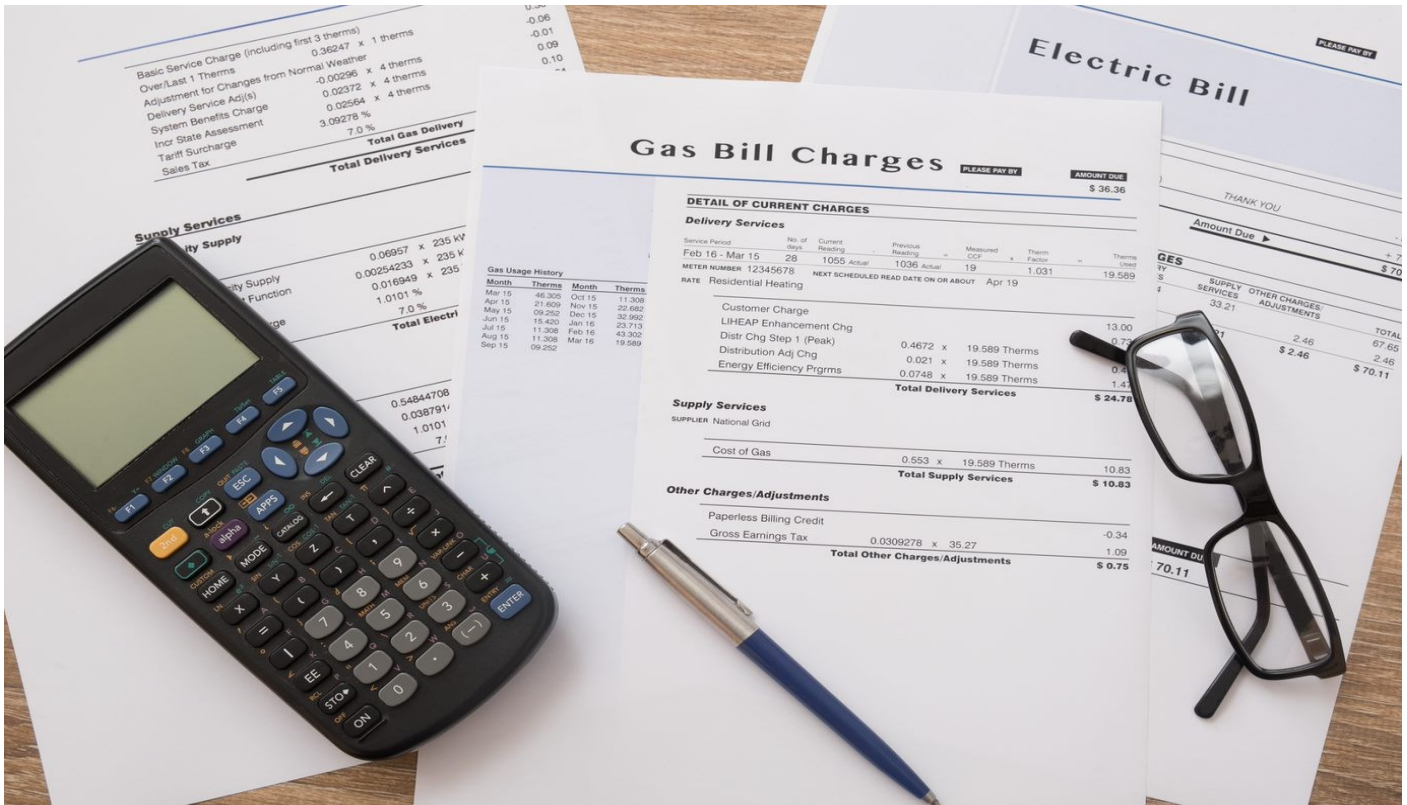


## ENERGY BILLS & CONTRACTS



### Understanding meter readings

Accurate and regular meter readings form the basis for all energy saving measures a business might consider. Providing your energy supplier with regular meter readings ensures you only pay for the energy you use, as well as helping you choose the most appropriate tariff for your consumption.

