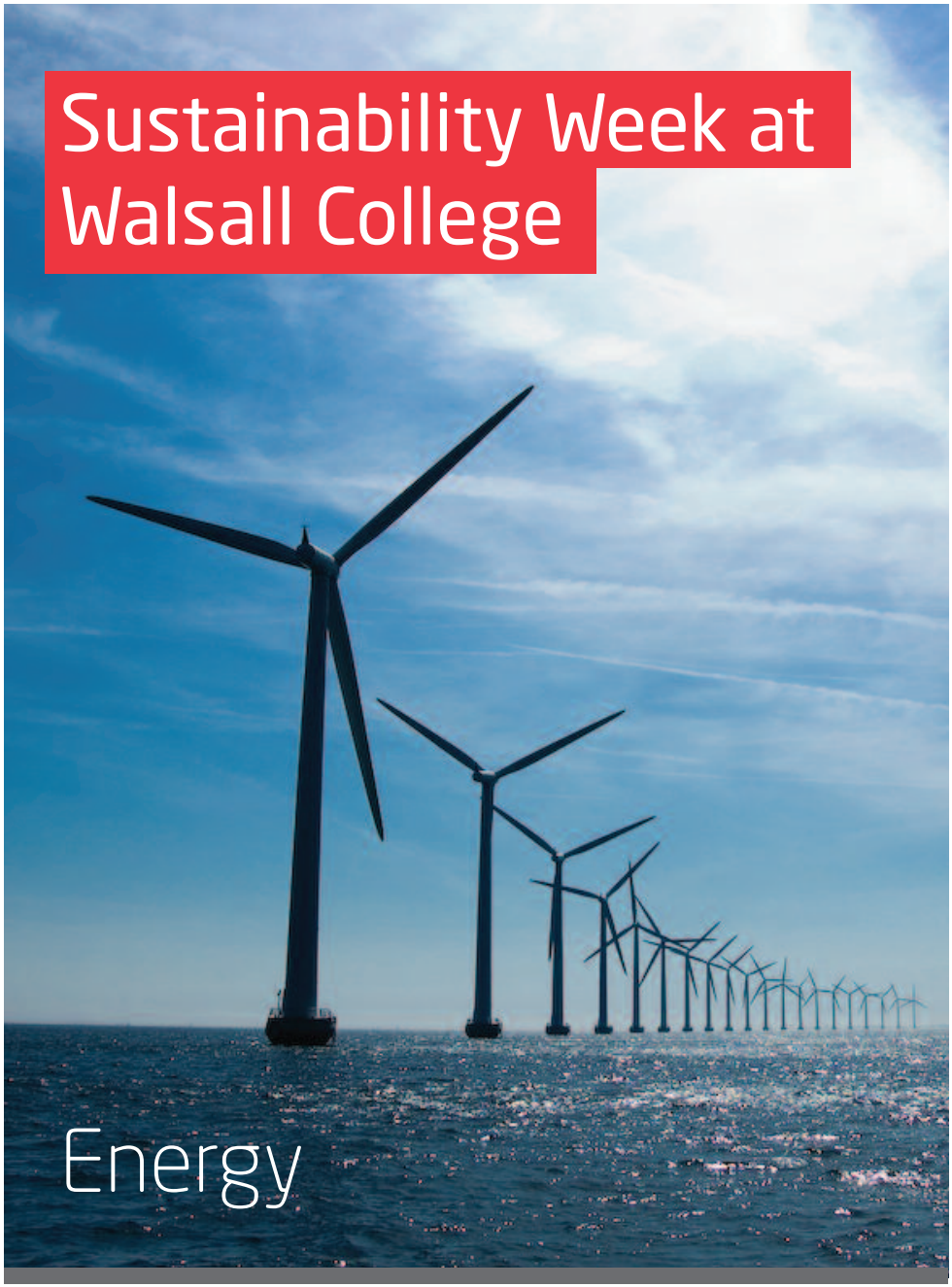
Sustainability Week at Walsall College



Energy

Sustainability Week

Walsall College

Energy production and energy use are certain to have a big influence on life in the 21st century. We are currently in a time of change, away from the era of readily available, abundant and cheap electricity and gas, into a new era where energy efficiency becomes a part of normal life. There are two main reasons for this; climate change and peak oil.

Using fossil fuels is the biggest cause of man-made climate change. Reliable evidence shows clearly that if we carry on using fossil fuels at the rate we do now then we will soon experience ever more severe impacts from climate change and the disruption and cost will outweigh the benefits of using the fossil fuel.

