

Ethanol anyone?

Today's podcast is going to test your knowledge of ethanol. What is it? How is it made? And what are the advantages and disadvantages of using it? I asked myself these questions recently, when I drove past a gas station that had a sign saying 'No ethanol in our gas'. I asked myself why it would be good to *not* have ethanol in petrol? I remember hearing about large amounts of the stuff being produced in this country, and how some people are for it, and others are against it. So, what exactly is ethanol, and what are the issues surrounding it(1)? Ethanol is a fuel that, for a long time has been produced from corn. In the U.S., the government subsidized (2) corn growers for many years specifically for the production of ethanol. But, why would they do this? First of all, a desire to be self sufficient was at the heart of this project. If you can produce your own energy, then there is no longer any need to rely(3) on other countries. Secondly, some believe that the cost would be less than petrol. Thirdly, ethanol reduces greenhouse gases(4) by 18%-29%. Ethanol is easily mixed with petrol, so all cars can use gas (petrol) that is 10% ethanol. There are some cars that can use 85% ethanol with 15% gas. Continuing research has raised questions(5) about ethanol. If we are using millions of acres of agricultural land to produce corn that nobody eats, surely this will raise food prices globally. Also, farming corn is costly, and uses a lot of gas and gas products when you think of the heavy machinery, the transportation, and the petrol-based chemicals used on the plants. How much cleaner is this bio-fuel than traditional gas? And, should the government be spending tax payers' money on subsidies for a process that isn't overwhelmingly (6) beneficial? Well, as I continued to research ethanol, I found that globally, research has improved its production, and removed the two major problems: using food for fuel, and only reducing greenhouse gas emissions by a small percentage. Apparently, a new ethanol, called cellulosic ethanol is now produced from nonfood crops, such as bark, corn stalks and leaves, and switchgrass. These are agricultural and industrial leftovers, and switchgrass is a rapidly growing weed that is used to prevent erosion. So, instead of expensively growing corn, we can use by-products. Just think of the savings. The carbon footprint(7) is tiny compared to that of growing, transporting, and processing corn. And, talking about our carbon footprint, cellulosic ethanol reduces greenhouse emissions by 85%. Now, that is substantial. Don't you think that collaborative(8) research is always our best route to good ideas? Globally, this is already believed, because research into improving ethanol and making its production efficient and highly beneficial is continuing. Facilities for production are all over the globe, the biggest one being in Italy. People want a home-based, clean alternative to fossil fuels; it will improve global health and national economies. So, on our list of cleaner energy sources, we can add cellulosic ethanol.

1. 'The issues surrounding ..' means the important questions or problems that are linked to something. The phrase gives a good visual of a central idea or thing being surrounded.

a. There are lots of issues surrounding the government's political agenda.

b. There are a lot of questions surrounding his proposal.

2. 'To subsidize' is when money is given to a project to protect and encourage it.

a. The corn growers of the U.S have been subsidized for many years.

b. Tax payers' money is often used to subsidize projects.

3. 'To rely on' is the same as to depend on.

a. I rely on him to tell me the truth.

b. We rely on email to keep in touch with family and friends.

4. 'Greenhouse gases'

a. Greenhouse gases are the gases produced by burning fossil fuels, such as coal or petrol.

- b. Greenhouse gases can be reduced by using clean energy sources.
- 5. 'To raise a question' is slightly different from 'to ask a question'. It is less specific; the question might not have been vocalized yet. It might just be in someone's mind.
 - a. His actions raised a few questions in my mind: is he fit for the job? Does he need more training?
 - b. I'm sure questions will be raised when the employees hear about him leaving the company.
- 6. 'Overwhelmingly' here is used as an adjective, but of course, it comes from the verb to 'to overwhelm'.
 - a. The votes show that she is overwhelmingly the most popular singer.
 - b. I was overwhelmed by your act of kindness.
- 7. 'Carbon footprint' is the amount of greenhouse gas emissions we cause on a personal level.
 - a. This year, I'm going to do all that I can to reduce my carbon footprint.
 - b. There are some simple ways to reduce our carbon footprints, like recycling, and turning off lights that don't need to be on.
- 8. 'Collaborative' comes from the verb to collaborate, meaning to work together and share ideas.
 - a. The project was a collaborative effort; many experts were involved.
 - b. If we collaborate, we will probably find the best solutions to our problems.

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