Energy 113: Fossil Fuels

Ken Johnson

This will be the last of my 13 ‘Soapbox’ episodes dealing with ‘Energy’ systems, most of which I consider as “exotics”, in that they are interesting oddities that could be used as energy sources, however, fossil and nuclear fuels are safe, cheap, and plentiful, so why bother? I know, the argument primarily is that fossil fuels are not plentiful, are in danger of depletion, and pose a hazard to all life forms because of the release of carbon dioxide. That is totally false, as I have tried to explain through these writings. It is being touted by the liberal environmentalist minority, the majority of whom pay few or no taxes, so it is not their money being wasted on uneconomical projects.

Those readers who missed early episodes, and are interested, most of them may be found at: www.ecnmag.com/tags/Blogs/Ken-Johnson [1]

Primarily, some readers seem never to accept the fact that atmospheric carbon dioxide (CO_2) generated by the combustion of fossil fuels (coal and oil products) has little or nothing to do with the average global temperature . . . and I challenge them to prove otherwise. All that is required to have that proof is to find statements, verifying their claim, from any legitimate reference they may desire, be it the World Almanac, books on meteorology, Environmental Protection Agency (EPA) data, etc. which discusses Global Warming Greenhouse Gases (GWGG);. What they will find is proof that CO_2 is only about 6% of GWGG (water vapor is about 90%) and of that 6%, only 10% is put into the atmosphere by fossil fuel combustion sources, for a grand total of 0.6% of all GWGG that has as its source, CO_2 from fossil fuel combustion. For anyone to claim that something that is 0.6% of an effect on our environment will lead to the destruction of that environment, is beyond moronic . . . it is idiotic. In addition to that, the whole concept and correlation of CO_2 content in the atmosphere as increasing the atmospheric temperature was blown sky high by ‘Climategate’ when it was found that official global temperatures were being manipulated to show increases when they were actually decreasing. (‘Google’: Climategate).

This whole CO_2 fiasco should have been laid to rest many years ago when a petition

was circulated throughout the science community. It essentially said there was no proof CO_2 adversely affects the temperature of the Earth, on the contrary, it is an essential part of the Earth's ecology. To sign the petition, one had to hold an academic degree (Batchelor, Master, or Doctorate). Over 41,000 signatures were obtained from scientists, engineers, astronomers, chemists, meteorologists, hydrologists, etc. The petition was presented to a primarily Democrat Congress, which took no official action on it, choosing instead to stay with the opinion of the 900 member, politically oriented, Intergovernmental Panel on Climate Change (IPCC). Now that a new attitude is developing, perhaps it will be re-presented to our Congress. http://www.petitionproject.org

Perhaps some old fashioned high school chemistry may help to stop the demonizing of fossil fuels, which are mostly "hydrocarbons" i.e. compounds of hydrogen (H) and carbon (C). For example, methane gas (the main part of "natural" gas) is one atom of carbon attached to four atoms of hydrogen, with the chemical nomenclature of CH_4. Gasoline is a mixture of refined fossil fuel hydrocarbons and commonly denoted by eight carbon and eighteen hydrogen atoms (C_8H_{18}). When these fuels are mixed with oxygen (O) from our atmosphere and ignited, they combine with the oxygen (burn) and release energy as heat . . . about 18,000 BTU/lb for the gasoline. Man has found a way to convert some (about 25%) of that heat energy into useful 'mechanical work', using devices known as "internal combustion engines" (ICEs). Since the fuel atoms (C, H, O) cannot be destroyed by a simple chemical reaction, they wind up in new compounds. One C atom hooks up with two O atoms to make one carbon dioxide (CO_2) molecule and two H atoms hook up with one O atom to make one H_2O (water vapor) molecule. Both compounds are released into the atmosphere, as a result of fossil fuel combustion. On the other hand, all forms of vegetation: trees, vegetables, diatoms (algae), grass, etc., love these two and literally eat them up. Vegetation has chemicals called chlorophylls that use the energy in sunlight to recombine the gases back into hydrocarbons and carbohydrates (compounds of C, H, and O) as plant growth, with some O atoms left over. These O atoms cannot exist alone for very long, so two join together to form an oxygen molecule (O_2). This is released into the atmosphere for humans and all other animal life to breathe . . . as well as providing O_2 to burn more fossil fuel. It is said that diatoms (swamp slime and algae) are responsible for about 35% of that oxygen formation. You could call this Phase I of the "renewal" of fossil fuel energy.

