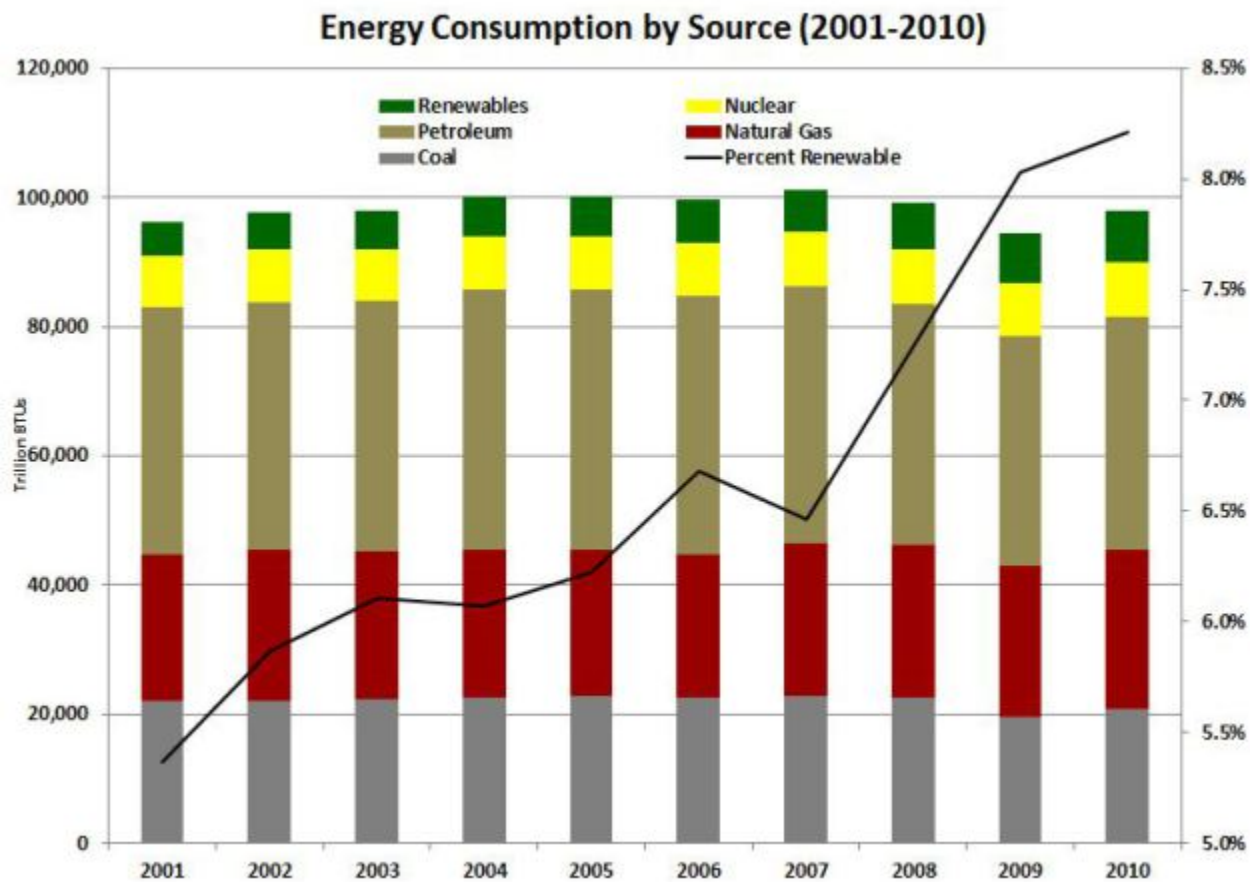
