Herrick, Will
Campton, KY
Page 1 of 108

Kentucky Pioneer Integrated Gasification
Combined Cycle Demonstration Project
Draft Environmental Impact Statement
U.S. Department of Energy
National Energy Technology Laboratory

Written Comment Form

Must be received by January 4, 2002.

SIR,

PLEASE FIND ENCLOSED
MY WRITTEN COMMENTS.

WILL HERRICK
4859 FLAT MARY RD
CAMPTON, KY
41301

Please use other side if more space is needed.

Comment forms may be mailed to:
Mr. Roy Spears
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Morgantown, WV 26507-0880

Comment forms may be faxed to:
Mr. Roy Spears
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Herrick, Will
Campton, KY
Page 2 of 108

Comments on the Kentucky Pioneer IGCC Draft Environmental Impact Statement

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January 22nd, 2002

Page 1

Herrick, Will
Campton, KY
Page 3 of 108

Table of Contents

DEIS Comments pp 1-20

Appendix A: Bibliography of Fritted Slag

Appendix B: Clean Coal Today, Issue No. 39, Spring 2000

Appendix C: Integrated Gasification Fuel Cell Demonstration Test

Appendix D: EKPC request for Spurlock Permit after KPE fails to acquire funding.

Appendix E: APPLICATION OF BGL GASIFICATION OF SOLID HYDROCARBONS FOR IGCC POWER GENERATION. Global Energy Inc.

Appendix F: KRS 224.010(20), 15% limit on RDF before being classed as A Waste-to-Energy facility

Appendix G: Section 1 of the Air Quality Permit issued June 7, 2001

Appendix H: Kentucky Resource Council: Letters to DOE & KY DWM wrt Trapp Facility

Appendix I: Increasing Electricity Availability From Coal-Fired Generation in the Near-Term. National Coal Council

Herrick, Will
Campton, KY
Page 4 of 108

Mr. Roy Spears
U.S. Department of Energy
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3610 Collins Ferry Road
Morgantown, WV 26507-0880

Sir,

I have the following comments on the Kentucky Pioneer (KP) Integrated Gasification Combined Cycle (IGCC) Draft Environmental Impact Statement (DEIS).

There are manifest virtues to the promotion of our national understanding of advanced power generation technologies. However, significant flaws and omissions in the DEIS negates both the DOE assessment that this plant meets DOE's stated needs and the conclusion that it should be funded. The DEIS lacks critical information about the plant design that makes it impossible to assess the environmental impact of the Trapp facility. 1/14

The DEIS needs repair and a new round of public review before any Federal dollars are released. 2/21

The Federal issues of concern in this DEIS are:
- Weak argument: 'Purpose and Need for Agency Action.' 3/14
- Compromised demonstration of 'Clean Coal' 4/14
- Flawed premises: 'No Action Alternatives' 5/18
- Failure to consider other sources of power. 6/14
- Likely failure to get local permits. 7/21
- Conflict with state law. 8/21
- Intent to disregard the outcome of the research. 9/21
- Unreliable partners, private funding delays, inadequate planning & past failures. 10/22
- Disregard for social justice and environmental issues. 11/13
- Inadequate design data. 12/16

Weak Argument: 'Purpose and Need for Agency Action.'

The need for agency action is not well supported by the DEIS. As well, goals described as the basis for the proposed actions may have already been met without investment of Federal dollars.

The need for a successful demonstration of a largely coal fired IGCC facility using Federal funds, as stated in the DEIS section 2.2, is already satisfied by available information. Global Energy is building an MSW fired IGCC plant identical to Trapp, but for the fuel cell, in Lima Ohio without Federal monies.[1] The National Coal Council has said 'The technology has been successfully demonstrated at commercial scale in the U.S. and worldwide.'[2] Existing facilities include Wabash River, 3/14 (cont.)

1 RA Bailey, Sr VP Global Energy, Panel Discussion, Oct 9, 2001 www.gasification.org/98GTC/GTC01030.pdf
2 Appendix I:

Page 3

Comment No. 1 **Issue Code: 14**

DOE believes that the Kentucky Pioneer IGCC Demonstration Project EIS adequately analyzes the full scope of environmental impacts from the proposed project. Chapter 3 of the EIS has been revised to provide more detail on the gasification process, including the production of the vitreous frit. Detailed plant design is not available or neccessary at this point because the project is still in the planning stage. It will not be available until after the issuance of the ROD.

