

This glossary explains in detail those terms that are used throughout the Home Energy Project.

Appliance

An instrument or device designed for use in completing a particular task. Examples include iron, toaster, microwave, freezer, refrigerator, hair dryer, musical instruments, etc.

Audience

A group selected to listen to and/or watch presentations developed during Communicate. May include parents, other students, families, community organisations, senior citizens, etc. For a list of possibilities see page 61.

Carbon dioxide (CO₂)

A tasteless, colourless, odourless, non-flammable gas that is formed when fossil fuels are burnt. It is the most common of the greenhouse gases.

Conservation

The wise and efficient use of resources (e.g. energy resources such as fossil fuels).

Control week

An experiment conducted during Conserve. It consists of one week in which household energy use is monitored and data.

Electricity consumption

Also known as 'usage' or 'energy'. It is often (but not always) divided between peak energy and off-peak energy and is measured in kWh (see the sample Origin Energy electricity bill, pages 71–72).

Electricity tariff

This is the price you pay for electricity; it is charged in cents per kilowatt-hour. The tariff price consists of a charge for the electricity (which may include peak or off-peak use) and a charge for supply (which will vary on a domestic or commercial property (see the sample Origin Energy electricity bill, pages 71–72).

Energy

The ability of an object to do work (see *Work*). Energy is measured in joules (J) and megajoules (MJ).

Energy efficiency

The use of less energy to achieve the same or greater levels of output. Examples: in winter, wear a heavier jumper while studying or watching TV to enable you to use a lower heater temperature; in summer, keep your house

cool by using blinds and curtains effectively to keep out the heat during the day then open all blinds, curtains and windows at night to allow cool air in.

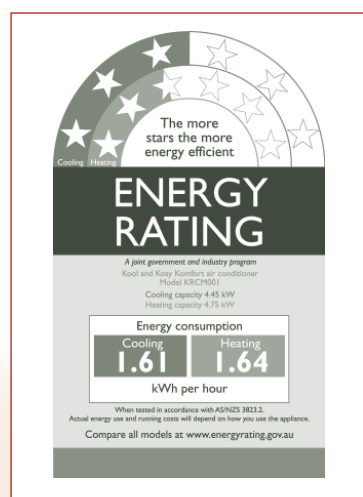
Energy efficient appliances

These appliances cost less to run and have less environmental impact than similar appliances that are less energy efficient. Using energy efficient appliances can save you hundreds of dollars in running costs each year.

Energy ratings

This is a star system applied to electrical appliances based on the amount of energy they consume when in use. Ratings help consumers choose the most energy efficient appliance. The star rating system has a minimum of one star and a maximum of six. To be awarded one star, an appliance must meet the minimum Australian Standards performance level. The more stars, the greater the energy efficiency, the lower the running costs and the less greenhouse emissions there are. The ratings also have an energy consumption box, which tells you how much energy the appliance uses in kilowatt hours. This is an estimate of the annual energy consumption of the appliance (except for airconditioners, for which the rated hourly energy consumption of the unit is shown). When buying electrical appliances, make sure you look for the energy rating labels with the star rating band at the top.

Sample of an Australian Energy label for room airconditioners



Enhanced greenhouse effect

Changes in the earth's climate as a result of increasing levels of greenhouse gases in the atmosphere due to human activity.

Energy team

Members of a household who are able to participate in the Home Energy Project. An energy team can consist of one person or a number of people.

Energy journal

A small A4 notebook dedicated to the Home Energy Project where findings, data, additional information and stories can be documented.

Experimental week

An experiment conducted during Conserve. It involves a household's implementation of an energy savings plan in which energy use is monitored.

Fossil fuels

Some examples of fossil fuels are coal, natural gas, liquefied petroleum gas, etc. They are called fossil fuels because they have been formed over very long periods of time from ancient fossilised organic matter, such as trees and leaves.

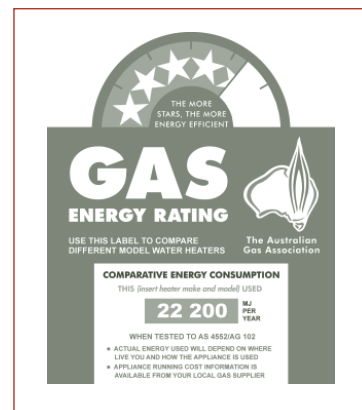
Gas consumption

Also known as 'usage' or 'energy', gas consumption is measured in joules (J) or megajoules (MJ).

