

ADVANCED QUIZ

True or False Questions

1. Transit-Oriented Development (TOD) promotes separating the development of homes and businesses in order to decrease the amount of miles driven in the neighborhood.

- True False

2. Considering the currently existing alternative technologies, ethanol offers the greatest greenhouse gas reduction potential.

- True False

3. Emissions of greenhouse gases on a per-person basis are lower in cities and “high-density” areas. High density areas are neighborhoods where people live close together (think: small lots, condos, or apartments).

- True False

4. Even though the US did not sign the Kyoto Protocol, the federal government has taken action to reduce greenhouse gases.

- True False

5. Hydrogen has the potential to be a zero emission fuel.

- True False

6. All Alternative fuels reduce greenhouse gas emissions.

- True False

True or False Answers

1. False:

Transit-Oriented Development encourages the development of mixed-zone neighborhoods. This means that businesses, homes, and stores are all located in the same neighborhood. Why? TOD is focused on providing neighborhoods with many different transportation alternatives. Besides focusing their growth around transit stops, they also promote walking or biking.

2. False:

Right now, hybrid-electric technology offers the greatest potential for greenhouse gas reduction. Hybrids employ a combination of an internal combustion engine and an electric battery. The result? Greater fuel efficiency and reduced greenhouse gas emissions. This new technology can be used in personal vehicles and buses. Hybrid buses currently operate in Los Angeles, New York, and Cedar Rapids, IA. The savings provided by ethanol are relatively small, because ethanol is very energy intensive to produce. The lifecycle emissions of ethanol in a transit bus are 11 lbs of CO₂ per mile, as compared to 13.3 lbs per mile for a standard diesel bus.

3. True:

Using public transportation can significantly reduce your greenhouse gas emissions. While cities have higher *total* greenhouse gas emissions, ***emissions are smaller on a per household basis***. Why? People in high density areas drive less because they have more transportation alternatives. They can take a bus, walk, or take a train. Since driving is more expensive and time-consuming, many people use public transportation as an alternative. For people who still drive, they drive less because the distance between destinations is shorter in length than the suburbs and rural areas.

4. False:

After the US refused to sign the Kyoto Protocol, the first international effort to reduce greenhouse gas emissions in 1997, it has taken little action on the issue of global warming. Many countries, especially European nations, have taken steps to reduce their greenhouse gas emissions. But what has been happening in the United States? States and local communities have taken leadership roles in the absence of federal legislation. Twenty-six states and many local communities have taken a lead role in limiting greenhouse gas emissions. Many states offer financial incentives to increase the use of alternative fuels and renewable energy sources. Local communities have also taken steps to curb greenhouse gas emissions. Seattle, one of the best examples, has a goal of

meeting the emission outline by the Kyoto Protocol. For more information visit: <http://www.iclei.org/>

5. True:

This is why many politicians and researchers are excited about the future use of hydrogen fuel. Currently, the life-cycle of hydrogen fuel still releases carbon dioxide because fossil fuel energy is required to separate the hydrogen from the other elements chemically bonded to it (this process is known as electrolysis). However, scientists are looking into ways to use wind, solar, or biomass energy to detach hydrogen. When scientists come up with a way to perform electrolysis by using a renewable energy source instead of fossil fuels, then hydrogen fuel would create zero emissions; the only byproduct from hydrogen would be water!

6. False:

Not all of the alternative fuels have been designed to reduce greenhouse gas emissions. Some, like compressed natural gas (CNG), currently the most popular alternative fuel for buses, reduce the emissions of air pollutants like nitrogen oxides and particulate matter. Using CNG in public transportation vehicles is popular for communities who are trying to clean their air. However, CNG may actually have more impact on global warming than diesel fuel. The initial studies on this are somewhat conflicting. Scientists have not yet fully determined the effect CNG has on greenhouse gas emissions.