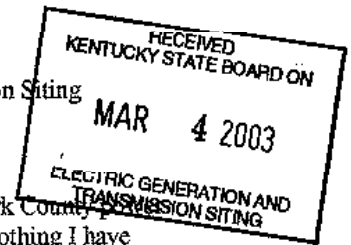


Phil Crewe  
Statement before the Kentucky State Board on Electric Generation and Transmission Siting  
Proposed Global Energy IGCC Plant near Trapp, KY  
March 4, 2003



When I first heard several years ago that Global Energy of Cincinnati planned to fuel a Clark County plant with up to 80% garbage imported from the northeast I was concerned and angered. Nothing I have learned since then has diminished my feeling.

The northeast has an abundance of garbage, a landfill crisis and high tipping fees. It has a looming shortage of electricity. By contrast, Kentucky has largely addressed its own solid waste issues with recent legislation and has some of the lowest electricity rates in the nation. It would seem to make sense that a plant that consumes garbage and produces electricity should be built near the source of its fuel and the best market for its electricity.

So why is this plant being proposed for Kentucky? We can only conclude that the plant's developers think that it will be politically easier to site this experimental and unproven technology in Kentucky.

Unproven it is. The British Gas Lurgi gasification technology has never been run, according to the U.S. Department of Energy Kentucky Pioneer Integrated Gasification Combined Cycle Demonstration Project Final Environmental Impact Statement, on the proposed mixture of coal and "refused-derived-fuel" (a innocuous name for processed garbage). Global Energy hopes to sell the major solid by-product of the gasification process, the "vitreous frit", as construction fill or road aggregate. Yet the Final Environmental Impact Statement admits that "Because frit has not been produced by the gasification of co-fed coal and RDF as proposed by this project, no data is available to determine the potential for the frit to leach and be classified as hazardous waste..." (page 1-9) In other words, they don't know if the frit will leach toxic metals such as Cadmium, Lead or Arsenic into the environment. If it barely passes the T.C.L.P. test ("Toxicity Characteristic Leaching Procedure"), then it can be sold as fill material. If it fails the test, then it must be entombed in a hazardous waste landfill.

The Final Environmental Impact Statement asserts that "The first batch of frit would be subjected to Toxicity Characteristic Leaching Procedure testing to determine if it is a hazardous waste under RCRA and applicable Kentucky laws and regulations." Since the composition of garbage depends on what was discarded in a particular time and place, it seems reasonable that the RDF pellets produced from this garbage cannot be expected to be consistent in composition. Therefore there is no assurance that the frit produced from the RDF will be consistent in its composition or properties. Yet there is no mention of a protocol of regular or continuous testing, no mention of who will be responsible for the testing or whether the public will have access to the results.

The proponents claim it is not garbage but "refuse derived fuel" that they will be bringing by the trainload to Kentucky. Taking out the refrigerators and other large appliances ("white goods"), removing some of the cans and glass, and then shredding and compressing what remains into pellets does not make it something other than garbage. Garbage is a complex, heterogeneous mixture that contains virtually everything used and discarded by modern industrial society, including pesticides, paints, toxic metals (mercury, cadmium, lead), and illegally-disposed hazardous wastes from households and businesses large and small. These pellets contain what garbage contains and they are still garbage no matter what they are called.

2,250 tons per day, the amount of pelletized garbage Global Energy will import into Kentucky from New York and New Jersey, is no small amount. This is approximately 25 large rail cars per day. If we assume that the original garbage was compressed in volume by a factor of five, then we're talking about the equivalent of 125 railroad cars of garbage per day. A recent Herald-Leader editorial stated the garbage would be imported at a rate equivalent to half the production of the entire state of Kentucky.

It is important to consider that the toxic components of garbage that are chemical elements, that is the metals such as mercury, cadmium, arsenic and lead, cannot be broken down further by any chemical

process. If this plant is allowed to go forward, Kentucky is likely to become their permanent custodian. In one chemical form or another they are likely to stay here, possibly resulting in the eventual contamination of our soils and water. For as long as this process continues, we will be on the receiving end of a one way stream.

