

[efergy.com](http://efergy.com)

efergy | energy  
efficiency  
guide

# welcome...

This booklet contains information and ideas you will need to develop and implement an energy efficiency strategy.

We believe that targets of between 10 and 20% reduction in electricity use can be achieved by understanding how we use energy. We take energy efficiency very seriously and we want to help you save energy wherever possible.

We hope you find this guide useful and together with your Efergy Wireless Electricity Monitor you can cut back on the amount of electricity you use around the home or office.

Save energy, save money and help save the planet

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## WHY SAVE ENERGY?

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# energy... it's more manageable than you think

## Energy is a controllable cost!

In order to implement energy saving measures and manage your energy consumption, you need to understand how and where your energy is being used.

Energy monitoring with easy-to-use electricity displays can help you maximise energy efficiency and achieve savings of up to 20%

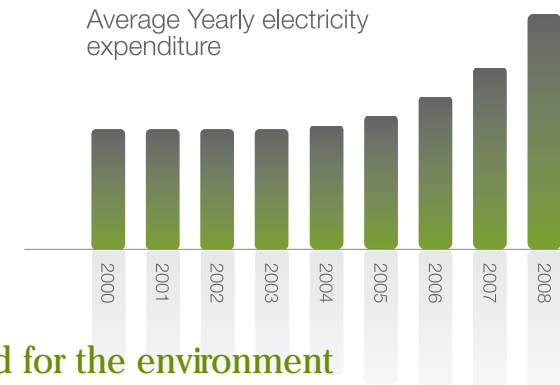
## Create understanding... Save energy

Everyone needs to know why energy efficiency is important. Understanding energy use can be the most cost-effective way to save energy.

# why save energy?

## Good for the home

Energy savings can have significant benefits for your home as it means money saved. The ever-increasing price of fuel is becoming a growing problem for us all. In recent years fuel prices have increased year on year, making us much more conscious of how much we spend.



## Good for the environment

Most of the carbon dioxide and other greenhouse gases released in the UK come from energy generation and use.

### GLOBAL FACT

The UK currently uses 358 billion megawatts of electricity each year and is expected to consume 381 billion megawatts by 2020

### ENERGY FACT

8 out of 10 people have no idea how much they pay for their gas and electricity

### ENERGY FACT

Consumers are twice as likely to struggle to understand their electricity bills, as they are their 'phone bills

# how much electricity do you use?

The amount of electricity consumed varies hugely according to size of home, location, house type and the number of occupants. There are many variables so it is often difficult to understand what you should be using and whether what you use is very high or low.

**Do Some research - Consult the Internet or ask your supplier how much you pay for your fuel, and work out your yearly cost. You then have a base number to work against.**

Often your electricity bill doesn't make it easy to predict how much you are spending on electricity. Make a note of your daily average consumption and estimate your yearly cost.

## monitor your energy use

Energy and monitoring are at the heart of energy management: you need the information to tell when and where you're saving money.

By monitoring your energy use you can account for costs, behaviour differences, and spot things you didn't know before. The Wireless Electricity Monitor is intended to make this process easier to see. Monitoring electricity can save energy and will lead to money savings.

### Play with your Efergy

Use the portable display to show your electricity use. Look at how much electricity you are using, and what you can turn off which won't affect you at that time. Leaving lights on or devices you are not using will add up over the course of a day, week, or even the year.

EFERGY METER



ELECTRICITY METER



ENERGY FACT

If you replaced your 75W incandescent lightbulb with a 20W compact fluorescent, you'd save 590kg of CO<sub>2</sub> a year.

# how to read your electricity meter

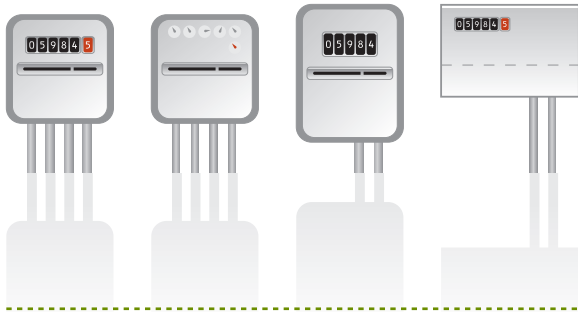
Power consumption is gauged by measuring in Watts (W) the amount of energy a device consumes per hour, expressed in kilowatt hours (kWh).