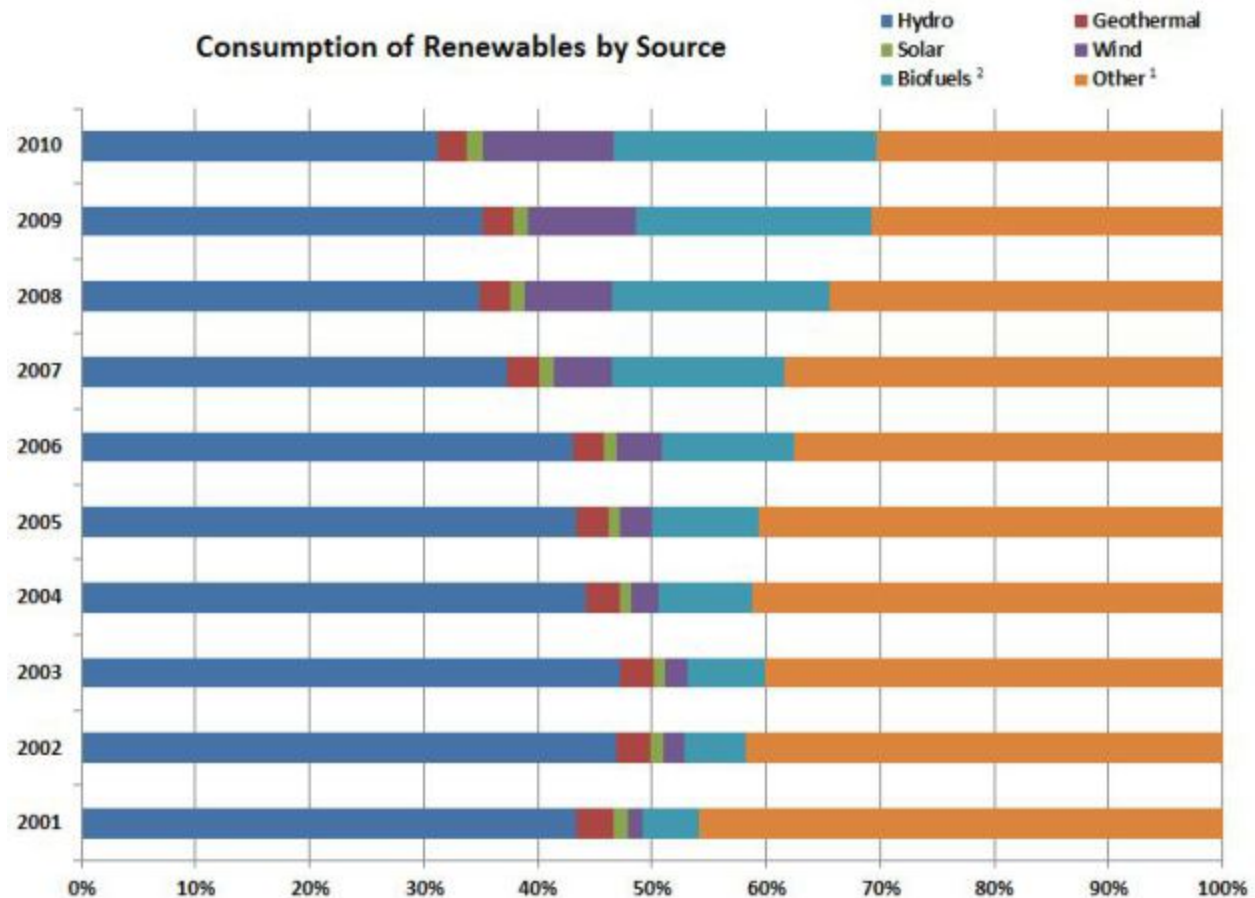