The Final Environmental Impact Statement, written under the supervision of the U.S. Department of Energy by private consultants, apparently relies heavily on data derived from experience of the gassification of coal, and not on gassification of a mixture of garbage and coal: "The project would be the first demonstration of the coal and RDF pellet co-feed gassification technology..." (page 2-2) Garbage however, is not coal. Garbage contains substances that coal does not. Data from the gassification of coal is not scientifically valid in making assumptions about this process run on garbage. We are talking about a large and expensive experiment.

With this in mind, lets look at the gassification process itself. In summary, a 50-50 mixture of coal and garbage pellets are fed into the top of a large reactor. At the top of the reactor the temperature is 900 degrees F. The mixture descends by gravity at a controlled rate and encounters an increasing temperature gradient in an oxygen-starved (reducing) environment. The mixture breaks down as it descends, giving off volatile organic compounds, "tars, oils, and particulates" and metal vapors. (page 3-17 of the FEIS). These substances become entrained in rising hot raw "syngas", which is being extracted near the top of the reactor. The raw syngas needs to be cooled and cleaned up before it can be used to run the gas turbines to produce electricity. The "syngas", which is mostly carbon monoxide and hydrogen, is produced near the bottom of the reactor, where oxygen (not air) and steam are injected, reacting at a very high temperature with the descending carbon-containing materials. The "slit", a molten substance at this point, is extracted at the bottom of the reactor via a taphole.

Global Energy has gone out of its way to insist that this process does not involve combustion, since combustion of garbage does not have a good public relations appeal. The FEIS even uses "traditional oxidation" to describe the high temperature combustion that takes place in the vicinity of the oxygen injection ports at the bottom of the gassifier. Combustion is the source of the heat energy that drives the gassification process. The remainder of the reactor however, maintains reducing conditions in an oxygen starved environment.

Thus, as the raw syngas rises countercurrent through the descending mixture of garbage and coal, it picks up anything that will vaporize: hydrocarbons, tars, oils, metal vapors (such as mercury, cadmium, and arsenic) Who knows what will vaporize from the garbage mixture. The sponsors of this project apparently don't, because they haven't done it with garbage. A major component of the garbage pellets will be bleached paper, which contains trace amounts of chlorinated dioxins produced in the bleaching process with chlorine. This dangerous substance is thought to be biologically active in concentrations of parts per billion. While it is only present in trace amounts, the enormous volume of bleached paper involved raises concerns not adequately addressed by the project's proponents. What is the environmental fate of the noxious substances that distill off the garbage/coal mixture in the gassifier?

This brings us to the next step of the process, the cooling and cleaning of the raw syngas after it exits the gassifier. The hot gas is quenched with water, condensing and removing the contaminants. They are thus picked up by this process water. The proponents claim that all or most of these contaminants will be separated from the water and re injected at the base of the gassifier to be destroyed by the extremely high temperature (3000 degrees F). But can they really separate these substances from the process water before some of it becomes the "aqueous effluent" (400,000 gallons/day) to be dumped in the Kentucky River upstream from the water intakes of Winchester and Lexington? Table 5.7-1 (page 5-18 of the FEIS), entitled Emission Estimates for the Kentucky Pioneer IGCC Demonstration Project Facility, might give us a hint. It says that almost two tons per year of ROG (reactive organic compounds) will be released in the aqueous effluent that results from cleaning the raw syngas. This is no doubt based on experience with coal gassification, but keep in mind that substances that distill off of garbage in a gassifier may be much more harmful than those from coal. (pesticides, chlorinated dioxins, vinyl chloride to name some possibilities) Will any substances like these enter the Kentucky River?

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This facility is a big experiment, and we the people and environment of Kentucky will be the Guinea Pig. I was astounded to learn in a conversation with a staff member of the Kentucky Division of Water that they won't need to apply for a discharge permit until the facility becomes operational. Even if this facility proves detrimental to Kentucky's environment, it will have \$414 million worth of institutional and financial momentum behind it. Do you think they are going to be denied a discharge permit?

It is clear to many of us here tonight that Kentucky should not be on the receiving end of a stupendous amount of garbage from the northeast and that we should not willingly become the perpetual custodians of the toxic metals contained therein. I hope that the people and officials of Clark County will do what they can to keep it out. I hope that the Siting Board will not allow this plant, with its unproven technology, to locate in Kentucky.

Thank You



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