Comment No. 2 **Issue Code: 21**

DOE believes that the EIS fully addresses all impacts of the Proposed Action and no action alternatives, as required by NEPA. The public comment period was extended through January 25, 2002. DOE will consider all public comments before issuing the ROD. The ROD will be issued no sooner than 30 days after the Final EIS is distributed and a notice of its availability is issued.

Comment No. 3 **Issue Code: 14**

The stated goal of the CCT Program is to advance DOE's mission to foster a secure and reliable energy system that is environmentally and economically sustainable. As such, the CCT Program was established to demonstrate the commercial feasibility of CCTs to respond to a growing demand for a new generation of advanced coal-based technologies characterized by enhanced operational, economic, and environmental performance. Since coal is an abundant, secure and economical fuel, and is used to produce over 51 percent of the electricity in this country, it must continue in its role as a key component in the United States and world energy markets.

The Kentucky Pioneer IGCC Demonstration Project utilizes the BGL oxygen-blown, fixed-bed slagging gasifier. The gasifier fuel will be a high-sulfur bituminous coal and blended with RDF, which uses only MSW as its basic component and does not use any hazardous or industrial waste. The syngas generated in the gasifier will

Herrick, Will
Campton, KY
Page 5 of 108

Tampa Electric's Polk Plant, the Netherland's Buggenum, plants in Germany, Scotland, Singapore & South Africa and Spain's Puertollano plant. Global Energy already has several commercial IGCC projects under development based on using BGL Gasification Technology to gasify solid hydrocarbons for power production (Appendix E, Introduction, paragraph 2). The National Coal Council reported in May 2001: 'Based on the success of the BGL process at the Schwarze Pumpe GmbH plant in Germany, Global Energy is building two plants in the U.S. The 400-MW Kentucky Pioneer Project and the 540-MW Lima Energy Project will both use BGL gasification of coal and municipal solid waste to produce electric power.'[3]

The fuel cell demonstration at Trapp is more about MSW than Clean Coal. When presenting their Trapp proposal at a national coal conference, the company providing the fuel cell technology to Kentucky Pioneer Energy(KPE) said: 'Fuel cell systems operating on coal have been studied extensively in past years.'[4](p.3) Later in the paper they go on to say of the Trapp facility: 'The project will feature Advanced Fuel Technology briquettes made of Kentucky coal and Municipal Solid Waste (MSW) as fuel in the gasification process...'(p.5). These facts indicate that the purpose of the demonstration is not the already well researched coal powered fuel cell but, in fact, the MSW powered fuel cell where coal is being removed from the feedstock to favor MSW. This fails to satisfy the expressed goal of DEIS section 2.2 for: '...technologies that will help alleviate pollution problems from coal utilization.' Alleviating coal pollution problems by not using coal is not what DOE & CCT are about.

The national interest in MSW as a non-competitive alternative to other fuels for energy production is at cross-purposes to the CCT effort at Trapp. The Office of Integrated Analysis and Forecasting of the Energy Information Administration reported in April of 1997: 'MSW-produced power is viewed [primarily] as a byproduct of a community`s waste disposal activities and only secondarily as a competitive alternative to other fuels for energy production.'[5] The waste at Trapp is not a byproduct of that community's waste disposal activities, and the MSW is competing with local coal.

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www.nationalcoalcouncil.org/Documents/May2001report-revised.pdf P. 32
3 Appendix I: www.nationalcoalcouncil.org/Documents/May2001report-revised.pdf P. 28
4 Appendix C. Steinfeld Ghezel-Ayagh, Sanderson, & Abens: IGFC Demonstration Test. FuelCell Energy Inc, 25th International Technical Conference on Coal Utilization and Fuel Systems, March 6th, Clearwater FL.
5 DOE/EIA-M069(97) Model Documentation Renewable Fuels Model of the National Energy Modeling System, URL: tonto.eia.doe.gov/FTPROOT/modeldoc/m06997.pdf

Page 4

3/14 (cont.)

Comment No. 3 (cont.) **Issue Code: 14**

be used to fire a gas turbine. This project serves to further CCT Program objectives in the following ways:

1. RDF is an example of a fuel that has the potential to enhance the economics of coal utilization and lower the emissions output of a totally coal-based system. Coal-based systems that have sufficient flexibility to handle a range of fuels will have a competitive advantage over a nonfuel-flexible, coal-only system.

