

## TEACHER OVERVIEW

### Efficiency of Texas energy consumption in 2014

In order to be more efficient with our energy resources, we need to be cost effective in our practices. This means wasting as little energy as possible so that we can be both environmentally and economically friendly. The idea of weighing cost effectiveness is often referred to as cost benefit analysis. Cost benefit analysis weighs many factors in order to make the best decision regarding energy use. While there are many factors to consider, some of these factors are:

- Reliability
- Ease of extraction
- Resources needed

### Use of Energy

Using external energy sources is a human activity. Unlike other organisms, we transform our environment by capturing external energy sources and use those energy sources for food preparation; to light our homes, schools, and other buildings; to warm and cool our enclosed spaces; to power technology; to transport us as well as goods from place to place; and generally to live the lives to which we are accustomed.

Knowledge of various energy sources, efficiency of the sources, capture of energy, abundance, and availability can and will alter our reliance on single-source energy supplies. The results of this knowledge will become more critical as we discover all energy sources have pros and cons associated with them.

### Renewable and Non-renewable Energy

It is important that we understand that all environmental issues are complex and interrelated. Three pivotal components of all environmental studies—environmental, social, and economic— must be addressed. Cessation of all non-renewable energy sources would be devastating to us socially as well as economically because renewable energy sources generally lack the efficiency of the mineral-based fuels such as oil, natural gas, and coal we primarily rely on today.

For these and other reasons, there is debate as to the renewability and non-renewability of energy sources. A definition of renewable energy might include terms such as, “replaced or replenished by natural sources” or “not depleted by moderate use.” However, when we consider the manufacture of components used in renewable energy sources such as solar and wind, we find they are not completely renewable and often depend on large scale mining of rare earth minerals in remote places around the world. Additionally, the environmental footprint of some renewable energy sources may exceed the footprint of some energy sources considered to be non-renewable.

Non-renewable energy may be defined as “an energy source that exists in a fixed amount in our environment,” such as fossil fuels. With recent discoveries and technological advancements, some non-renewable energy sources may be more plentiful than previously thought and be able to be harnessed while protecting the environment.