### Understanding your meter

For business energy purposes there are several types of energy meters available, all designed to work to meet the need of the consumers using them. Standard meters require that you take the readings send them to your utility company. If this isn't done regularly the utility company will predict an estimated usage figure based on historical usage or average figures.

There are three manual meter styles used in the UK, and how to take a reading from each of these is listed below.

The unit of energy used for billing is the kilowatt-hour (kWh). A kWh is a unit of energy consumption equivalent to drawing 1000 watts (W) of power for 1 hour. Most gas meters measure the usage in  $m^3$  and this is then converted to kWh. However, some older gas meters measure consumption in hundreds of cubic feet. 1 hcf is equivalent to  $2.83m^3$  so you should check that the units on your bill match the units that your meter is reading otherwise you could be massively over or underpaying.

## ANALOGUE

These meters come in two types, either with a single number or dual number display. Single number displays have a single row of 5-7 digits, whereas dual number displays have two rows of 5-7 digits. Dual number displays are found when you pay two different rates for your electricity, often a day and a night tariff.

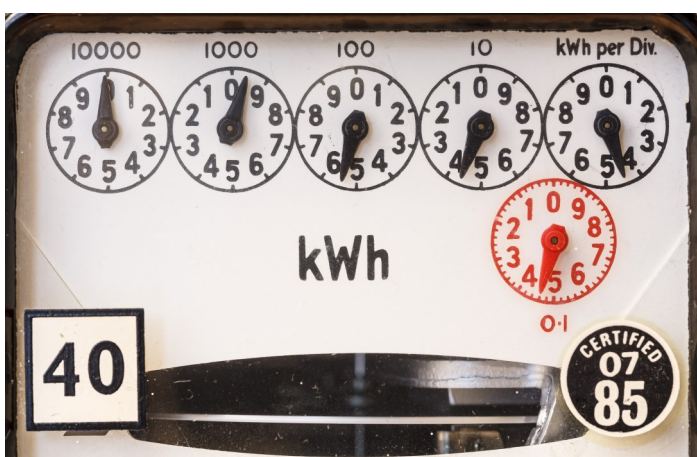
When reading the meter, always ignore any digits in red, or outlined in red. Only read the first five digits from left to right. If the meter is in-between two digits, use the lower of the digits when submitting your reading.



## DIAL

Dial meters consist of five or more separate dials. Each dial will point to a number between one and nine.

Read the dials from left to right, writing them down as you go. Take the lower number if the dial is between two different numbers. Ignore any red dials, or dials with 0.1 on. If the pointer falls between 9 and 0, write down 9 and reduce the reading you took on the dial to the left by 1.



## DIGITAL

Digital meters will show how much energy is being consumed on the display. If you pay two separate rates for electricity, you may have to look through the menu until you have located the readings. Ignore any numbers after a decimal point.

If you have a solar PV system or other local electricity generation there may also be a reading to show exported electricity. It's important not to mix this up with your import figures.



## Smart Meters

Smart meters automatically transmit energy usage data to your supplier, removing the need for you to take meter readings. As with the roll out of smart meters in domestic properties, energy suppliers are also required to provide them for most small business customers. Having a smart meter won't save energy by itself, but it will enable you to have a better understanding of your energy usage patterns and help you make informed decisions about how and when you use your energy.

### HALF HOURLY METERING

Smart meters and some manual meters with Automatic Meter Reading (AMR) capability report your consumption to the supplier every half hour. This data is used by energy suppliers to create bills as normal, but also to give detail on what times of day energy is being used and possibly apply variable tariffs based on time of use.

## Meter Types

### SINGLE RATE ELECTRICITY METERS

Single rate meters charge you a single rate for your usage – the cost per kWh electricity is the same at any time of day.

### TWO-RATE ELECTRICITY METERS

Two rate meters charge you two different rates depending on when you are consuming electricity. These include time of use meters (Economy 7 and Economy 10 meters), and evening and weekend meters. Economy 7 and Economy 10 meters offer different rates for electricity depending on the times you use your energy, and weekend meters offer reduced rates on the weekend. This allows businesses who may work outside peak hours to benefit from reduced costs.

### THREE-RATE ELECTRICITY METERS

Three-rate meters allow businesses to pay peak, off-peak and weekend rates for their electricity.