Then we come to Phase II. That hydrocarbon and carbohydrate vegetation along with other organic waste is what is buried by tsunamis, floods, hurricanes, landslides, and such . . . to begin the long process to become fossil fuels again. Landfills are an example of shortcuts that can be taken to get usable methane gas without waiting a millennium, since it is produced by a decay process that begins almost immediately. Landfill operators capture the gas and use it locally to provide heat and electricity for buildings.

Our best example of Phase II is one of our richest fossil fuel sources in the U. S. . . . namely the swamps along the lower end of the Mississippi River, its Delta, and the north end of the Gulf of Mexico where it empties into the Gulf. Try to imagine the trillions of tons of organic material (grown from CO_2 and H_2O) washed out by the yearly floods and along with the waste from cities along its banks, and has been

“flushed” from a major portion of the U.S. by that river and its tributaries over the last million years. The U.S. Corps of Engineers estimates about 8 million tons a year. A huge amount of this has already become fossil fuel, as evidenced by the hundreds of producing oil/gas wells in the upper Gulf and the bayous of Louisiana, and more is on the way, as this natural process goes on, millennium after millennium. To that, we must add the trillions of tons of dead sea foliage and animals that die and sink to the bottom of the oceans where the pressure and high temperature, from ocean floor volcanic activity, quickly turn them into methane and petroleum. Almost anywhere they drill in that section of the Globe, they find fossil fuels. Think of all the major rivers of the World and the oil fields near their mouths. In the colder areas of the oceans, the methane solidifies into solid lumps. Oil companies have been trying for years to develop processes to mine those lumps, and process them for sale..

So, to imply that CO2 is a noxious gas we cannot tolerate, must minimize, tax production of, and even sequester underground...is a huge mistake. Sequestering is another money maker for the Global Warming scam artists, like Al Gore (at last count, $200 million has been his take from that scam), at the expense of taxpayers and consumers. Incidentally, for every molecule of CO2 that is sequestered, not only is 1 atom of carbon taken out of circulation, but 2 atoms of oxygen are also stored away and not available for us to breathe or reuse. It sounds like a “the sky is falling” Gore-type scare tactic of my own, but the main point is, all the atoms on and in the Earth are generally of a finite number and over its billions of years, many have been perhaps reused many times. It is suggested, one atom of that O2 molecule you just breathed in, was perhaps breathed in and later exhaled, as part of a CO2 molecule, by Jesus Christ over 2000 years ago . . . and an O or the C may wind up in your sweet corn next year as a part of a carbohydrate molecule.

A quicker “energy renewal” may happen to some of the water (H2O) emissions in the form of ‘steam’ that is the product of the combustion chemical reaction (most people think it is hazardous smoke) coming from the ‘smokestacks’ of fossil fuel power plants like the huge one at the common corners of New Mexico, Colorado, Arizona, and Utah (called “Four Corners”). That cloud of water vapor/steam only has to be blown next door into the Rockies, get cooled down, fall as rain or snow, run down the Colorado River, through the Glen Canyon Dam hydroelectric generators, and part of that burned fossil fuel’s hydrocarbon energy has been renewed. Some portion of the remainder takes a lot longer, of course, but nonetheless, a major portion of it is eventually renewed by natural processes, including some energy from the Sun, just as those other so-called ‘renewables’ of wind, hydro, bio-fuels and the like . . . and in some cases, a quicker renewal.

The preceding is the opinion of the author and not that of ECN.

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