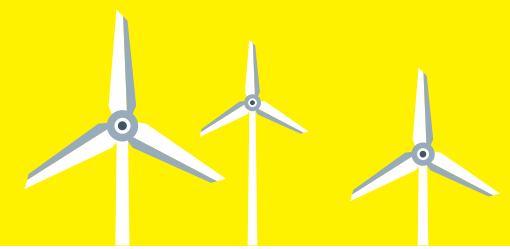


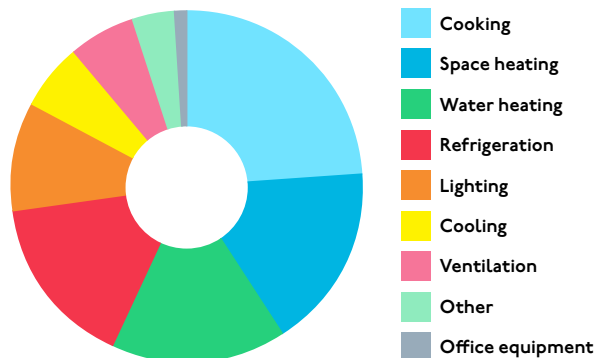
# 2. Energy



The UK hotel and catering sector spends around £400 million per year on energy (electricity and gas). Cooking and heating accounts for over half of that energy consumption<sup>12</sup>.

It's relatively easy for a food business to cut its energy consumption (and costs) by up to 20% by making moderate improvements to its energy efficiency. This section shows you how to do that.

## Catering energy consumption



## Things you can do to make a difference

### 2a. Energy provenance

- Understand your energy use
- Speak to your energy supplier about switching to a 'renewable energy' tariff
- Shop around – see what deals are available on the market for 'green energy' and don't be afraid to switch suppliers if necessary

### 2b. Energy use

- Set your baseline energy consumption and identify and implement energy saving measures across your business
- Train your staff (on an ongoing basis) on good energy efficiency practices
- Buy energy-saving equipment and supplies
- Implement a 'switch-off' policy to ensure equipment is only on when its needed

### 2c. Energy recovery

- Look into installing a heat recovery system in your kitchen that could provide you with free hot water and heating supplies



# 2a. Energy provenance

You probably know lots about where your ingredients come from. After all, food provenance is an increasingly important issue for your customers. But do you know where your energy comes from?

Making careful choices about where you source your energy from can make a big difference to our planet.

## What is 'green energy'?

Green energy reduces our reliance on the planet's finite fossil fuel supplies (natural gas, coal and oil) by harnessing natural, renewable resources to meet our energy needs.

In the case of electricity, those renewable sources are wind, solar, hydro-power, geothermal and biofuel.

In the case of gas, we're talking about something called 'biomethane' – a natural gas that is produced by biodegradable material (such as food waste) as it decomposes. This gas is captured in anaerobic digestion facilities, refined, and then pumped into our National Grid.

## Won't it cost more?

You may be surprised to learn that green energy does not have to cost any more than standard energy.

A number of smaller 'challenger' suppliers have entered the market recently. They are taking on the 'Big Six' energy companies by offering incredibly competitive rates on green energy supplies.



## Take-away

Most green energy suppliers offer packages to their customers that combine genuine renewable energy with carbon-neutral energy (where the emissions produced are off-set by investing in carbon reduction schemes). But it is possible to go the whole hog. **The Buxton Pub** in east London is powered by 100% renewable energy. The owners reduce their power needs by exclusively using low energy light bulbs, which adds to the atmosphere of the beautiful old building.



## 2. Energy

### How to make the switch

Follow these simple steps to switch to green energy supplies:

**1. Look at your current energy deals** – when do your contracts expire? How much energy are you using? What unit rates (per kilowatt hour) are you being charged?

**2. Contact your existing supplier** – find out the best green energy deal they are able to offer.

**3. Compare** – check average business energy prices online to see if you're being offered a good deal – don't forget to include any standing charges (fixed costs that are set and don't go up and down depending on your energy use) in your calculations.

**4. Shop around** – speak to a few other green energy suppliers to see if they can offer you a better deal.

You could also opt to use the services of an energy broker. These are third party intermediaries who will guide you through the whole process.

### Green energy suppliers

There are a number of energy suppliers whose green energy products are well worth exploring. These include:

- ♦ [Good Energy](#)
- ♦ [Green Energy UK](#)
- ♦ [Ecotricity](#)
- ♦ [Octopus Energy](#)
- ♦ [Outfox the Market](#)
- ♦ [Pure Planet](#)

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Want to learn more? Download the Carbon Trust's [SME Guide to energy procurement and green tariffs](#) or the Energy Saving Trust's [Guide to Buying green energy](#).

