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Kent Gunderson

kent.gunderson@yahoo.com

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Integrating Green Energy

Kent Gunderson

kent.gunderson@yahoo.com

Today I'd like to talk about the importance of integrating green renewable energy sources into our economy. In order to accomplish integrating green energy our government must focus on policies that entice energy companies to pursue renewable energies. For instance, the Federal Wind-Energy Tax Credit Policy should be continued, but instead, according to the American Wind Energy Association, it is slated to end December 31, 2012. This policy provides energy companies 2.2 cents per kilowatt-hour tax credit. Interestingly, the Environmental Minnesota group reported recently that wind turbines in Minnesota alone save the equivalent in greenhouse gas emissions of taking 757,000 cars off the road each year (Duluth News Tribune, November 29, 2012). I am convinced that with serious government support, renewable energy sources can be successfully developed and integrated in modern society.

Fossil fuels, today, are the main fuel of choice in generating electricity. It is currently the cheapest way to produce something that every American uses daily. Cost is a major issue in the development of renewable energy resources. According to the Nuclear Fissionary website (<http://nuclearfissionary.com>), coal is one of the largest and cheapest fossil fuels used in power generation, second only to natural gas in cost efficiency. Coal generated power can be created at four cents per kilowatt-hour, compared to wind power at eight cents and solar energy at twenty-one cents per kilowatt-hour. As you can see, renewable energies are not economically feasible in their current state and most companies cannot afford the high cost of developing these resources. How then can we get energy companies to invest in renewable energies? An article by Jim Gorzelany in Forbes Magazine, talked about regulating automakers to comply with reducing carbon emissions. An example of this is California's Clean Cars Law (www.edf.org/transportation/policy/california-clean-cars-law). Unfortunately, there are some lawsuits pending against California to stop this legislation, so it's unclear if this would work in other states. While California's clean car law may be overturned or stopped due to those pending lawsuits, this sort of legislation won't work because the state is trying to force car companies to change their ways.

Another idea is to offer incentives through subsidies to ensure the more expensive, cleaner forms of energy are able to compete at the prices of fossil fuels. I believe that to entice companies to develop renewable energies, we must make it more profitable. Once these renewable energies are implemented, sales will go up and competition will ensue. Competition is critical to any technology to foster innovation. These advances will bring the cost per kilowatt-hour down, so that these technologies can continue to compete and eventually without government subsidies. However, both state and federal governments will need to share the burden of these tax incentives. This will allow different states to pursue development of their specific renewable energies. Nebraska, for example, won't be able to use offshore wind farms or

tidal generation, but according to the Nebraska Energy Statistics website (www.neo.ne.gov), we have good wind and a wide variety of biofuels at our disposal. Also, it is imperative that the tax incentives and subsidies are large enough to make these energies profitable as a whole. A good start is the current national tax incentives for renewable energies like the Residential Renewable Energy Tax Credit (energy.gov). Once we make renewable energy competitive then the focus can move to integration into our current grid systems.

Renewable energy would most likely be used by electric utilities during peak usage, or when energy demand is highest. An example of this is wind energy. Wind is one alternative energy source that has benefited from such subsidies. When the government installed subsidies making wind power competitive against fossil fuels, the competition spurred innovations that lead to new ways of storing energy created by wind turbines. The stored energy can be stored and sold when the price for electricity is highest, thus making more money. Alan Dostal, Corporate Nuclear Business Manager for NPPD, shared an example of innovations resulting from incentives used to jump-start wind development. For example, using wind energy to pump compressed air into sealed empty oil pockets to be pumped out later and run through a steam turbine. A few other technologies that I have learned about are using electricity from wind turbines to pump water into dams to produce hydroelectric power and using that electricity to create hydrogen through electrolysis. These technologies are just beginning to be implemented and by accomplishing the development and integration of green energy into current grid systems, our nation will reach its goal of being less dependent on fossil fuels, lowering our carbon emissions and making a positive contribution to the environmental. So, the question was how to integrate green energy to the grid; with federal and state policies to make renewable energies economical and by implementing those energies as peaking plants.