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Comment No. 1  
Comment noted.

Issue Code: 22

Kentucky Resources Council, Inc.

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February 1, 2002

BEFORE THE DEPARTMENT OF ENERGY  
NATIONAL ENERGY TECHNOLOGY LABORATORY

COMMENTS CONCERNING DEIS FOR PROPOSED  
KENTUCKY PIONEER ENERGY INTEGRATED GASIFICATION  
COMBINED CYCLE DEMONSTRATION PROJECT

Roy Spears  
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National Energy Technology Laboratory  
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By fax & email  
304-285-4403  
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Dear Mr. Spears:

These comments supplement those earlier submitted into the record during the public hearing on the proposed Kentucky Pioneer Energy Integrated Gasification Combined Cycle Demonstration Project (IGCC Protect). I appreciate your commitment to accept comments through today, and offer these comments as supplemental to those submitted previously by the Kentucky Resources Council, Inc. (Council). In addition, the Council endorses comments submitted by the Kentucky Environmental Foundation, Sierra Club Cumberland Chapter and Will Herrick, which are contained in the record.

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The Council is a non-profit environmental advocacy organization providing legal and technical assistance without charge to individuals and organizations in the Commonwealth on air, waste, water and resource extraction issues.

INTRODUCTION

By letter dated November 8, 2001, the Council received the *Draft Environmental Impact Statement for the proposed Kentucky Pioneer Energy Integrated Gasification Combined Cycle (IGCC) Demonstration project in Clark County, Kentucky*. According to that letter, the document was prepared "to evaluate the environmental impacts of a Clean Coal technology Program

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demonstration project that is proposed to be partially funded by the Department of Energy."

The project purpose, according to that letter, is "to establish the commercial viability of the fixed bed British Gas Lurgi process in the United States and the operation of a high temperature molten carbonate fuel cell using synthesis gas."

The comment period, which was to close on January 4, 2002, was extended by notice published in the *Federal Register* on January 18, to January 25, 2002. By telephonic communication, Mr. Spears indicated to the undersigned that comments would be accepted through today, February 1, 2002.

The proposal to construct a 540 mW IGCC plant at the J.K. Smith site in Trapp, Kentucky for generation of electricity from a gases generated from a mixed waste-coal fuels, raises several threshold questions concerning the suitability of the project for expenditure of Clean Coal Technology monies, and whether the project has met applicable solid waste requirements under state law.

**1. THE PROJECT VIABILITY APPEARS CONTINGENT ON LOCAL APPROVAL BY CLARK COUNTY SOLID WASTE PLANNING UNIT; FURTHER REVIEW SHOULD AWAIT CLARIFICATION OF APPLICABILITY OF WASTE REQUIREMENTS**

The applicant has acknowledged that the use of solid waste is a component of the economics of the project, without which one would assume that the project may not be viable. Given the central role that the blending of a 50% - 80% mixture of processed waste plays in the project, the uncertainty concerning the proper characterization of the waste for state and local regulatory purposes advises that the project review be suspended until this threshold matter is resolved.

The Council was asked to address the relationship of the proposed project and the intended utilization of a shredded, milled and pelletized municipal solid waste fuel, to Kentucky's solid waste disposal statutes and the requirement of maintaining consistency with local solid waste plans.

After a review of the position paper submitted by Global Energy to the state Division for Waste Management, and after review of the applicable statute and case law, the Council believes that the facility is subject to the solid waste regulations and is required to obtain a determination of consistency from the solid waste management governing body of Clark County before importing and disposing of the solid waste fuel.

By letter dated October 9, 2000, Global Energy Inc., Suite 2000, 312 Walnut Street, Cincinnati, OH 45202, through its manager of Regulatory Affairs Dwight Lockwood, requested a determination from the Kentucky Division of Waste

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**Comment No. 2**

**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 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.

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Management as to the applicability of KRS 224.40 to the proposed "integrated gasification combined cycle (IGCC) power plant project in Clark County."

The request letter from Global Energy (Hereafter Global) asserted that the proposed project was "exempt from waste regulations." The 2-paged letter contained an attached "Analysis of the Non-Applicability of KRS 224.40 to the Kentucky Pioneer Energy IGCC Project."