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Source: WRI data 2016





## 2b. Energy use

Reducing the amount of energy you use makes perfect business sense; it saves money, enhances corporate reputation and helps in the fight against climate change.

Food businesses consume (and waste) large amounts of energy, typically accounting for 4-6% of total operating costs<sup>13</sup>. In some kitchens, as little as 40% of the energy consumed is used for the preparation and storage of food; the rest is dispersed into the kitchen as waste heat.

So effective energy management in food businesses can deliver substantial savings, as well as improving working conditions in the kitchen.

Set your baseline energy consumption using the [Carbon Trust energy benchmark tool](#). Take a good look around your business (in particular your kitchen). Think about your cooking, washing and refrigeration equipment; your heating, ventilation and lighting. You will soon see that opportunities to save energy are everywhere. The rest of this section provides some hints and tips to get you started.



### Switch-off policy

It is common in professional kitchens for all equipment to be switched on at the beginning of a shift and left running throughout the day.

Not only is this extremely wasteful, but equipment left on unnecessarily generates heat, making the kitchen unpleasantly hot and uncomfortable to work in.

You can save energy and money by implementing a simple 'switch-off policy' and providing staff with information about preheat times, control settings and good practice.

### Staff training

Staff training is an essential part of the solution. But due to the relatively high turnover of staff in the food business sector, it's essential that this training is delivered on an ongoing basis. Why not make it a regular discussion topic in your team meetings?

Some food businesses have cut their energy bills by more than 15% simply by adopting good housekeeping measures, reinforced through effective staff training and regular refresher courses.



### Equipment purchase

When purchasing new equipment, it can be tempting to go for the cheaper option. But that is often a false economy: the cost of running equipment over its lifetime can be several times higher than the initial purchase price itself.

So make sure you do your research. Carefully consider the running costs (or the 'total-life cost') when making your decision. Energy efficient models may cost a little more in the first place, but you'll be pleased when they start saving you money every day.

For example, a restaurant that replaces 18 Halogen Lamps (50W) with the same number of LED lamps (6W) will save £278 per year. With an initial cost of £166 for the LED lamps, the investment will be paid back in just 7 months! After that, the savings are just profits for your business.

In order to compare the energy consumption of equipment you need to look at the power consumption, expressed in watt (W) or kilowatt (kW). When purchasing new appliances look out for energy labels which will rank the efficiency from A to G according to the appliances energy consumption. Class A (green) is the most energy efficient and Class G (red) the least.



### Take-away

**Hilton's Birmingham Metropole Hotel** is saving over £11,000 per year on energy costs after installing extractor fans that automatically monitor cooking activity and adjust their operation accordingly. The Cheetah Energy Control system has contributed to cutting the hotel's energy use from 220.67kWh/day to 105.59kWh/day.

### Refrigeration

Your fridges and freezers are on all day and all night, so choosing energy efficient models can be one of the best investments a food business can make. The following tips will help you make the right decision:

- ◆ Use the official energy efficiency rating to help you compare models and make an informed choice – ideally you should be choosing A-rated appliances'
- ◆ Choose a model with an automatic defrost system – this will ensure it runs efficiently at all times
- ◆ Self-closing doors are a handy feature – they help save energy
- ◆ Stable door fridges are also great for saving energy – you only open the door of the side you need access to, keeping the other side nice and cool.

### Washing

When purchasing new washing equipment, look out for the following energy-saving features:

- ◆ Well insulated dishwashers that retain heat within the unit
- ◆ Low water-use dishwashers with efficient filtration and recirculation of rinse water which can save on both water and the energy used to heat it
- ◆ Washing equipment with pre-installed heat recovery
- ◆ Machines that are capable of taking a hot water supply (preferably from a central gas boiler) and do not rely on expensive hot water generated within the machine from electricity.

### Cooking

It will come as no surprise that the things that create the most heat in your kitchen (ovens, hobs and grills) are also amongst the most energy-hungry. But some are much hungrier than others.

The energy requirement of an induction hob is 15-50% less than that of a conventional gas or electric hob. As less heat is generated, further savings are also achieved through reduced ventilation requirements. Combi-steam/convection ovens are suitable for all types of catering operation and can reduce energy costs by around 25-50% when compared to other equivalent cooking appliances such as electric hobs.



## 2. Energy

Microwave ovens can also be a very energy-efficient way of cooking and reheating meals. Bear this in mind when purchasing new equipment.

### Equipment use

#### Refrigeration

Make sure you've got your refrigerators set to the ideal temperature. Too warm and you won't keep your food fresh. That would be awful – there's nothing worse than food waste.

