The U.S. energy industry produces our heat, electricity and transportation fuels and is largely dominated by fossil fuel production and consumption. This presents some difficulty in managing risks related to price volatility and uncertainty that these sources are known to encounter (especially for transportation fuels like petroleum). This document identifies current trends in fossil fuels and biofuels in the U.S. and the energy produced in Tennessee.

**U.S. Fossil fuels**

In general, overall U.S. fossil fuel production has increased since 2005 and consumption has decreased since around 2007. The U.S., however, still relies on other countries for over 3 billion barrels of crude oil each year (Fig. 1). In 2014, the top 5 countries that the U.S. imported oil from included Canada, Saudi Arabia, Mexico, Venezuela and Russia (Fig. 2). These imports can influence U.S. foreign policy because they provide other countries with some leverage over our economic security. Therefore, expanding energy production into other sources can enhance U.S. national security.

In 2014, the energy consumed in the U.S. largely came from fossil fuels (79%) with smaller portions from nuclear (9.5%) and renewable (11%) energy sources (Fig. 3).

Currently, biomass energy (mostly from wood and corn ethanol) makes up about 4.7% of total energy production. Having multiple investments in a retirement plan is a
good example of a way to mitigate risk from financial crisis and can be a goal for the U.S. energy sector (Fig. 3). In a well-structured retirement plan, a decrease in market prices will have less effect because it is balanced out by more stable investments. Having more sources of energy will provide greater stability in energy prices because if the cost of one source increases, another can be used in its place.

**Tennessee Energy**

Tennessee has few fossil fuel reserves and produces a lot of its electricity from nuclear and renewable (primarily hydropower) fuel (Fig. 4).

Tennessee currently has 52 power plants producing electricity and the fuel sources range from hydropower to fossil fuels to nuclear, wind, solar, and biomass energy (Fig. 5).

Of the 5 biomass plants in Tennessee, two are associated with landfills where they presumably use the methane produced in these areas to produce electricity. The remaining three are located with paper product manufacturing plants which burn their waste product to produce electricity.

In addition to electricity production, there are two ethanol production plants in Tennessee that produce about 110-120 million gallons of corn ethanol each year. There are also some small commercial biodiesel production plants that produce 2-5 million gallons per year, primarily from waste cooking oils.

According to the 2012 Census of Agriculture, there are a number of different renewable energy systems employed on Tennessee farms (Fig. 6).