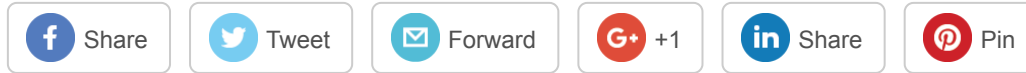


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[Ethanol biofuel](#) | [Evaluating the sustainability of biofuels](#) | [How clean can cleaner jet fuel be?](#)

CLEAN STEM Flash

A Timely Climate and Energy E-Learning Series to Use and Share

September 28th, 2021

Topic: Biofuel

One way to help reduce carbon emissions is by switching to alternative fuel sources. Biofuel is a fuel source that creates much debate given its complexity. Depending on how it is made, it may cause more harm than good or may help reduce emissions. In this newsletter, you will find two resources on the topic of biofuels: 1) a short video on what biofuels are and how they can contribute to or curb climate change, and 2) an activity where students use external resources and critical thinking skills to evaluate the sustainability of biofuels. We have also included an article that discusses the recent suggestion to switch commercial jet fuel to biofuel. The video would be a good lead-in to the news article and the activity could tie concepts together for an assessment.

CLEAN Resource Feature

Video: [Ethanol Biofuel](#)

This PBS video discusses the pros and cons of ethanol biofuel. It delves into the complicated world of biofuels and climate change and examines a potential way to make an alternative biofuel that is better for the environment.

Audience: Middle School, High School



This video discusses research efforts to use cellulosic biomass and microorganisms to accomplish the conversion from plant matter to fuel in a single step. An essay on background information about biofuels and discussion questions are provided.

CLEAN Resource Feature

Activity: [Fueling the future: Evaluating the sustainability of biofuels](#)

In this activity, students consider the impact and sustainability of using different classes of biofuels on the economy, the environment, and society. Students also learn about bioelectricity and how converting biomass to electricity may be the more efficient way to fuel cars in the 21st century.

Audience: High School, Lower College

Take a look at some more CLEAN resources focused on [Biofuels](#).



This resource would pair well with the PBS Video above and the news article below. The video and news article will introduce students to the topic and this activity will allow students to develop a critical thinking based framework to evaluate the sustainability of biofuels. This resource has links that are outdated, however they can easily be supplemented and an updated version of the resource will be provided to CLEAN by the developers soon.

[In the News: Biden Outlines a Plan for Cleaner Jet Fuel. But How Clean Would It Be?](#)

Burning airline jet fuel is a primary contributor to greenhouse gases in the atmosphere. One potential ways to mitigate climate change is by introducing alternative fuel sources, such as biofuel. This article discusses the recent plan to have "sustainable fuel" by 2030 and the complex debate about what "sustainable fuel" means. Biofuel can actually make climate change worse, depending on how and where it is created. Take a look at the article to learn more about this intricate problem!

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