# OVERVIEW OF ENERGY CONSUMPTION AND RISE OF RENEWABLE ENERGY

I would like to start introducing some alternative energy topics to this blog, but before I do that, I think it's important to take a macro-view of where we are at as a country in the energy industry. As pundits and politicians continue to debate the future of the energy industry, keep in mind that from 2001 to 2010, not much changed. Use of renewables increased approximately 3%, which when viewed through even the most optimistic of lenses, can't be considered much of a victory.



I'm not going to try to use this blog as a soapbox to advocate my positions on the future of the energy industry; however with the population of the world swelling I think it's common sense that we, first as citizens of this planet and second as investors, need to be forward thinking. With that in mind, the graph below will show you the growth in renewable energy sources over the past decade.



<sup>1</sup>Includes fuels created from wood and waste (landfill gas, sludge, agricultural byproducts and biomass, municipal waste, tire-derived fuels, etc)

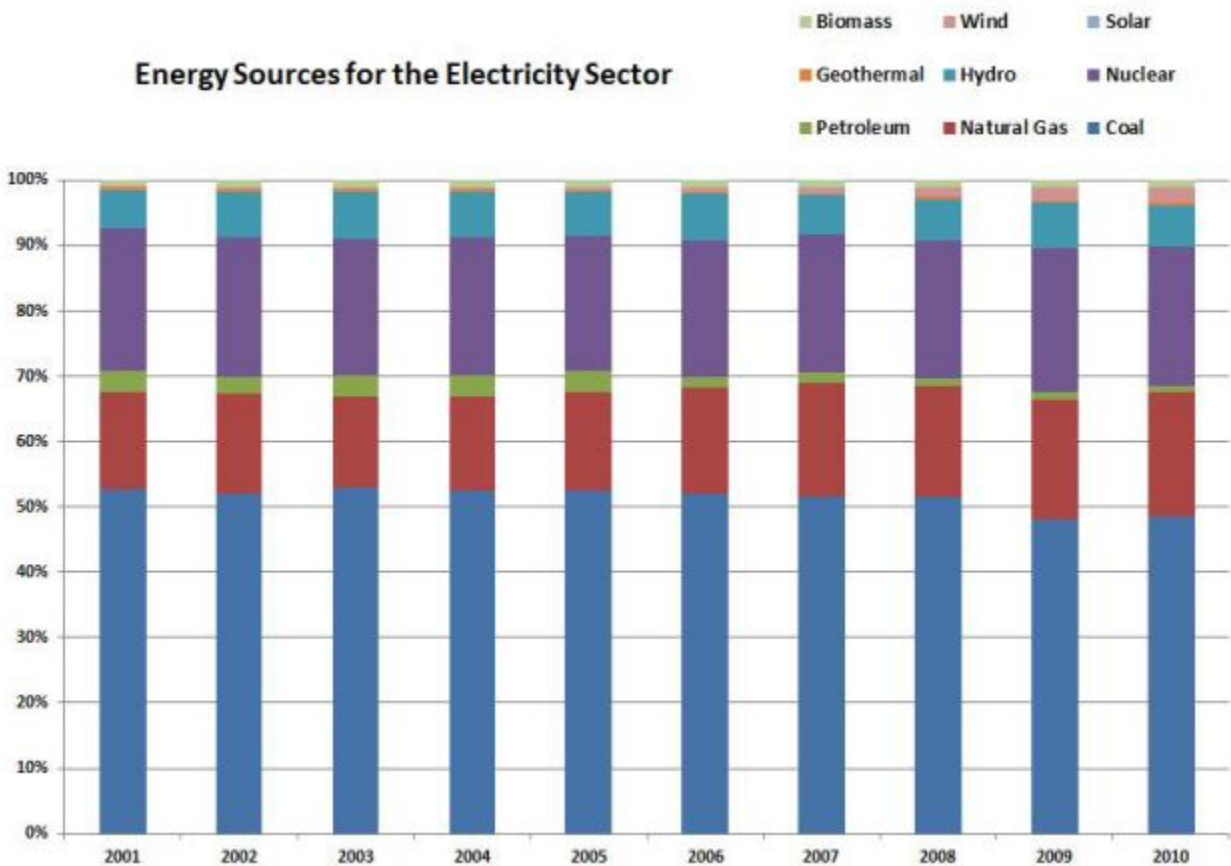
<sup>2</sup>Consumption of ethanol and biodiesel

From the above graph we see that most of the growth in the renewable energy sector has come from biofuels and wind energy. Biofuels are an energy sector that includes ethanol and biodiesel. Ethanol is created by fermenting a carbohydrate, such as sugar, while biodiesel is created by combining an alcohol with animal fats or vegetable oil. Both of these fuel sources are currently used as additives to gasoline for the purpose of reducing harmful emissions, not as standalone fuels themselves.

Adam Monroe, president of Novozymes North America (CopenhagenSX: NZYM B), a company which creates cellulosic ethanol sees “rapid adoption” of [biofuels in the transportation sector](#).

What sectors are potential sources of growth for renewables? Petroleum fuels 97% of the transportation sector, with natural gas making up the balance. Fossil fuels (oil, natural gas, coal)

dominate the residential, commercial and industrial sectors. Fuel sources for the electricity sector is summarized in this graph:



Regarding fossil fuels in the electricity sector: use of petroleum has declined significantly, while natural gas has increased. Nuclear has been constant, while coal has declined slightly.

Regarding renewable fuels in the electricity sector: use of wind and solar has increased 12x and 1x, respectively; however they still make-up a relatively small portion of overall energy consumption in the electricity sector. This sector is where renewables should see most of their growth over the next decade.

Source : <http://theenergyharbinger.com/2012/06/04/energy-consumption-overview-renewable-energy-on-the-rise/>