**ASSIGNMENT 5 CONTEXT**

**Energy Alternatives**

**Fracking**, or hydraulic fracturing, is a process used to extract natural gas from once unreachable shale rock layers deep in the earth. To release the natural gas, highly pressurized fracking fluids (water mixed with various chemicals and sand) are injected, via steel pipe, into the ground to create cracks or fractures. This releases gas which flows to the surface to be collected in wells. Environmental concerns associated with fracking include water use, toxic chemicals, health concerns, surface and ground water contamination, soil contamination, air quality, and waste disposal.

One of the most important aspects of any energy policy is energy **conservation**. As consumer demand for oil drops, prices decline; and the length of time oil can be relied on is extended. To help reduce oil use, government regulations (NHTSA, 2014) have required greater fuel efficiency in cars through the creation of the Corporate Average Fuel Economy (CAFE) standards. Congress has also required the phasing out of incandescent light bulbs in favor of the more energy efficient compact fluorescent bulbs. Like many new technologies, the upside of the compact fluorescent's energy saving capacity is countered by the downside that compact fluorescents require the toxic chemical, mercury, for their production.

There are many alternatives to using petroleum and coal for energy, but each comes with a unique set of problems. Most **new technologies, like solar and wind power**, are very costly to start up. Nuclear energy has its own unique drawbacks.

Using **nuclear energy** is attractive to many because the technology is already in place, and it can generate large amounts of electricity from one plant. But the risks associated with nuclear energy are high. For example, there is no current solution as to how to deal with nuclear waste. No matter how carefully built and maintained a nuclear plant may be, there is always the risk of an accident. Further, nuclear plants can also be a target for terrorist activity, and the nuclear waste can be used to power nuclear weapons.

It is certain that we will see the emergence of new energy technology, but it seems unlikely at this point there will be one simple answer. Wind, solar, and geothermal energy are useful in certain geographic areas, but it will take many different solutions to fulfill the energy demands of the worldwide population.

References

U.S. Energy Information Administration (EIA). (2014). Energy in brief. Retrieved from http://www.eia.gov/energy\_in\_brief/article/major\_energy\_sources\_and\_users.cfm

National Highway Traffic Safety Administration (NHTSA). (2014). CAFE – Fuel economy. Retrieved from http://www.nhtsa.gov/fuel-economy