

## How to Immediately and Significantly Reduce CO<sub>2</sub> Emissions

There are two policy actions that I believe would be simpler, more effective, and less costly to lower CO<sub>2</sub> emissions faster and in larger initial quantities than either a complex cap & trade system or CO<sub>2</sub> emission capture and sequestration (CCS). These actions should proceed independently of all other energy policy.

**Policy action number one:** America's 2.2-million-mile natural gas pipeline grid is connected to 450,000 megawatts of natural gas fired electric generating capacity. That compares with 336,000 megawatts of coal-fired capacity. The reason coal generates 50 percent of America's power and natural gas only 22 percent is because coal plants run at 74 percent capacity and natural gas combined cycle at 42 percent capacity, and natural gas simple cycle at only 11 percent, even though most natural gas generating facilities can be run reliably at 90 percent capacity. Because natural gas power emits 50 percent less CO<sub>2</sub> we should immediately implement policy that requires combined cycle natural gas power be run at the highest capacity possible and be dispatched first.

This one action could replace about a third of all the coal-fired electricity in the United States without building a new plant and, at the same time, lower annual U.S. CO<sub>2</sub> emissions by an astonishing several hundred million tons per year and put us well on our way to the Intergovernmental Panel on Climate Change's (IPCC) goal for the United States. Unfortunately, we cannot completely eliminate all coal power plants because in many localities on a particular electric grid there are not a sufficient number of natural gas power plants, and on many electric grids, all the coal and natural gas power capacity will be required in order to meet peak power demand. Another problem is that utilities own or unduly control the electric grid and dispatch the coal plants first because they produce more regulated profits for the utility shareholders and also because some coal generated electricity is about 2¢ per kilowatt cheaper. Of course, it is not really cheaper because there are large health and pollution costs related to coal's use that are not charged to the consumer of electricity but are paid instead by society in general.

If Congress passed legislation that mandated clean, low-carbon natural gas power first where possible, I estimate that enough natural gas generation capacity would be located in a sufficient number of critical locations so that about one-third of the coal plants could be closed down and over 300 million tons of annual CO<sub>2</sub>

emissions would be eliminated. To generate one-third of the U.S. coal power with existing natural gas plants would require about 4 Tcf of new natural gas consumption annually. America's natural gas producers could meet that new demand rapidly, beginning with our current excess supplies. LNG, Canadian imports and, eventually, Alaskan supplies, could also fill-in when and if needed. To begin with, policy makers might want to start with our dirtiest, most inefficient coal plants that use about one third of the annual coal consumption and produce the highest levels of CO<sub>2</sub> per megawatt.

I urge my readers to write their congressional representatives and tell them that the United States must use its clean natural gas to generate electricity before we use coal-generated electricity. To do so may cost the electric consumer a little more than from coal plants but a lot less than if laws or regulations mandate the cleaning up of coal power, so called "clean coal," or require new equipment to lower CO<sub>2</sub> emissions and toxic wastes. Of course, if either a carbon tax or cap and trade are passed, carbon light natural gas will be less costly than coal.

**Policy action number two:** In order to meet our need for additional electric power we should mandate that no new power plant can be built that emits more CO<sub>2</sub> or general pollution than that of a natural gas plant. After all, during the last two years some 90 coal plants have been taken off the drawing board and several new natural gas plants announced (with some 17,000 megawatts of natural gas powered generation capacity added in 2006 and 2007), the most recent being a 300 megawatt plant by Idaho Power. So, let's simply accelerate that trend by mandating that all new power plants be as clean and green as natural gas.

Although detailed cost studies need to be performed, I am confident that these two actions would cost the economy and consumers much less than "clean coal" technology and sequestration, and would cut CO<sub>2</sub> emissions immensely faster than any other policy action, including cap & trade.

I know this will cause an uproar from the coal industry but we must keep in mind that the entire coal mining industry employs only about 80,000 miners and that the entire industry is economically less than 10 percent the size of Wal-Mart. So, my point is that the coal industry should no longer have such massively disproportionate power over American politics, our environment and energy use.

The long-term adverse macroeconomic and environmental effects of the coal industry's political control over the politics of energy have been immense. A large part of the U.S. population has suffered multiple coal-related personal health issues and their ever increasing costs and the American taxpayers have paid an enormous burden for coal's tax subsidies, at least \$10 billion over the last decade. These subsidies are not necessary to go forward meeting all our new electric power demand not met by wind and solar with carbon light natural gas. Indeed, we should help retrain the miners who may lose jobs; however, many miners can easily be trained for new work in the energy industry, as there will be plenty of

new jobs. A small portion of the stimulus funds already allocated to the coal industry could be used to retrain miners for safer and healthier jobs. The important point is that we should not adversely impact our energy and environmental goals because of the continuing disproportionately powerful political influence of such a relatively tiny sector of the U.S. economy.