2. Gasification is a more environmentally efficient method to generate electricity from coal. While much was learned from the previous CCT gasification projects (Wabash River and Tampa Electric), the different technology techniques to produce syngas with flexible-fuel co-feeds have not been demonstrated and operating demonstrations are essential to accelerate the widespread use of gasification.

The fuel cell demonstration has been moved to the existing Wabash River IGCC Plant near West Terre Huate, Indiana.

Comment No. 4 **Issue Code: 14**

DOE selected the Kentucky Pioneer IGCC Demonstration Project for further consideration under DOE's fifth solicitation (CCT-V) of the CCT Program and concludes that the project meets CCT Program requirements due to the first demonstration of a co-fed BGL gasifier and the facility size would be approximately 40 to 50 percent larger than other 100 percent coal-fed BGL facilities.

Because of DOE's limited role in providing cost-shared funding for the proposed Kentucky Pioneer IGCC Demonstration Project, and because of advantages associated with the proposed location, DOE did not

Herrick, Will
Campton, KY
Page 6 of 108

At what point does the presence of coal become token? Please make a specific answer to that question as it is the sole basis for DOE CCT's investing in the Trapp facility. KPE has said that they intend to use only 20% coal in the feedstock in the long run, 50% or less initially. 'Operation will commence on 100% coal with slowly increasing levels of RDF throughout the demonstration. This method will allow the development of a database of plant performance at various levels of RDF feed.'[6] Using Clean Coal monies for research on MSW/RDF diverts those dollars from their intended purpose.

The Wabash IGCC facility in Terre Haute, operating since 1996, has demonstrated most of the retrofit, repowering, coal, sulfur and NOx related features of Trapp with a similar gasifier from KPE's parent, Global Energy. BG/L facilities are in place in Europe, Singapore and elsewhere. They already offer a wealth of technical, environmental and financial data. A 1988/2000 NETL report, entitled 'British Gas/Lurgi Gasifier IGCC Base Cases', reports the Cost of Energy for IGCC BG/L facilities on pages 25-40[7].

Kentucky already has the lowest energy prices in the nation. From a Federal point of view, siting this plant anywhere else makes more sense in terms of meeting needs. If, (as described in the DEIS page S-3, 'Purpose and Need for Agency Action' paragraph 2), the goal is to 'significantly reduce electric power costs...', it may be most effective to look at sites for this facility where electricity rates are higher.

While Kentucky has the lowest energy costs in the nation, there are many other providers seeking to offer base and peaking capacity in the EKPC market area, to wit: the EKPC Mason County Spurlock Plant proposal introduced above (and many others). Neglecting to consider these other energy sources and providers is a serious omission in the Section 2 of the DEIS, Purpose and Need for Agency Action.

EKPC has proven in the past to seriously miscalculate their power needs. That is how the Trapp site was originally prepared and then mothballed for 20 years. EKPC is adding base capacity outside of this initiative (the Spurlock facility in Mason County), as are others. EKPC's pursuit of the Mason County Spurlock facility (Appendix D) appears to, for the near run, address their '1998 Power Requirements Study', cited as the energy demand component of the 'Need for Agency Action.'

6 P.2 Advanced Electric Power Generation Program Update 2000. May 17th, 2001 URL: www.lanl.gov/projects/cctc/factsheets/updates/documents/advelecigcc_2000_all.pdf
7 www.netl.doe.gov/coalpower/gasification/system/bgl3x_20.pdf

Page 5

3/14 (cont.)

Comment No. 4 (cont.) **Issue Code: 14**

evaluate alternative sites for the proposed project. Site selection was governed primarily by benefits that Global Energy could realize. Global Energy preferred the proposed project site because the costs would be much higher and the environmental impacts likely much greater for an undisturbed area.

Comment No. 5 **Issue Code: 18**

After the issuance of the NOI and during the scoping process, a third alternative, in addition to No Action Alternative 1 and the Proposed Action, was identified. The alternative was determined to be a reasonably foreseeable future action. The construction of the proposed project cannot begin until DOE issues the ROD. Consideration of power generated by the Spurlock Power Station is outside the scope of the EIS.

Comment No. 6 **Issue Code: 14**

An analysis of the use of alternative sources of power is outside the scope of the EIS.

