

# Understanding climate change



This fact sheet provides some simple explanations to some commonly referred to climate change terms used by the media, government and industry.

## Adaptation

Adaptation addresses the effects or impacts of climate change. It is responding to actual or expected climatic changes or their effects by adjustment in natural or human systems to build resilience and withstand or recover from climate change impacts. Learning to live in a changing climate - is climate change adaptation.

## CO<sub>2</sub>-e

An abbreviation of 'carbon dioxide equivalent' and is the internationally recognised measure of greenhouse emissions

## Carbon credit

Carbon credits are certificates that represent a reduction of greenhouse gases in the atmosphere. Projects that prevent the generation of greenhouse gases or remove greenhouse gases from the atmosphere earn these credits, which can in turn then be "sold" to other

businesses and individuals to "offset" the emissions they generate. One carbon credit is the equivalent to a saving of one tonne of carbon dioxide (CO<sub>2</sub>).

## Carbon dioxide (CO<sub>2</sub>)

The most common greenhouse gas, carbon dioxide is a colourless, odourless, non-poisonous gas that is a normal part of the ambient air. It is a product of fossil fuel production, traps infrared radiation from the sun and contributes to the potential for global warming.

## Carbon footprint

A carbon footprint is the measure of the environmental impact of a person's or organisation's lifestyle or operation. It is measured in units of carbon dioxide.

## Carbon offsets

A mechanism by which the impact of emitting a tonne of CO<sub>2</sub> can be "offsetted" or diminished by either avoiding the release of a tonne elsewhere, or absorbing a tonne of CO<sub>2</sub> from the air that otherwise would have remained in the atmosphere.

## CFL (Compact fluorescent light bulb)

A CFL is an energy-saving, long-life fluorescent light bulb that fits into a standard light bulb socket. The tube is filled with a gas that emits light when an electrical charge is applied.

## Climate change

A change in climate, attributable directly or indirectly to human activity which alters the composition of the global atmosphere and is in addition to natural climate variability observed over comparable time periods.

## CSIRO

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) is Australia's national science agency and one of the largest and most diverse research agencies in the world with more than 50 sites throughout Australia and overseas. CSIRO provides scientific solutions to industry, governments and communities around the world.

## Ecological footprint

A measure of the area of land and water a human population would

hypothetically need to provide all the resources required to support itself and to absorb its wastes.

## El Niño

The term El Niño is used to describe an extensive warming ocean pattern that develops in the central and eastern Pacific region. The development of this warm surface water causes a shift in weather patterns across the Pacific. In Australia (particularly eastern Australia), El Niño events are associated with an increased probability of drier conditions.

## El Niño – Southern Oscillation (ENSO)

ENSO refers to widespread year-to-year oscillations (variations between two or more different states) in atmospheric pressure, ocean temperatures and rainfall associated with El Niño (the warming of the oceans in the equatorial eastern and central Pacific) and its opposite, La Niña. Over much of Australia, La Niña tends to bring above average rain, and El Niño tends to bring drought.

## Emissions

The release of greenhouse gases into the environment, including from industrial processes, vehicles, vegetation decay and living organisms.

## Emissions trading

The process by which emitters are able to trade a permit or licence to produce emissions. Emitters who can achieve reductions at a low cost can sell emissions permits in excess of their requirements to emitters who face higher costs to reduce emissions.

## Enhanced greenhouse effect

Increases in the concentration of greenhouse gases in the atmosphere leading to an increase in the amount of infrared or thermal radiation near the surface. Most scientists are convinced that this will trap more heat and raise the earth's surface temperature.

## Environmentally friendly

Commonly used term – as well as the terms eco-friendly, and nature friendly –

to refer to goods and services considered to inflict minimal harm on the environment.

## Global warming

An increase in global average surface temperature due to natural or anthropogenic climate change.

## Greenhouse gases

Natural and anthropogenic gases in the atmosphere that absorb and emit infrared or heat radiation, causing the greenhouse effect. The main greenhouse gases are water vapour, carbon dioxide, nitrous oxide and methane.

## Green Power

Green Power involves customers voluntarily paying a premium above general electricity tariffs to purchase electricity generated from renewable energy.

## Incandescent light bulb

A source of artificial light that works by incandescence. An electrical current passes through a thin filament, heating it and causing it to glow. The enclosing glass bulb prevents oxygen in the air from reaching the hot filament, which otherwise would be destroyed rapidly by oxidation.

## Intergovernmental Panel on Climate Change (IPCC)

An international panel of scientists and researchers that provides advice on climate change to the international community. The role of the IPCC is to assess the scientific, technical and socio-economic information relevant for the understanding of the risks of human-induced climate change and provide policy relevant advice on the state of technical knowledge on climate change. The assessments inform international negotiations on climate change issues.

## KW/h

The watt-hour (symbol Wh) is a unit of energy (a CFL bulb, for example, might require 11 watts to operate). It is commonly used in the form of the kilowatt-hour (kWh), which is 1,000 watt-hours.

## Megatonne (Mt)

One million tonnes. Greenhouse gas emissions are often measured in megatonnes of CO<sub>2</sub>-e.

## Mitigation

Mitigation addresses the cause of climate change. It is the response of reducing greenhouse gas emissions to help lessen the rate and overall magnitude of climate change.

## Photovoltaic

A solar power technology that uses solar cells or solar photovoltaic arrays to convert energy from the sun into electricity. Solar cells produce direct current electricity, often converted to alternating current using an inverter. Photovoltaic systems are different to solar hot water systems, which absorb the sun's rays directly into the water-carrying tubes contained in the panels.

## Renewable energy

Energy forms that never run out or that can be replaced, unlike fossil fuels. They include solar, wind, tidal, geo-thermal and ocean thermal power, and fuels derived from plants (such as ethanol from sugar).

## Star rating

Is an identification system to help you find the most efficient appliance (brand or model) for your home. Energy ratings range from one star to six stars, with six stars being the most energy efficient. The star rating of an appliance is determined from the energy consumption and size of the product.

## Watt (W)

A unit of power, equal to one joule per second. For example - A human climbing a flight of stairs is doing work at the rate of about 200 watts; a typical household incandescent light bulb uses 40 to 100 watts, while an equivalent CFL bulb might use just 11 to 18 watts.

**For information about actions you can take to address climate change, go to [www.climatesmart.qld.gov.au](http://www.climatesmart.qld.gov.au)**

**For more information about climate change, go to [www.climatechange.qld.gov.au](http://www.climatechange.qld.gov.au)**