The determination of applicability of the waste regulations rests in the first instance with the Natural Resources and Environmental Protection Cabinet, subject to review by the courts. KRS Chapter 224 is a statute that is remedial in nature and its protections are to be broadly construed consistent with the public and environmental protection goals of the statute. Exemptions from its reach are to be narrowly construed.

The question of whether the proposed coal and waste-fueled facility is subject to the requirements of KRS Chapter 224 as a waste management and waste disposal facility is of significance to the residents of Trapp and of Clark County, since if exempted from the ambit of the term "municipal solid waste facility," the planned importation of processed municipal solid waste from northeastern states representing the equivalent of "roughly half of the residential waste generated in the entire Commonwealth of Kentucky" will not be subject to scrutiny and a determination by the local governing body of Clark County of the consistency with that county's approved solid waste plan.

When enacted in 1991, Senate Bill 2 substantially revised state and local solid waste management, requiring of local communities that they plan for the proper management of solid waste generated within their borders and promising, in return, that the local "governing body" responsible for solid waste planning would have the ability to control the manner and extent to which waste generated outside of the boundary of that planning unit would be managed and disposed of within the planning area.

The proposal to thermally treat and to combust the volatile fraction of one million tons or more per year<sup>1</sup> of treated municipal solid waste falls squarely within the type of facility intended by the General Assembly to be scrutinized under the solid waste planning process.

KRS 224.40-315 mandates that:

No permit to construct or expand a municipal solid waste disposal facility shall be accepted for processing by the Cabinet unless the application contains a determination from

<sup>1</sup> The Public Service Commission filing by East Kentucky Power Cooperative in response to requests for information indicated a 50-50% fuel to waste feed mix at 1 million tons of each per year, while noting that the actual feed ratio may vary.

**Comment No. 2 (cont.)**

**Issue Code: 14**

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

**Comment No. 3**

**Issue Code: 21**

KPE is not attempting to circumvent KRS 224, or any other state or local laws. KPE has appealed to the state for an interpretation of the language of applicable solid waste laws regarding RDF. The Kentucky Natural Resources and Environmental Protection Cabinet has determined that the RDF is a recovered material, not 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. A discussion of this issue has been added to Chapter 6 of the EIS.

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KPE received the Final PSD/Title V Air Permit issued by the Kentucky Division for Air Quality on June 7, 2001, and will submit an application for the KPDES permit at least 180 days before commencing construction. All other permit applications required will be completed after financial closure and during the development phase of the project.

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the governing body for the solid waste management area in which the facility is or will be located concerning the consistency of the application with the area solid waste Management plan [.]

The scope of this statute and the requirement for a determination of consistency with the approved solid waste plan is defined by the term "municipal solid waste disposal facility", which is defined in KRS 224.01-010(15) to include:

Any type of waste site or facility where the final deposition of any amount of municipal solid waste occurs, whether or not mixed with or including other waste allowed under subtitle D of the Federal Resource Conservation and Recovery Act of 1976, as amended, and includes, but is not limited to, incinerators and waste-to-energy facilities that burn municipal solid waste. . . .

The term is broadly inclusive of all types of waste sites or facilities where the final deposition of any amount of municipal solid waste occurs. There can be no serious argument that the feed material to be combined with the coal is a solid waste, which is to say, that the material is "garbage, refuse, sludge and other discarded material." The waste is to be processed, according to the applicant, at a facility in a state other than Kentucky, where it will be manufactured from municipal solid waste by removing "large objects and white goods" as well as "glass and metal [.]" The remaining material, including chlorinated plastics, will be milled and shredded.<sup>2</sup>

These "pellets" are municipal solid waste processed as an intermediate step in the thermal treatment of the waste to produce a gas for combustion. The proposed facility is utilizing a fuel stream comprised of partially separated, shredded and shaped municipal solid waste used as a fuel source, disposing of the waste through thermal treatment at high temperature to drive off the volatile fraction for combustion. As such, it is engaged in disposal of a municipal solid waste stream and falls within the ambit of a "municipal solid waste disposal facility" the siting and operation of which should be reviewed for consistency with local solid waste plans.

