers. However if you’re considering changing energy supplier, it’s best to check if your new supplier can support smart metering technology before you agree to switch.

In this early stage of the national smart meter rollout, some people may find that if they switch supplier, they need to start sending in meter readings again in order to get an accurate bill. If this happens, your smart meter may still be able to send information to your in-home display, so you can still see if you’re using a lot of energy.

This is just a temporary situation. A national communications network for smart meters is being set up and once your smart meter has been brought into the network, it will once again be able to deliver its full benefits.

I rent. Can I still get a smart meter?
Yes. If you pay your gas and/or electricity bills and they’re addressed to you rather than your landlord, you don’t need your landlord’s permission to get a smart meter (although you should inform them). If your landlord pays the bills, you should check with them first before arranging your smart meter installation.

Are smart meters safe and secure?
The smart meters used in Britain have undergone one of the most rigorous safety testing regimes in the world and exceed every UK and EU safety standard.

The energy use data that is created is stored and transmitted very securely. Smart meters do not use the internet, they will use their own dedicated secure system.

How do smart meters differ from other energy gadgets?
You can buy a range of energy gadgets that track how much electricity you’re using, but, unlike with a smart meter and an in-home display, they can’t measure gas.

Only a smart meter can make sure you get accurate bills, rather than estimates, by sending your meter readings directly to your energy supplier.

How much will the smart meter rollout cost Great Britain?
Smart meters are an essential upgrade to a creaking system. The savings of nearly £17 billion will far outweigh the investments of almost £11 billion – meaning an overall saving of nearly £6 billion between now and 2030.
To find out more about smart meters please visit smartenergyGB.org