For example a 100W incandescent light bulb switched on for ten hours would consume 100W x 10Hrs will equal 1,000 watt-hours, or 1kWh.

## Is your meter reliable?

Meter readings are used to calculate your bill. Therefore, before installation, all meters must meet stringent accuracy requirements.

Once installed, meters are periodically checked by your supplier to ensure they continue to give accurate readings. Meters are very rarely inaccurate.



## Read your meter

To read a single rate meter, simply write down the numbers shown from left to right. Be sure to write down any zeros, including any at the start of the reading. Ignore any red figures.

To find out how many units you have used since your last reading, subtract the previous reading from the new one.

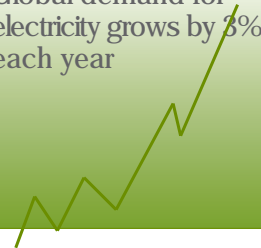
## Keep an electricity log

We recommend that you keep a log of your electricity use. This helps you gain a full understanding of your consumption pattern over time.

We have attached a template at the end of this guide to help you log your energy consumption at home.

### ENERGY FACT

Global demand for electricity grows by 3% each year



### READ YOUR METER



### ELECTRICITY LOG

Four 7-Day Weeks) kWh reading from					Multiplier
Start					
Week 1	8	9	4	5	-(20x10)
Week 2	8	9	3	3	-(38x10)
Week 3	9	0	0	3	-(20x10)
Week 4	9	0	2	1	-(18x10)
Total Energy for 1st period					
Electricity Use Index - Total Electricity - 960 - 34 kWh					
28 days					28

# wireless electricity monitors

Knowing how much electricity you are using and having the information in front of you can make a real difference. Instant feedback lets you adjust your behaviour to suit. It is worth looking at how many watts an appliance uses, but more important how you might adjust your behaviour to save money using that device.

You can use the electricity usage monitor to quickly estimate how much electricity any device is using. For example, when you switch the kettle on, within a few seconds you will see the instant power consumption displayed jump up (typical kettle would consume 2kW). This increase will reflect the consumption of the kettle. Typically, a kettle might be turned on four times a day for a two-minute boil. That's only eight minutes a day, which means a total daily consumption of 0.27kWh ( $2\text{kW} \times 8\text{min} \times 1\text{hour} / 60\text{min} = 0.27\text{kWh}$ ).

A PC that's used for home entertainment and internet browsing might be turned on for many hours at 120W. PC can be typically switched on for 40 hours a week or more, which works out at 4.8KWh per week. Unfortunately, computing and home-entertainment equipment is not tagged with the same easy-to-understand energy labels. For example, many widescreen plasma TVs consume more power than a fridge-freezer.

## how to use efergy

Efergy, your Wireless Electricity Monitor, will allow you to see where your electricity is being used. See how much you are spending and relate this to consumption. If you regularly use 300W of electricity thought out the day where is the usage coming from.

### Analyse your energy consumption

- Use the electricity usage monitor to identify new areas where energy consumption has increased since the last reading and investigate different readings by switching appliances on and off. It will also show how successful your energy saving strategy has been over time.
- Use the history mode to look for inconsistencies from day to day or week to week.
- Read your electric meters at least quarterly, and log the readings. Send these to your supplier.

#### SAVE MONEY

Knowing how much electricity appliances use will help you make the biggest savings



