

LCA Unit Objectives: By the end of this unit, students will be able to...

- Assess the sustainability of fossil fuels by providing five pieces of evidence as to whether or not fossil fuels are sustainable.
- Define and summarize the properties of shale oil.
- Predict the most likely future for the supply of US Shale Oil based on federal data.
- Given fossil fuels are limited in supply, cause significant environmental damage, are a leading cause of climate change, and are damaging to human health, provide justification for why they are used so prominently in the US.
- Summarize five characteristics that an alternative to a fossil fuel would have to have in order to replace most fossil fuel use.
- List and describe the three components of sustainability.
- Define life cycle assessment and summarize the meaning of inputs and outputs in LCA.
- Conduct a LCA for everyday activities in which you partake and alternatives for those choices.
- Compare each of the following fuels, provide a summary of their properties and characteristics, and summarize their benefits and drawbacks: a. Petroleum b. Shale Oil c. Biofuel d. Electricity e. Hydrogen
- Using your understanding of each of the fuels above, choose the fuel that you think would best provide a dependable and sustainable source of fuel in 2050.
- Using your understanding of each of the fuels above, choose the fuel that you think would be least capable of providing a dependable and sustainable source of fuel in 2050.