The second key reason that we need to reduce energy use is the fuels we use will run out one day. In particular, oil supplies are beginning to dry up. The point where we want more fuel than the amount that is actually available is known as peak oil. In recent years, we've seen oil prices soar, while new sources of oil are becoming harder and harder to find.

A shortage of oil would affect life in the UK very severely. We rely on oil for transportation of people and goods, food production, home heating, plastics manufacture, medical equipment, and many other important uses. Shell CEO Jeroen van der Veer made an official statement in 2008 saying that he believes that "after 2015 readily available supplies of gas and oil will no longer keep up with demand."

So if the fossil fuels we are used to are running out and we can't use them much more anyway without risking catastrophic climate change, where will our energy come from?

Renewable energy technologies offer a way of producing energy that doesn't create climate change, or rely on dwindling supplies of oil. Wind turbines, solar panels, wood-fired biomass heaters, hydro-electric systems and tidal power will all play an important part in providing energy for the UK in the future.

However, producing energy with renewable technologies costs more than using fossil fuels, and it is very unlikely that we will ever be able to produce enough energy from renewables to allow people to have the kind of lifestyle that we take for granted at the moment.

Luckily, our energy use can be reduced considerably, with a little work. At home, we can all take care with the amount of electricity and heating we use. Buildings can be designed so that they need minimal energy to keep warm and light. In the work place, products will be designed so that they last longer, use less energy and fewer resources to make, and require less energy to use or break down at the end of their life. Successfully making the transition from fossil fuels to renewable energy will mean that everybody has to be prepared to make changes and do what they can.

Did you know?

Domestic energy use in the UK increased by 20% between 1990 and 2001.

In 2011 half of the world's population still use wood as a source of fuel for cooking.

Iceland has the highest level of electricity use per person in the world, and it is all produced renewably using geothermal energy.

The amount of sunlight falling on the Earth's surface in a hour contains enough energy to meet the world's electricity needs for a year.

Every year UK homes lose about one billion pounds worth of heat through badly insulated walls and roofs; enough to heat three million homes for a year.

If everyone in the UK installed three energy-saving light bulbs, the energy saved would power the UK's street lighting for a year.

One large wind turbine can produce enough electricity for 300 households.

DVD players and televisions left on standby use about £150 million worth of electricity every year.

Heating our homes has a much bigger impact on climate change than our electricity use – typically around 80% of your energy use will be for heating.

The UK is the windiest country in Europe, so much so that we could meet our electricity needs three times over using wind energy.

What can you do?

- Turn your thermostat down by one degree – this can reduce your fuel use for heating by 10% and save money on your bill.
- Thick curtains work well to reduce heat loss, especially if they are lined or made of a heavy fabric, fitted close to the window without large air gaps, and closed in all rooms at dusk.
- Open fireplaces also allow a lot of heat to escape from the house, and create draughts – close them off if they are not in regular use with a chimney balloon or a fitted board over the front.
- Always use lids on pots when cooking, as this will reduce the cooking time and prevent energy being wasted.
- Use a low temperature setting (30 degrees) on your washing machine, and whenever possible wash a full load and not a half load. Dry clothes outside whenever it is possible to do so.
- Switch off lights in any parts of the home you are not using at the time, and replace wasteful incandescent bulbs with use energy efficient bulbs
- When boiling a kettle, only put in as much water as you require, and store any surplus hot water or hot drinks in a flask – boiling water takes a lot of energy!

Energy Quiz

1) If all the wind around the coast of the UK was used for generating power, how much of the UK's energy needs would be met?

a) Half of our energy needs
b) All of our energy needs
c) Three times our energy needs

2) How many homes can be powered by the energy from one large wind turbine?

a) 200
b) 300
c) 400

3) Which country has the highest electricity use per person?

a) Iceland
b) Dubai
c) The United States

4) In one hour the Earth's surface receives as much solar energy as the world's population uses in what?

a) one week
b) one month
c) one year

5) Half of the global population use one source of energy for cooking. What is it?

a) Coal
b) Wood
c) Solar energy

6) How much money do UK households waste each year leaving TV sets and DVD players on standby?

a) £50 million
b) £150 million
c) £200 million

Competition

Join in our competition to win £40 worth of vouchers. All you have to do is e-mail the four sustainability resource packs available on GOAL and like the Walsall College Sustainability Week Facebook Page to a minimum of three people and cc sustainabilityweek@walsallcollege.ac.uk that you know that are not studying at Walsall College and you will automatically be entered.