Comment No. 7 **Issue Code: 21**

The Kentucky Pioneer IGCC Demonstration Project is a federal action selected for the CCT Program. The EIS is used as a tool to decide whether or not DOE should provide funding to the project. If the project is approved, KPE would be required to abide by all local, state, and federal regulations.

The Kentucky Natural Resources and Environmental Protection Cabinet has advised KPE that the RDF is a recovered material, not a waste. The Kentucky Pioneer IGCC Demonstration Project facility will be considered a recovered material processing facility and the gasification process will not require a waste permit as long as the RDF conforms to the statutory definition.

Herrick, Will
Campton, KY
Page 7 of 108

All the power plant interest in the Commonwealth bodes well for access to capacity in the long run. The base energy demand cited by DOE as justification for Trapp has not been well established, and would not compare well to most other sites where electricity rates were higher.

The case for spending Clean Coal dollars and the need for agency action has not been well made. The fact that the Lima facility is being built without Federal dollars undercuts the argument that the American power industry needs Federal funds to assess the potential of BG/L IGCC systems. There is an abundance of financial information already available. Little regarding coal powered IGCC systems will be learned at Trapp. Trapp is really about MSW, not CCT. Scarce tax dollars should not be spent, as the goals of the Clean Coal program described in the DEIS are already reasonably well met without Federal support, and are not well addressed by the Trapp proposal. Coal pollution abatement by not using coal defeats CCT goals.

Compromised Demonstration of 'Clean Coal'

Throughout the Introduction and Background section of the DEIS, the Federal goal is defined. The basis for funding, and the declared purpose stated there is demonstrating clean coal technology.

The summary page S-3's synopsis bundles the MSW derived fuel into the project goals. The inclusion of MSW & it's derivatives are not documented as a goal in the body of the DEIS, however. The entire background section details the chronology of the CCT program and DOE's interest in demonstration facilities. Nowhere is there mention of MSW or RDF fuels.

As presented in the DEIS,there is no Federal mandate for DOE's CCT program to demonstrate a waste-to-energy facility using clean coal monies. It seems disingenuous to label it a coal demonstration when so little coal is involved and in fact coal tonnage is being displaced by MSW. That is entirely contrary to the stated goals.

As designed, this facility is not going to demonstrate 'clean coal'; it is going to demonstrate a waste-to-energy technology. KPE has declared their long-term intention of using only 20% coal in the feedstock, with the rest being derived from distant sources of Municiple Solid Waste (MSW). DOE should justify how Clean Coal monies should be spent on MSW issues that remove coal from the feedstock.

I wrote the following to researchers at the University of Kentucky Center for Applied Energy Research: 'The questions that I have involve the phase states of the constituents as they transport through the gasifier, the gas cleaner, the sulfur recovery process and the turbine combustion. I am specifically trying to follow the transport and chemistry of metals and their oxides, the

Page 6

3/14 (cont.)

Comment No. 7 (cont.) **Issue Code: 21**

Chapter 3 of the EIS has been revised to include a more detailed and expansive description of the gasification process. The syngas is not a component of the RDF pellets, but rather a fuel generated from the coal and RDF pellets by a series of chemical reactions within the carefully controlled environment of the gasifiers.

Comment No. 8 **Issue Code: 21**

KPE is not attempting to circumvent KRS 224 or any other state or local laws. The Kentucky Natural Resources and Environmental Protection Cabinet has advised KPE that the RDF is a recovered material, not a waste. The Kentucky Pioneer IGCC Demonstration Project facility will be considered a recovered material processing facility and the gasification process will not require a waste permit as long as the RDF conforms to the statutory definition.

4/14 (cont.)

Comment No. 9 **Issue Code: 21**

KPE has a contract in place with EKPC to provide power continuously for a 20-year period. The facility would not shut down after the 1-year demonstration period, but would continue to operate to honor the commitment to EKPC. As discussed in Chapters 1 and 2 of this EIS, the performance, technical, and economic data would be used to determine the commercial viability of the co-fed BGL gasifier at other new and existing facilities. There would not be a new round of permitting following the end of the 1-year demonstration period. The PSD/Title V Air Permit issued by the Kentucky Division of Air Quality is final and does not require renewal following the demonstration. At the close of the demonstration period, the KPDES permit for water usage would also be final and not require renewal. Any required fuel feed component changes following the 1-year demonstration period would likely require modification of the air and water permits.