The applicant claimed exemption for the waste fuel from the waste program as a "recovered material," yet the clearly better reading of the statute, and the intent to carefully regulate the disposal of solid waste by thermal treatment as well as other means, militates against the exemption of the material from regulation as a solid waste. The material is not a "refuse-derived fuel" notwithstanding the claim by the applicant to the contrary, since the applicant has

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<sup>2</sup> Subpart Eb Siting Analysis Public Meeting and Comments, pp. 7-8.

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indicated that it intends to retain the recoverable plastics in the waste<sup>3</sup> (likely for the Btu value), and thus is outside of the ambit of "recovered material," since that definition specifically excludes "materials diverted or removed for purposes of energy recovery or combustion []" from being considered recovered material.

Assuming, for the sake of argument, that the waste were further processed over what is proposed, in order to meet the state definition of "refuse derived fuel" by removing all recoverable plastics and other recoverable material, such as mixed paper, corrugated paper and newsprint, the definition of "recovered material" still would not apply to exempt the entire waste stream from regulation since only 15% of the material processed by the facility creating the pellets could be credited as "RDF."

While the acceptance by the applicant of regulation under EPA's Municipal Solid Waste Combustor standards makes it difficult to accept at face value the assertion of non-applicability of state "waste" designation, commenter concurs that the state law itself determines how this facility is to be characterized for purposes of state regulation.

Because the material is not a "refuse derived fuel" under KRS 224.01-010(23) in that it has not been subject to "extensive separation of municipal solid waste" including "the extraction of recoverable materials for recycling" the processing of the municipal solid waste stream to create the palletized "fuel" does not make the material a "recovered material" under KRS 224.01-010(20). The proposed gasification step in the process and the cleaning of the volatile fraction of the waste for combustion does not make the facility a "recovered material processing facility" so as to exempt it from the definition of a municipal solid waste disposal facility or to avoid the obligation to be consistent with the local solid waste plan.<sup>4</sup>

Beyond the specific failure of the application to meet the criteria for an exempt "recovered material processing facility" because the waste feed will retain recoverable materials, including all plastics and paper, the *context* in which municipal solid waste disposal facilities are regulated under KRS Chapter 224 makes clear that the attempt to shoehorn this substantial waste-fueled energy facility into the category of a "recovered materials processing facility" is an ill-fit from a public policy standpoint. KRS 224.01-010, which contains many of the definitions for the chapter, is prefaced with the caveat "[a] s used in this chapter unless the context clearly indicates otherwise [.]". The statutory provision

<sup>3</sup> *Id.*

<sup>4</sup> Even assuming that the partially processed waste fell within the ambit of "refuse derived fuel" and the 15% limitation on RDF didn't limit the applicability of "recovered material" even as to RDF, the proposed facility is not a "recovered material processing facility" since it proposes to combust the gases created by the thermal and pressure treatment of the waste and is not storing and processing for resale or reuse. "Reuse," as that term is used by the General Assembly does not include use of wastes as a fuel with or without heat recovery. The latter concept is "resource recovery" and is a term distinct from "reuse of solid waste." See: KRS 224.43-010 (3) (which sets reuse of solid waste as a priority below reduction, and above recycling, composting, and resource recovery through mixed waste composting or incineration.

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requiring a determination of local consistency for disposal facilities was plainly intended to cover thermal treatment of municipal solid wastes with and without energy recovery, and to segment the facility into the component processes in order to exclude from the application of KRS 224.40-315 a facility which uses a sequential process of thermal treatment followed by combustion of volatile gases, and which presents many similar concerns in management of air, water and solid waste byproducts from a heterogeneous fuel source such as municipal solid waste (even if homogenous in shape), is contrary to the intent of the statute and the public policy behind it.

In sum, the palletized mixed municipal solid waste does not fall within the ambit of the state statutory definition of "refuse derived fuel" and is thus not a "recovered material." By definition, the facility is a "municipal solid waste disposal facility" under KRS 224.40-315(1), KRS 224.40-310 and KRS 224.01-010(15).

The letter by which the Council requested a formal determination from the Division of Waste Management concerning the applicability of KRS Chapter 224 is annexed to these comments.