#### WALK AROUND

Identify areas where energy consumption has increased since the last reading



#### ENERGY FACT

We spend 10% of our electricity bills on lighting

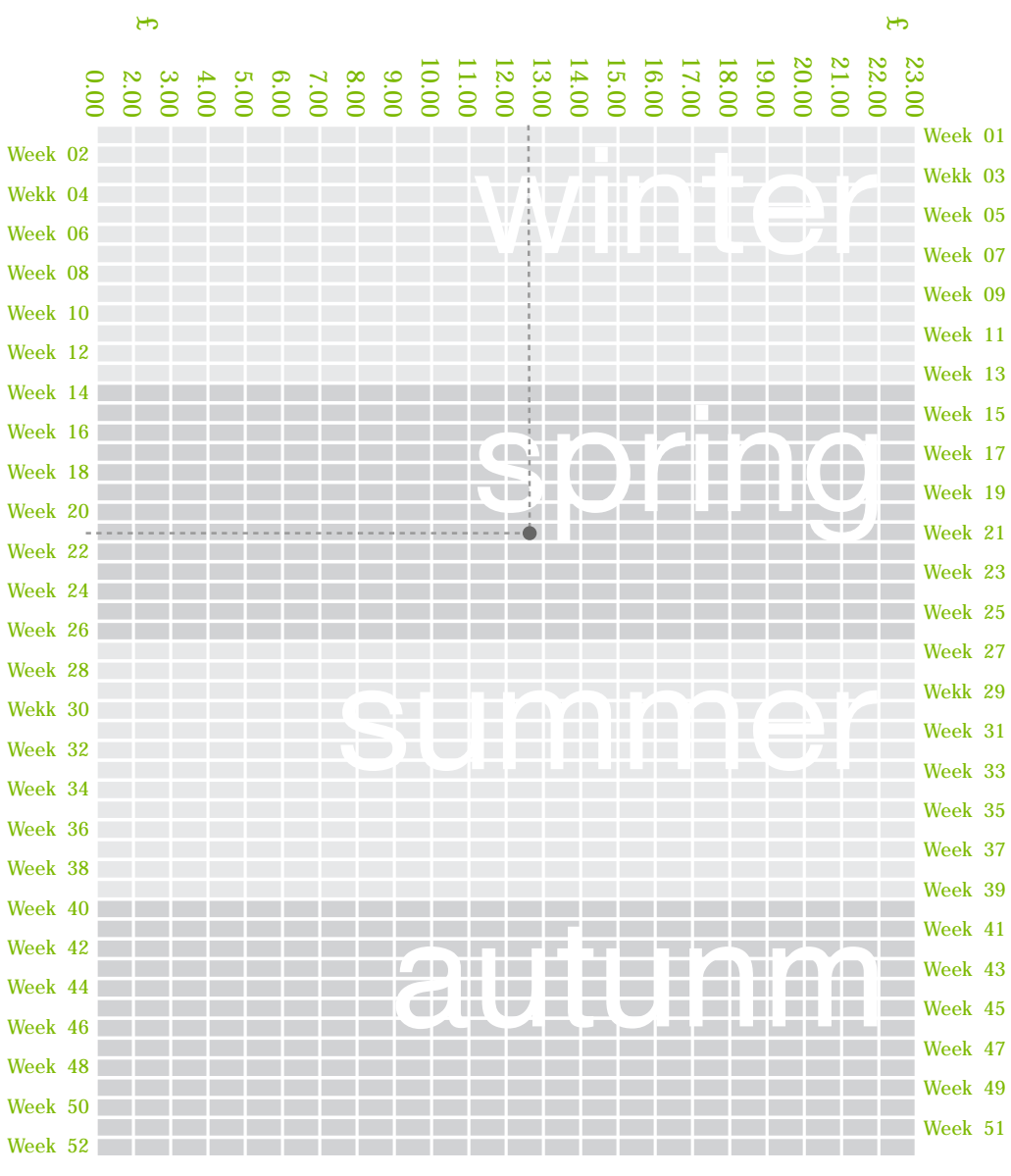


electricity data logger

Week 01		Week 14		Week 27		Week 40	
Week 02		Week 15		Week 28		Week 41	
Week 03		Week 16		Week 29		Week 42	
Week 04		Week 17		Week 30		Week 43	
Week 05		Week 18		Week 31		Week 44	
Week 06		Week 19		Week 32		Week 45	
Week 07		Week 20		Week 33		Week 46	
Week 08		Week 21		Week 34		Week 47	
Week 09		Week 22		Week 35		Week 48	
Week 10		Week 23		Week 36		Week 49	
Week 11		Week 24		Week 37		Week 50	
Week 12		Week 25		Week 38		Week 51	
Week 13		Week 26		Week 39		Week 52	

Electricity Reading (R*)		kWh	
1st Quarter		2nd Quarter	
Q1R= kWh		Q2R= kWh	
Q1= kWh		Q2= kWh	
		3rd Quarter	
		Q3R= kWh	
		Q3= kWh	
		4th Quarter	
		Q4R= kWh	
		Q4= kWh	

R = electricity meter reading  
Q = Consumption at First Quarter  
Q1 = Q1R-R / Q2=Q2R-Q1R / Q3=Q3R-Q2R / Q4=Q4R-Q3R



# making the most of a portable monitor

When you leave your home or office, it's a good idea to check the display. It will give you an idea of how much electricity you'll be using even when you're not in. Perhaps you'll be persuaded to switch off the TV or computer monitor, instead of leaving it on stand-by.

