FINAL
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
GILBERTON COAL-TO-CLEAN FUELS
AND POWER PROJECT

GILBERTON, PENNSYLVANIA

Volume 2: Appendices

October 2007

U.S. DEPARTMENT OF ENERGY

COVER SHEET

October 2007

RESPONSIBLE AGENCY

U.S. Department of Energy (DOE)

TITLE

Final Environmental Impact Statement for the Gilberton Coal-to-Clean Fuels and Power Project

LOCATION

Gilberton, Pennsylvania

CONTACTS

Additional copies or information concerning this ***final*** environmental impact statement (EIS) can be obtained from Ms. Janice L. Bell, National Environmental Policy Act (NEPA) Document Manager, U.S. Department of Energy, National Energy Technology Laboratory, 626 Cochrans Mill Road, P.O. Box 10940, Pittsburgh, PA 15236-0940. Telephone: 412-386-4512.
E-mail: janice.bell@netl.doe.gov.

For general information on DOE's NEPA process, contact Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (***GC-20***), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585-***0103***. Telephone: 202-586-4600, or leave a toll-free message at 1-800-472-2756.

ABSTRACT

This EIS assesses the potential environmental impacts that would result from a proposed DOE action to provide cost-shared funding for construction and operation of facilities near Gilberton, Pennsylvania, which have been proposed by WMPI PTY, LLC, for producing electricity, steam, and liquid fuels from anthracite coal waste (culm). The project has been selected by DOE under the Clean Coal Power Initiative (CCPI) to demonstrate the integration of coal waste gasification and Fischer-Tropsch (F-T) synthesis of liquid hydrocarbon fuels at commercial scale. The proposed facilities would use a gasifier to convert coal waste to synthesis gas, which would be conveyed to F-T liquefaction facilities for production of liquid fuels and to a combined-cycle power plant. The power plant would use the synthesis gas to drive a gas combustion turbine and exhaust gas from the gas turbine to generate steam from water to drive a steam turbine. Both turbines would generate electricity.

The EIS evaluates potential impacts of the proposed facilities on land use, aesthetics, air quality, geology, water resources, floodplains, wetlands, ecological resources, socioeconomic resources, waste management, human health, and noise. The EIS also evaluates potential impacts on these resource areas for a scenario resulting from the no-action alternative (DOE would not provide cost-shared funding) in which the proposed facilities would not be built or operated.

PUBLIC PARTICIPATION

DOE encourages public participation in the NEPA process. Comments were invited on the Draft EIS after publication of the Notice of Availability in the Federal Register on December 8, 2005. The public comment period ended on February 8, 2006. DOE considered late comments to the extent practicable. DOE conducted two formal public hearings to receive comments on the draft EIS: the first was on January 9, 2006, at Shenandoah Valley Junior/Senior High School in Shenandoah, Pennsylvania, and the second was on January 10, 2006, at D.H.H. Lengel Middle

School in Pottsville, Pennsylvania. An informational session was held prior to each of these hearings for the public to learn more about the proposed project. The public was encouraged to provide oral comments at the hearings and to submit written comments to DOE by the close of the comment period on February 8, 2006. In preparing the final EIS, DOE considered both oral and written comments.

On January 12, 2007, a Notice of Availability was published in the Federal Register to invite comments on the Supplement to the Draft EIS (DOE/EIS-0357D-S1) that was issued to correct estimates of CO_2 emissions from the proposed plant that were published in the draft EIS, and to provide additional information regarding CO_2 releases and CO_2-related cumulative impacts. The comment period for the Supplement to the Draft EIS ended on February 27, 2007. In preparing this final EIS, DOE considered all written comments on the Supplement to the Draft EIS.

CHANGES FROM THE DRAFT EIS

All changes, which have been made to improve the usefulness of the document to the decision maker and to be responsive to the public, are shown in boldface italics font (as is this paragraph), except for Appendix E, which contains the Supplement to the Draft EIS, Appendices D and F, which contain the comments and responses on the draft EIS and the Supplement to the Draft EIS, respectively, and Appendix G, which contains a comparison of the potential impacts of petroleum coke and anthracite culm use. Appendices D through G are presented in Volume 2 of this EIS.

