

## Solar power — the future

Scientists around the world are doing their best to ensure that they will work differently too. Cars which use more sustainable energy are gradually replacing traditional petrol or diesel-powered cars. These are electric cars, which use electric energy stored in rechargeable batteries, or hybrids, which use a combination of petrol or diesel with an electric motor.

However, there's an alternative which is even more appealing from an environmental point of view. Solar energy — using the heat of the sun — is already used to heat buildings and provide electricity. Researchers are now trying to apply this technology to vehicles.

A solar vehicle is an electric vehicle which takes all, or most, of its power from solar energy. The car has photovoltaic (PV) cells in solar panels, which are made of silicon. These convert the sun's energy into electrical energy. For instance, Ford are designing a car with a solar panel system on the roof, which will soon be able to draw the same amount of power as a four-hour charge from a battery.

Other options include replacing a car's sunroof with a panel which has organic solar cells within it. This



is a clever idea and may mean that existing cars can convert to solar energy.

Organic solar cells don't work quite as well as silicon cells, but they have the advantage of being more flexible. They are also transparent, so you can see through them.

Some scientists are also doing research into solar paint. It's possible that cars could be painted with material which converts solar energy into electrical energy.

The Abu Dhabi Solar Challenge, part of Abu Dhabi Sustainability Week, aims to promote research in this area of technology. This is a race of 1200 kilometres over four days. Teams from universities around the world take part, and they have to design, build and drive solar-powered cars. The first challenge was held in 2015 and the team from the UAE, whose name was Yas, came second.

### 1 Complete the sentences.

rechargeable   solar   hybrid   organic   paint   traditional   sunroof   electric   silicon

- \_\_\_\_\_ cars are powered by petrol or diesel.
- A \_\_\_\_\_ car uses both petrol or diesel and electrical energy.
- \_\_\_\_\_ cars get all their energy from batteries.
- The batteries in electric or hybrid cars are \_\_\_\_\_.
- The latest research is trying to use \_\_\_\_\_ energy to power vehicles.
- The most effective photovoltaic cells are made of \_\_\_\_\_.
- \_\_\_\_\_ cells are flexible and transparent.
- It may be possible to use solar \_\_\_\_\_ to convert solar to electrical energy.