### MULTI-SITE ELECTRICITY METERS

Multi-site meters are commonly found in larger businesses with several buildings. They have several meters linked to one main electricity meter. The main meter can monitor the small meters and list them on the same bill, reducing the number of bills you will receive.

## MPAN and MPRN

Meter Point Administration Numbers (MPAN) and Meter Point Reference Numbers (MPRN) are both identifiers for your energy supplies and are listed on bills. The MPAN (S number) is a 21-digit long supply number for electricity, and the MPRN (M number) is the supply number for gas, typically 6-10 digits long. The MPRN can be found on your gas meter, but the MPAN is often not on the electricity meter and will only appear on your bill.

Supply number:

S	03	801	203
	15	9105	7707 373

The first two numbers of the MPAN indicate the electricity supply's profile class and is based on the load profile and consumption pattern of your business. There are 5 classes in the UK; 01-04 and 00.

01 and 02 profiles apply to domestic customers, although some micro-businesses may fall under the 01 profile.

Meters with 00 profile class are half hourly meters, meaning they transmit the meter reading to the utility company every half hour. Since 2015, all businesses taking out a new energy contract, or renewing an energy contract have had to switch to half hourly metering. There are 4 legacy profile classes (05-08) which by now have should be transitioned to profile class 00. This is under changes to the Balancing and Settlement Code, known as P272 and P322. You should contact your supplier if you have not yet been transitioned. All businesses can request access to their half hourly data which can be used to monitor energy usage.

Meter Profile Class	Usage Type
01—Domestic unrestricted customers	Most home customers and some micro-businesses
02—Domestic Economy 7 customers	Home consumers with Economy 7 meters
03—Non-domestic unrestricted customers	Small and micro-businesses who are non-electricity intensive
04—Non-domestic Economy 7 customers	Small and micro-businesses with an Economy 7 meter
00—Large business energy user	Peak load usage of electricity above 100kW or smaller business consumers who transitioned from profile class 05-08

## Business Energy Contracts

One key difference between domestic and business energy users is that dual fuel bills are not available for businesses, meaning you have two separate contracts – one for gas and one for electricity. Business energy contracts tend to last much longer than domestic ones, ranging from 1 to 5 years.

Contracts for businesses are either on fixed, variable or flexible rate tariffs. Fixed rate contracts lock you in to paying a set price for the contract length. Variable contracts mean that your electricity price will change depending on the wholesale price of electricity. Flexible contracts tend to be used by very large companies, and involve bulk-buying electricity before the business uses it.

## Electricity Contract Types

### FIXED ELECTRICITY CONTRACT

Most smaller businesses tend buy their electricity through a fixed contract. This means that all of the non-commodity charges are included and fully fixed throughout the contract. The non-commodity aspect of the bill is normally shown as a daily standing charge. The unit price for the commodity part of the bill may be on a fixed or flexible tariff. The supplier will take into account the risks of future non-commodity price increases when they set the standing charge. This is helpful for a small business budgeting but can work out more expensive than the alternative of a pass-through contract.

### PASS-THROUGH ELECTRICITY CONTRACT

A pass-through electricity contract splits your bill into the commodity (pence per kWh) element and the individual non-commodity charges which are often listed as separate charges. These third-party charges fluctuate every year and the costs or savings of these price variations will be passed through to your business. One of the separate charges that is passed through to the consumer is the Distribution Use of System (DUoS) charge and this features a 3 tier red/amber/green cost structure which means that businesses on pass-through contracts should try to minimise their electricity consumption during the red band periods. The specific times that the red/amber/green bands apply vary by region. The red band is typically during the period 4pm to 7:30pm on weekdays and during this time the unit rate costs could be more than 50% higher than during the green band which is usually at night times and over weekends.

## Additional Costs and Charges

Business energy charges are structured differently to domestic charges. You pay less per kWh of energy as a business, but business energy rates are subject to additional charges from government and industry schemes.