Check the display before you go to bed. How much money will you spend while you're asleep? And what can you save by switching off an appliance?

Monitor how much money it costs you just to boil the kettle, or cook a meal. Test out whether you can save money and power by switching off appliances, rather than leaving them on stand-by. You might be surprised how much energy is wasted when some appliances are not turned off altogether.

Remember that large savings can be made if you cut down how often you use high wattage appliances and the length of time you use them (i.e. an electric shower). These items include heaters, air conditioners and electric hot water systems. Where possible, try to use energy efficient light bulbs and trade in your spare fridge if you have one. When replacing old appliances or buying new appliances, always purchase those with the highest energy efficiency ratings.

# change your habits

Look at your energy consumption and think about how this fits in with the pattern of your home or office.

Investigate any suspicious areas. For example, has the energy use continued at a high rate during periods of low production? Or is energy still being used when you go out or go to bed? Investigate potential waste areas and make changes.

One of the easiest ways to improve energy use is to compare the energy profile on different days. Identify whether energy consumption is higher on certain days, or at particular times from day to day. For example, why is Wednesday's profile so high? Perhaps there is a straight forward explanation, such as a having friends around, or drying the washing. Or perhaps there are inefficiencies that should be investigated.

HOME



OFFICE



EDUCATION





# the walk around

A basic physical walk around of your home could open your eyes to all kinds of energy saving opportunities.

Try and lower the readings on the electricity usage monitor down to as low a reading as you can, and then watch the numbers increase as you switch devices back on. This will help you identify which devices use the most electricity.

You might find that the set of down-lights in the kitchen uses far more electricity than you realised. This might be the incentive needed to switching them off. A digibox may only use 50W of electricity, but if this is left on over 24 hours, this adds up to 1,200W over 24 hours - 10% of your total daily use.

## got a question?

Here are some simple questions you might ask:

- Are lights switched off if there's sufficient daylight in the rooms?
- Are lights switched off when you leave the room?
- Are you still using traditional, incandescent light bulbs?
- Are your floor or table lamps in the corner of a room? Lamps in a corner are more effective because the glow reflects off the walls.
- Are computers left on overnight?
- Are computer monitors switched off when not in use, such as during lunch breaks or overnight?

### ENERGY FACT

Washing clothes at 60°C uses almost twice as much power as at 40°C wash



### EFERGY USER



### ENERGY FACT

Using the electricity usage monitor will help you identify energy savings of at least 5%

# money saving

## 1. DON'T LEAVE APPLIANCES ON STAND-BY

TVs: On average, a traditional cathode ray tube (CRT) television set uses 100W of power when in use and a few Watts on stand-by. Newer LCD and plasma screens are higher users of energy, with the largest models consuming up to 400W when in use and 10W on stand-by.

DVD players: Consumers can safely switch off most DVD players/recorders, hard disk recorders or video recorders. They should not need to retune the devices when they are switched back on or have to contend with the dreaded flashing clock as the machines usually retain their settings. However, manufacturers recommend that some satellite TV receivers be left on stand-by when not in use so they can receive updates.

Peripherals such as printers and scanners should also be turned off when not in use. Leaving unnecessary items on stand-by is said to cost each household an average of £50 a year.

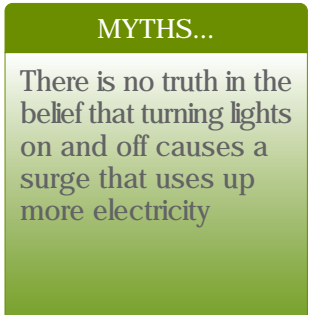
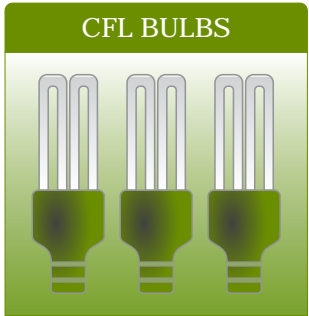
## 2. SWITCH OFF APPLIANCES WHEN NOT IN USE

Computers: It may not be practical to turn a computer on and off if it is to be used throughout the day. Nevertheless, it's recommended that the computer monitor be turned off when not in use.