Subsequent to the Council's preliminary comments, the County Attorney for Clark County, the host community in which the project is proposed, has written on behalf of the Clark County Fiscal Court, seeking an opinion from the Kentucky Attorney General as to the applicability of KRS Chapter 224. A copy of that letter is reprinted below:

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January 19, 2002

Hon. Ron Chandler  
Office of the Attorney General  
118 Capitol Building  
Frankfort, KY 40601

Re: Global Energy, Inc. Proposed Clark County Power Plant Project  
Applicability of KRS Chapter 224

Dear Attorney General Chandler:

The proposal of Global Energy, Inc., to construct a power plant within Clark County, Kentucky, referred to hereinafter as the Kentucky Pioneer Plant, has generated a considerable amount of discussion, particular as to whether it is subject to permit by the Clark County Fiscal Court under KRS Chapter 224.

The issue, as is simply stated, is whether the proposed facility is "subject to the solid waste regulations and is required to obtain a determination of consistency" from the solid waste management governing body of Clark County before importing and disposing of the solid waste yield through thermal treatment. Attached are communications from Kentucky Resources Council, Inc. that frame the issues and discuss the proposed applicability of the statutes. Before undertaking the public hearings and permit process, the Office of the Clark County Judge/Executive has directed us to request an opinion of your office as to whether this facility falls within the guidelines such as to require permit approval of the Clark County Fiscal Court.

We would appreciate your response to this inquiry at the earliest possible date. Thank you in advance for your continued assistance in these areas.

Kindest Regards,

John H. Kveton  
Assistant Clark County Attorney

cc: Clark County Judge/Executive Drew Graham

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The Council believes that further review of the proposed project should be deferred, pending a final determination by the Natural Resources and Environmental Protection Cabinet as to the applicability of the waste statutes to the proposed facility, and a determination by the Attorney General as to whether a formal Opinion will be provided and if so, the outcome of that opinion.

Assuming that the state statutes concerning solid waste planning are applicable to the importation of the waste into the solid waste planning area for disposal, DOE should return the application to the applicant as incomplete and defer any further consideration of the requested funding until and unless the applicant provides documentation of consistency from the governing body of the solid waste management area covering Clark County of the proposed importation and utilization of the solid waste material for the facility.

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Further, DOE should in that case extend to the Governing Body of that solid waste management area the opportunity to participate in any further EIS review as a cooperating agency.

**2. PROJECT NECESSITY AND SCOPE; ALTERNATIVES  
MUST BE BROADENED**

The necessity of funding the project and suitability of a project that proposes to displace up to 80% coal feed with pelletized garbage is another legitimate threshold inquiry, for one aspect of the environmental review and determination of reasonable alternatives is the question of whether the project as proposed is necessary, and whether the expenditure of federal funds intended to enhance rather than displace coal utilization, is appropriate.

Initially, appears that, with respect to the co-firing of municipal solid waste and coal, sufficient information exists or could be derived from comparable facilities firing comparable waste feeds without the substantial capital investment proposed in this case.

Available information suggests that this project is duplicative of another project reported to be under development by the parent company, Global Energy, in Lima Ohio, in which, according to information obtained from the EPA website, a 540 megawatt electric generation unit utilizing coal gasification and fed with a combination of coal and municipal solid waste, will be utilized.<sup>5</sup> To the extent that the Lima project is similar in technology and waste feed, an alternative that must be considered is whether the technology has been sufficiently "demonstrated" and/or whether that unit, or another unit, could be modified to demonstrate any aspects of this proposal at far lesser cost.

There are additional alternatives beyond those evaluated, that are well within the "rule of reason" established by the courts for bounding the scope of agency consideration of alternatives. The first is utilization of the Lima facility or the European counterpart facility in Germany, to demonstrate the technology, rather than providing new monies for capital construction of a facility which will be in "demonstration" mode for a brief period and which has the potential to revert with little modification to a traditional natural gas-fired plant. Either plant could be retrofitted to include the fuel cell unit.

The proposed construction of the Lima Energy Project raises a second question, which is whether DOE subsidy is necessary, since that project is proceeding without federal support. The federal Clean Coal effort has been criticized as spending taxpayer funds on projects that would have been viable without the subsidy, for technologies that were not in need of such support. In this case, it would appear that funding a 400 mW project utilizing a technology

<sup>5</sup> www.epa.gov/swerosps/bf/pdf/ss\_lima.pdf

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**Comment No. 4**

**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.

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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.