Business energy bills can be split into 3 main costs:

- Commodity (wholesale) costs per kWh
- Government Policy costs
- Systems and Transmissions costs

Some or all of these charges may appear on your bill. The commodity cost refers to the unit price paid for each kWh consumed, while government policy and system and transmission charges are classed as the non-commodity element of a bill. Your bill may have some or all of these charges listed:

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COMMODITY (WHOLESALE) COSTS PER kWh	Wholesale costs are set and determined by the trading market and change with supply and demand. Daytime and a night-time tariffs on your bills where the night rate is cheaper when there is less demand on the electricity grid.
SYSTEMS AND TRANSMISSION COSTS	Transmission cost (TNUoS) - this charge is from the National Grid for the cost of getting the electricity from a power station to your local distribution network. Distribution cost (DUoS) - this covers the cost of getting electricity through your local distribution system. These can vary regionally. The distribution cost is made up of a standing charge (a fixed cost), and two variable components - the capacity charge and the consumption charge.
GOVERNMENT POLICY COSTS	Renewables Obligation (RO) - this charge supports the development of large scale renewable energy generation.  Climate Change Levy (CCL) - this holds businesses to account for the energy they use, and the impact this has on the environment. The CCL is charged per kWh of energy used, incentivising businesses to become more energy efficient.  Feed in Tariffs (FiTs) - this scheme which ended for new projects in 2019 incentivised small scale renewable energy generation with a financial subsidy. The FiT costs on electricity bills will continue until to appear on bills until 2039 when payments to existing scheme participants will come to an end.  Contracts for Difference (CfDs) - the CfD scheme is used to support low-carbon electricity generation.  Capacity Market (CM) - this cost pays for a reliable electricity supply, ensuring that capacity is always available .

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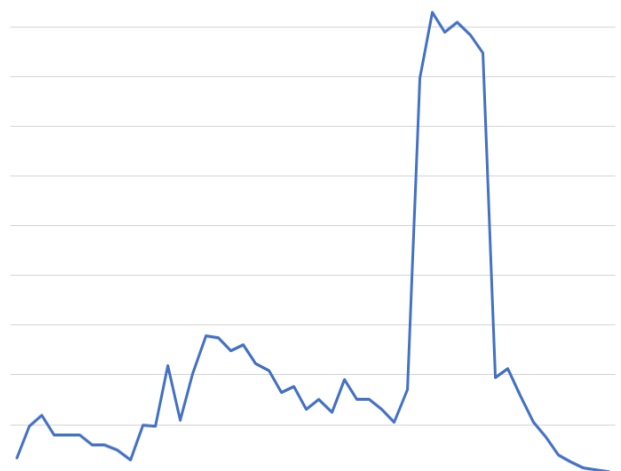
## VAT Rates

While most businesses pay 20% VAT on their energy bills, some businesses will be eligible for a reduced VAT rate of 5% if they fit certain criteria such as:

- If you are a non-profit organisation or charity
- If over 60% of your business energy is used for domestic purposes
- If your business uses energy for residential purposes, such as care homes or student accommodation (only the proportion of energy used for domestic reasons will qualify for the reduced VAT rate)
- Your business will also be eligible for a reduced VAT rate if it uses a low amount of energy. This is the de minimis threshold. The average daily usage must be no more than:
  - 33kWh of business electricity
  - 145kWh of business gas

## Time of Use Charges

To have a time of use tariff the business must have a smart meter installed. These charges and types of contract can be advantageous to large energy users that have control over when energy can be consumed. Energy demand can be planned around periods of cheap energy supply when there is less demand on the grid. Some historical night time unit rates have been zero or even negative but this comes at the expense of potentially very high peak charges. For a business which can flex its electricity consumption dynamically, dramatic savings could be made.



The graph shows how an electricity tariff could vary throughout the day. By electing for a Time of Use tariff, a business may be able to make considerable cost savings if they are able to shift the operation of energy intensive equipment to a cheaper time of day or plan alternative shift change over times.

The environmental impact of business would also be reduced because the most expensive electricity tends to be from power stations which generate the highest greenhouse gas emissions.

## ABOUT US

Decerna provides a wide range of consultancy and development services, to ensure that the right decisions are made, to support our customers in the whole journey, from initial concept through to implementation of low carbon systems and infrastructure. Please get in touch to find out how we can help your organisation to de-carbonise.

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