Gas energy ratings

The gas energy efficiency rating system uses stars to show the energy efficiency level of a gas appliance. To be awarded one star, the appliance must meet the minimum performance level set by the Australian Gas Association. For gas heaters, each extra star represents a 10 per cent improvement in efficiency; for gas hot water systems each additional star represents a 7 per cent efficiency increase. The more stars, the greater the energy efficiency, the lower the running costs and the less greenhouse emissions. Printed in the centre of a gas energy efficiency rating label is the amount of gas an average family would use in a year to run the appliance.

Sample of a gas appliance energy label



Gas tariff

The price you pay for gas; it is charged as cents per megajoule. The tariff price consists of a charge for the gas and a charge for supply (see the sample Origin Energy gas bill, pages 69–70).

Global warming

This is the major consequence of the enhanced greenhouse effect. It is caused by an increase in the Earth's atmosphere of greenhouse gases. The most common greenhouse gas is carbon dioxide.

Greenhouse gas emissions

Climate change is caused by increasing levels of carbon dioxide (CO₂) and other greenhouse gases in our atmosphere. Greenhouse gases are naturally present in our atmosphere and are necessary to support life; however, increasing levels of these gases are contributing to the problems associated with global warming.

Heating value (HV)

When fuel is burnt in air, heat is generated. The heating value of a fuel is the amount of heat produced when a quantity of the fuel is burnt (see reference on the sample Origin Energy gas bill, pages 69–70):

joule (j): A unit of energy.

1 kilojoule (kJ) = 1000 joules

1 megajoule (MJ) = 1 million joules

1 gigajoule (GJ) = 1 billion joules

Liquefied petroleum gas (LPG)

Consists of propane (C_3H_8) or butane (C_4H_{10}) or a mixture of both. These gases are obtained as by-products from the processing of raw natural gas or from oil refining. The gases can be distributed as a gas or, more frequently, compressed into a liquid under pressure and transported in pressure vessels. LPG is normally sold by the kilogram (kg) – 1 kg of LPG = 26 MJ of energy. The power ratings of LPG appliances are stated in MJ of energy.

Megajoule (MJ)

Unit of energy equivalent to 1 million joules. (J). One MJ is equivalent to 0.278 kWh.

Natural gas

Natural gas is a fossil fuel, meaning that it is derived from organic material that was deposited and buried in the earth millions of years ago. The main component of natural gas is methane. Methane is composed of one carbon and four hydrogen atoms (CH_4). It is a colourless, non-toxic gas that can be used as fuel in the generation of electricity, the production of mechanical energy or in heat. The power rating of gas is stated in MJ/hour.

Non-renewable resources

A resource that is used faster than it can replace itself, for example, coal, oil and other fossil fuels. Non-renewable resources will eventually run out.

Off-peak energy

This is energy used (e.g. lights, television, heating the hot water) during the period when people are using the least amount of energy, that is, when most factories, schools and offices are closed for the night, most often between 11.00 pm and 7.00 am. Off-peak energy use is less expensive because the demand for energy is lower.

Peak energy

This is energy consumed during the time when most offices, schools, factories and homes are using energy, most often between 7.00 am and 11.00 pm. Peak energy use is more expensive than off-peak energy because of the higher energy demand.

Presentation

Communicating findings, data, stories, etc., to an audience.

Presentation ideas

There is a wide variety of ways to present results from either Calculate and/or Conserve, including multimedia, speech, developing a poster, writing a song, etc. For a list of presentation ideas, see pages 65–66.

Presentation plan

Includes details of what will be involved in the presentation, who the audience will be and a series of timelines (see page 64 for a presentation plan guide).

Presentation team

Could be an individual, a pair, a small group or a whole class.

Primary energy

Energy in its raw form, such as coal and crude oil, before it is processed into forms suitable for end use, such as electricity.

Power

The rate of doing work or, more generally, the rate of converting energy from one form to another (see *Energy*). Measured in watts (W).

Power rating

Power ratings for electric appliances are stated in watts/hour. A small radio's typical power rating, for example, is 60 watts per hour. The power ratings for gas appliances are stated in megajoules per hour (MJ/h). Power ratings for gas appliances can also be referred to as MJ ratings.

Renewable resource

Energy resources, for example, wind and sunlight, that are constantly replenished.

Sustainable energy

Sustainable energy is the production or use of energy in a manner that meets current energy needs without compromising the ability of future generations to meet their economic, social and environmental needs.

Watt

This is the rate at which energy use is measured. A watt is defined as the number of joules per second, i.e. $1\text{ W} = 1\text{ J/s}$.

Watt-hours, kilowatt-hours

Electricity consumption is measured in units of watt-hours (Wh) or, more typically, kilowatt-hours (kWh) and megawatt-hours (MWh), where $1\text{ MWh} = 1000\text{ kWh}$. 1 kWh means 1 kW of power being used for 1 hour.

Work

The transfer of force from one body or system to another. Work is performed by a force moving an object. The unit of work is a joule.