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and feedstock very similar to a project under construction by the parent company in a sister state without such subsidy, to be a questionable use of R&D monies.

An additional question is the extent to which the technology is in need of further demonstration. Funding of the development of a commercial coal-fired base load plant would not be an appropriate use of research and demonstration dollars, yet there is evidence in the record that the proposed technology is adequately demonstrated and that the proposal to provide federal funding is more a start-up subsidy for a commercial project than a demonstration project:

\* according to the National Coal Council, the British Gas/Lurgi (BGL) gasification process has already been demonstrated by Global Energy in Europe at the Schwarze Pumpe GmbH plant in Germany, raising the question of why the construction of this plant is being subsidized if the technology is "proven."<sup>6</sup> The project description makes much of the assertion that this will be the first commercial application of the technology in the United States, but there is no meaningful distinction to be drawn from the geographic location of the plant in or out of this country for purposes of analyzing the reliability, environmental impacts and costs of operating such a plant using the proposed waste feed. In a response to comments provided by the applicant as part of the air permitting process, the applicant indicated "This plant will be the first application in this country of the BGL technology and will be the first in this country to process RDF as well. An identically sized BGL is currently operating in Germany as part of the primary waste recycling facility in that country."

The applicant also noted that:

The main point is that the technology is well understood and has and aqueous stream cleanup technologies are well understood.

\* In response to the Public Service Commission request to provide feasibility studies for the project from East Kentucky Power Cooperative, Inc. in the Public Service Commission case of 2000-079, Dwight Lockwood of Kentucky Pioneer Energy, responding for East Kentucky Power Cooperative, stated that:

Global Energy has concluded that **the extensive operational history of both gasification and the BGL in particular, serves as an adequate demonstration of the feasibility of the technology. Commercial viability of the project is demonstrated by the Kentucky Pioneer Energy contractual commitments for the development and long-term operation of the facility.**

The enclosed brochure "Gasification of Solid and Liquid

<sup>6</sup> www.nationalcoalcouncil.org/documents/May2001report-revised.pdf

**Comment No. 4 (cont.)**

**Issue Code: 14**

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

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**Fuels for Power Generation**", by Department of Trade and Industry in the UK, presents a comprehensive analysis of gasification in general and a discussion of the various versions of gasification technology. **Information presented clearly demonstrates the technology is in place and operational.**

(Emphasis added).<sup>7</sup>

If the technology is sufficiently demonstrated that no feasibility study is deemed necessary to respond to the Public Service Commission request, how then can the DOE justify the expenditure of \$78 million of taxpayer funds to fund a "demonstration project" for a technology with "extensive operational history" that the applicant admits has had "adequate demonstration[.]"

\* The synopsis of the project on the DOE NETL website describes the technology in this way:

The technology is expected to be adaptable to a wide variety of potential market applications because of several factors. First, the BGL gasification technology has successfully used a wide variety of U.S. coals. Also, the highly modular approach to system design makes the BGL-based IGCC and molten carbonate fuel cell competitive in a wide range of plant sizes. In addition, the high efficiency and excellent environmental performance of the system are competitive with or superior to other fossil-fuel-fired power generation technologies.

Since the system design is "highly modular," one alternative that must be evaluated in addition to those proposed is to test the molten carbonate fuel cell (which accounts for a very minor relative amount of the power expected to be generated) on an existing unit, whether one of Global's or otherwise.

The consideration of alternatives must also consider alternative sites within and outside of the Commonwealth of Kentucky. The DEIS indicates that the DOE's role is limited to cost-sharing, and that this justifies the failure to consider alternative sites. In truth, the DOE support is important to the project economics, and the fact that DOE's role is a financial one rather than a permitting action does not excuse the agency from the obligation to consider a range of alternatives, including alternative sites. There is nothing unique or inherently advantageous to the proposed site; it will be importing both the coal and garbage pellets from elsewhere, and is certainly not the only site previously disturbed by industrial activity that is available. The record reflects that East Kentucky Power Cooperative, which had a contract to purchase the generated power, has received approval to construct a new unit to supply its anticipated power needs because the Public Service Commission found it reasonable for that utility not to rely on the power proposed to be generated and sold by this project.

