

2006 – 02 Climate-Friendly Coal Technologies and Practices

Coal-fired power plants produce over two-thirds of the electricity used in the Upper Midwest, and roughly half of the electricity used in the United States. In fact, coal is the largest source of electricity production worldwide. Given U.S. and global coal reserves and dramatic growth in electricity demand, its use as an energy source is likely to increase rapidly in the future. Coal's use on this scale presents major environmental challenges to be overcome. These challenges include addressing the risks associated with coal mining, and tighter limits on federally defined "criteria pollutants such as fine particles, mercury, and carbon dioxide (CO₂) – the primary global warming gas.

New coal power plants must meet federal air quality regulations called "New Source Performance Standards," which define the amounts of sulfur dioxide, nitrogen oxides, and particulates a new plant may legally release. Rules for limits on mercury emissions are still under development. No limits are currently in place or under development for CO₂. However, this is likely to change as the U.S. responds to increasing pressure from around the world to cooperate in reducing CO₂ emissions.

The utility industry believes that new coal burning boiler with advanced pollution control equipment will be able to meet new "criteria pollutant" limits. However, these new technologies will not control CO₂ emissions, and represent real investment risks for the industry if carbon limits are put in place. Large coal plants emit millions of tons of CO₂ every year. Carbon taxes in the range of \$10 to \$50 per ton are certainly possible within the next decade. This would add billions of dollars per year to cost of power from coal over the 40 plus year lifetime of an average coal plant.

Integrated Coal Gasification, Combined Cycle (IGCC) is the chemical conversion of coal to synthetic gas for combustion in a gas turbine to produce electricity. Integrated Coal Gasification Combined Cycle plants hold the promise of much lower emissions of criteria pollutants, and reductions of CO₂ emissions through improved plant efficiencies. Integrated Coal Gasification Combined Cycle's waste volume is much lower than traditional coal plants, allowing CO₂ molecules to be removed before release to the atmosphere. Integrated Coal Gasification Combined Cycle facilities required roughly half the water use of a conventional coal plant and produce significantly less solid waste (i.e., ash).

As noted above, next generation coal technologies, such as Integrated Coal Gasification Combined Cycle, provide a better ability to capture CO₂. Once captured, CO₂ can be geologically sequestered in oil and gas reservoirs, deep brine formations and unmineable coal seams. The Izaak Walton League believes that new coal use should be considered only after all cost-effective

investments in energy efficiency, renewable energy and other clean energy sources, and only then if substantially less polluting than conventional coal use.

Now therefore be it resolved: the Minnesota Division of the Izaak Walton League of America, in annual convention April 29, 2006, in New Ulm, urges future coal users strive to produce zero levels of harmful emissions and CO₂ as quickly as technologically feasible. This means that coal use must:

- As quickly as possible become carbon emissions neutral;
- Produce low or no emissions of other pollutants;
- Become more efficient in converting coal to useful power;
- Reduce dependence on unstable foreign energy sources;
- Keep energy affordable and reliable for consumers; and,
- Become part of a national energy mix that includes significantly more renewable energy, such as wind and biomass.

To achieve these goals, the League supports aggressive research, development and demonstration of climate-friendly coal technologies such as Integrated Coal Gasification Combined Cycle and the capture of CO₂ for geologic sequestration.

Submitted by the Bush Lake Chapter