	Annual cost if on 40Hrs./week	Annual cost if on every day
PC, printer, scanner, router, speaker (equivalent to 250W)	£120.45	£240.90

Lights: A set of six down-lights might only use 300W when on, but switching them off when not in use can have large difference over a year.

	1Hr./day	3Hrs./day	5Hrs./day
Monthly	1.08	£3.24	5.40
Annually	12.96	£38.88	64.80



### 3. REPLACE OLDER STYLE BULBS WITH LOW ENERGY BULBS

More than 90% of the energy that standard incandescent light bulbs use is lost as heat. The next time a 60W incandescent bulb burns out, consider using a 15W CFL (Compact Fluorescent Lamp). It provides the same amount of light, yet uses about 75% less energy.

		Monthly costs	Annual costs
Six incandescent bulbs of 60W	Equivalent to 360W	£4.80	£57.80
Six CFL bulbs of 15W	Equivalent to 90W	£1.20	£14.50
Savings	270W	£3.60	£43.30

\*Bulbs switched on for four hours/day. Price: £0.11/kWh

## energy saving chart

Cut your power use by:		Hrs./Day 1	Hrs./Day 2	Hrs./Day 4	Hrs./Day 5
£0.01/Hr.=90W	Monthly	£ 0.30	£ 0.60	£ 1.20	£ 1.50
	Annually	£ 3.60	£ 7.20	£ 14.40	£ 18.00
£0.02/Hr.=180W	Monthly	£ 0.60	£ 1.20	£ 2.40	£ 3.00
	Annually	£ 7.20	£ 14.40	£ 28.80	£ 36.00
£0.04/Hr.=360W	Monthly	£ 1.20	£ 2.40	£ 4.80	£ 6.00
	Annually	£ 14.40	£ 28.80	£ 57.60	£ 72.00
£0.05/Hr.=450W	Monthly	£ 1.50	£ 3.00	£ 6.00	£ 7.50
	Annually	£ 18.00	£ 36.00	£ 72.00	£ 90.00
£0.10/Hr.=900W	Monthly	£ 3.00	£ 6.00	£ 12.00	£ 15.00
	Annually	£ 36.00	£ 72.00	£ 144.00	£ 180.00
£0.15/Hr.=1.4kW	Monthly	£ 4.50	£ 9.00	£ 18.00	£ 22.50
	Annually	£ 54.00	£ 108.00	£ 260.00	£ 270.00
£0.20/Hr.=1.8kW	Monthly	£ 6.00	£ 12.00	£ 24.00	£ 30.00
	Annually	£ 72.00	£ 144.00	£ 288.00	£ 360.00
£0.25/Hr.=2.3kW	Monthly	£ 7.50	£ 15.00	£ 30.00	£ 37.50
	Annually	£ 90.00	£ 180.00	£ 360.00	£ 450.00

# electricity data logger

In the middle of this guide you will find the data logging chart. Down both sides of the chart you will find week numbers. Week 1, for example, represents the first week in January. Week 30 (2008) would represent the week starting July 21.

Use the Wireless Electricity Monitor to scroll through how much electricity you have been using each week by looking at the history information mode.

Go to the weekly history mode. Push the Mode Button to display weekly costs. Mark on the table how much money you have spent with the corresponding week number. The week number displayed in the top right hand corner. Example: week 21 has been faintly marked on the table as an example.

You should find your electricity usage is higher in winter than other times of the year. If you are on holiday, what happens to your electricity use? Does your electricity use go down as you look at how you use electricity?



See example



If you have purchased a Wireless Electricity Monitor with a USB port, download our eLink software from [www.efergy.com](http://www.efergy.com) onto your PC and enter into a new dimension of energy management.



COLLECT DATA

SETTINGS

DISPLAY DATA

Collect, set your tariff settings and display your consumption.

You will be able to:

- Look at your consumption curve
- Find out which tariffs suit best for you
- Discover how to shift consumption to lower rate periods