But many kitchens also have their fridges set too low; just 1°C can increase running costs by 2-4%.

So make sure your equipment is set to the manufacturer's recommended temperature and don't over-chill.

Other things worth considering:

- ♦ Try to locate refrigerators and freezers away from heat sources
- ♦ Check that door and lid seals are in good condition and replace as necessary
- ♦ Replace old equipment with new energy-efficient models – don't forget to recycle your old items; companies like Environcom can help with that.

#### Washing

When using washing equipment, follow these energy-saving rules:

- ♦ Maximise dishwasher loads by fully loading and correctly stacking
- ♦ Ensure that taps are switched off after use and that food and utensils are not washed under running water
- ♦ Keep equipment well maintained – ensure heating elements, jets, sprays, thermostats and drains are clean and unclogged
- ♦ Use the economy setting on dishwashers
- ♦ Ask staff to report leaking washers or taps
- ♦ Consider the use of low temperature sanitising liquids.

#### Cooking

Simply keeping hot plates and gas burners nice and clean can significantly improve their performance. Introduce regular servicing of cooking appliances and make sure those services cover thermostats and automatic timers.

Simple things like keeping lids on pots when bringing water up to boiling point and only not over-filling pans can make a big difference.



## 2. Energy

### Heating, ventilation and extraction

Heating, ventilation and extraction are vital to maintaining a safe and pleasant working and dining experience. There are many things you can do to reduce their environmental impact.

One of the simplest things is to clean filters, grilles and fan blades regularly to prevent a build up of grease and maintain efficient operation.

You should also consider:

- Installing energy-efficient ventilation hoods and locate these directly over ovens, fryers and grills which need air ventilation
- Making sure that ventilation controls are set correctly and reflect demand – don't draw excessive air from dining areas
- Ensuring kitchen fans are switched off when no cooking is taking place
- Install separate heating controls (e.g. thermostatic radiator valves) in kitchen areas and don't rely on cooking appliances to heat your kitchen.

### Lighting

Lighting accounts for more than 10% of the total energy consumption in food businesses.

Good levels of illumination in kitchens must be maintained for efficient working practices and health and safety requirements, so light must be well distributed to avoid shadow.

The visual appearance of food is an essential part of producing an appetising meal so catering operations require lighting with good colour rendering properties. LED lights for the kitchen and either fluorescent tubes or LED lights for the dining space would be the optimum choice to produce good colour reproduction and light output with reasonably high energy efficiency.

Keep light bulbs, lamps and light fittings clean to maximise efficiency, and, whilst we don't mean to nag, please don't forget to turn the lights off when the area is not in use!

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There are so many things you can do to reduce your energy use – the ideas provided above are just a taster. For more information and advice, we recommend you download and read the excellent [Hospitality sector energy saving guide](#) by the Carbon Trust.

Suppliers of energy-saving products you may want to check out:

[Tala & Plumen](#) – sell beautiful, sustainable LED lighting, designed to last:

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### Tax incentives

The government is keen for food businesses like yours to invest in new energy-efficient equipment and they encourage it through the [Annual Investment Allowance \(AIA\)](#) scheme.

The Annual Investment Allowance is a tax relief scheme that allows your business to deduct the total amount spent on qualifying equipment from your taxable profits in the same tax year. Just one more reason to go green!





## 2b. Energy recovery

Kitchens and dining rooms are not natural bedfellows. Maintaining a pleasant dining experience when right next door (or sometimes in the same shared space) you have an operation that produces, heat, steam, odours, grease and oil is a challenge.

Good ventilation and heat extraction is key. But it's a great shame that most food businesses simply pump all this heat outside when 95% of it could be captured and re-used. Putting this waste heat to good use could save you money, reduce your environmental impact and improve your green credentials.

Installing a heat recovery system in your kitchen needn't be disruptive and you could make your money back in as little as 18 months, thanks to the significant savings you'll be making on your energy bills.

There are lots of different systems available, to suit different budgets, buildings and kitchen arrangements. Some (like [Nuaire](#)) are air exchange systems that feature a heat recovery element. Others (like [Dext](#) and [Kers](#)) use the heat they capture to provide hot water.

It's worth getting some professional advice from a suitably qualified engineer who can conduct a detailed feasibility study and tell you more about the benefits a heat recovery system could deliver for your business.



### Take-away

Popular Indian restaurant, **Dishoom**, was having problems with the reliability of its hot water supply. They installed two Dext heat recovery systems – one behind the robata grill and the other next to the tandoor ovens. They now have a storage system full of low-carbon hot water produced on-site, which provides ample supply during busy periods. Problem solved.