<sup>7</sup> A copy of this response is attached to the hard copy of these comments.

**Comment No. 5**

**Issue Code: 14**

Comment noted. Because of DOE's limited role of providing cost-shared funding for the proposed Kentucky Pioneer IGCC Demonstration Project, alternative sites were not considered. KPE selected the existing J.K. Smith Site because the costs would be much higher and the environmental impacts would likely be greater if an undisturbed area was chosen.

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Another area in which the DEIS is lacking in analysis is in consideration of the environmental effects of the processing of the waste fuel. The proposed project would, according to a response to comments developed by the company, use "the equivalent of roughly half of the residential waste generated in the entire commonwealth of Kentucky", with that the waste coming from out of state. The direct and indirect effects of the management and processing of that material, including air, land and water effects, must be assessed in order to determine the full range of environmental impacts associated with diversion of that waste to "fuel."

There are a number of concerns that must be assessed by DOE relative to the fuel source(s) and processing:

- \* What controls will be in place to assure that industrial and commercial wastes, including exempt hazardous wastes, will not be in the MSW?
- \* Where will the waste be processed, by whom, what QA QC controls will be in place and how will this be monitored?
- \* What emissions and discharges will be associated with the transportation, storage, transfer and processing of the MSW?

**3. WASTES GENERATED BY PROJECT NEED FURTHER CHARACTERIZATION AND ANALYSIS**

The project proposes to co-mingle and thermally treat two waste streams that contain many constituents of ecological and human health concern. With a heterogeneous waste stream being utilized as a fuel source, the possibility for variability in the chemical composition of the waste streams that could in turn affect combustion performance and the creation of products of combustion and of incomplete combustion that are of air toxics and waste management concern, is increased. Moisture, chlorine, and metals content may vary widely among and within these waste streams. The coal itself contains numerous metals of potential public health concern, and the fate and transport of these metals in the gasification process (including mercury) must be evaluated and addressed. The DEIS lacks appropriate assessment of the composition and fate of these constituents of concern during the thermal treatment process, including the fate of metals and chlorinated compounds released during thermal treatment.

While the processed garbage will be sized to homogenous dimensions, the chemical composition of the waste stream will vary. Yet the DEIS contains little information on the fuel composition, moisture, metals or chlorine content, variability, testing, and on the fate and transport of the products of complete or incomplete thermal treatment of this RDF/coal mixture under various blending scenarios.

**Comment No. 6**

**Issue Code: 14**

All processing of MSW into RDF would occur at the RDF supplier's facilities. The actual conversion of waste to RDF is an established process currently ongoing and is not specific to the proposed project. The process is described so that the content of the RDF can be explained. The effects of processing MSW into RDF are outside of the scope of this EIS.

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**Comment No. 7**

**Issue Code: 16**

Chapter 3, Section 3.2.2.2, of the EIS, discusses the production and composition of the RDF pellets using all available and relevant data. KPE intends to supply all RDF pellets for this project from the same manufacturer. Variation in RDF pellet composition due to different manufacturing processes should not be an issue for this project. The gasification technology used produces a very consistent syngas product, regardless of the variability of the feed. Chapter 3 explains the BGL gasification process. The RDF pellet and coal co-feed is heated in a low oxygen environment, which causes a chemical conversion process that results in the formation of the syngas. The syngas product is combusted in the combined cycle turbines to produce electricity.

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**Comment No. 8**

**Issue Code: 12**

Gasification occurs at high temperatures and pressures using oxygen instead of air (nitrogen and oxygen) inputs. The high temperatures ensure complete destruction of toxic organic compounds. Inorganic toxic heavy metals are immobilized in molten slag and recovered by quenching as a nonleachable glassy frit. Gasification significantly reduces the formation of oxidative species such as SO<sub>x</sub> and NO<sub>x</sub>, and prevents the formation of dioxins/furans. Chloride, fluoride, mercury, arsenic, cadmium, lead, chromium, nickel and selenium have the potential to be present in the clean syngas or gas turbine exhaust. These elements usually represent less than 10 percent of input into the gasifier with coal. Nonvolatile elements such as barium, beryllium,

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