TABLE OF CONTENTS

VOLUME 2: APPENDICES

APPENDIX A

CONSULTATION LETTER UNDER SECTION 7 OF THE ENDANGERED SPECIES ACT

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

May 4, 2007

Janice Bell
U.S. Department of Energy
3610 Collins Ferry Road
Morgantown, WV 26507-0880

RE: USFWS Project #2007-0858

Dear Ms. Bell:

This responds to your letter of April 27, 2007, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed Gilberton Coal-to-Clean Fuels and Power project located in Schuylkill County, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

Except for occasional transient species, no federally listed or proposed threatened or endangered species under our jurisdiction are known to occur within the project impact area. Therefore, no biological assessment or further consultation under the Endangered Species Act is required with the Fish and Wildlife Service. This determination is valid for two years from the date of this letter. If the proposed project has not been fully implemented prior to this, an additional review by this office will be necessary. Also, should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A compilation of certain federal status species in Pennsylvania is enclosed for your information.

This response relates only to endangered or threatened species under our jurisdiction based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

Requests for information regarding State-listed endangered or threatened species should be directed to the Pennsylvania Game Commission (birds and mammals), the Pennsylvania Fish and Boat Commission (fish, reptiles, amphibians and aquatic invertebrates), and the Pennsylvania Department of Conservation and Natural Resources (plants).

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

Please contact Pamela Shellenberger of my staff at 814-234-4090 if you have any questions or require further assistance.

Sincerely,

David Densmore
Supervisor

Enclosure

Federally Listed, Proposed, and Candidate Species in Pennsylvania

(revised August 17, 2006)

Common Name	Scientific Name	Status[1]	Distribution (Counties and/or Watersheds)
MAMMALS			
Indiana bat	*Myotis sodalis*	E	Hibernacula: Armstrong, Beaver, Blair, Centre, Fayette, Lawrence, Luzerne, Mifflin and Somerset Co. Maternity sites: Blair, Berks and York Co.
BIRDS			
Bald eagle	*Haliaeetus leucocephalus*	T	Nesting: Adams, Armstrong, Berks, Bradford, Bucks, Butler, Cameron, Centre, Chester, Columbia, Crawford, Dauphin, Erie, Forest, Fulton, Huntingdon, Lancaster, Luzerne, Lycoming, McKean, Mercer, Monroe, Montgomery, Montour, Northampton, Northumber-land, Pike, Sullivan, Tioga, Venango, Warren, Wayne, Westmoreland and York Co. Winter: near ice-free sections of rivers, lakes and reservoirs (*e.g.*, Delaware River, Pymatuning Reservoir)
Piping plover	*Charadrius melodus*	E	Designated critical habitat on Presque Isle (Erie Co.). Migratory. No nesting in PA since 1950s, but recent colonization attempts at Presque Isle
REPTILES			
Bog turtle	*Clemmys (Glyptemys) muhlenbergii*	T	Adams, Berks, Bucks, Chester, Cumberland, Delaware, Franklin, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York Co. *Historically found in Crawford, Mercer and Philadelphia Co.*
Eastern massasauga rattlesnake	*Sistrurus catenatus catenatus*	C	Butler, Crawford, Mercer and Venango Co. *Historically found in Allegheny and Lawrence Co.*
MUSSELS			
Clubshell	*Pleurobema clava*	E	French Creek and Allegheny River (and some tributaries) in Armstrong, Clarion, Crawford, Erie, Forest, Mercer, Venango, and Warren Co.; Shenango River (Mercer and Crawford Co.) *Has not been found recently in 13 streams of historical occurrence in Butler, Beaver, Fayette, Greene, Indiana, Lawrence, and Westmoreland Co.*
Dwarf wedgemussel	*Alasmidonta heterodon*	E	Delaware River (Pike and Wayne Co.). *Has not been found recently in streams of historical occurrence in the Delaware River watershed (Bucks, Carbon, Chester, Philadelphia Co.) or Susquehanna River watershed (Lancaster Co.)*

US Fish and Wildlife Service
315 South Allen Street, Suite 322, State College, Pennsylvania 16801

Common Name	Scientific Name	Status[1]	Distribution (Counties and/or Watersheds)
MUSSELS (continued)			
Northern rifffleshell	*Epioblasma torulosa rangiana*	E	French Creek and Allegheny River (and some tributaries) in Armstrong, Clarion, Crawford, Erie, Forest, Mercer, Venango, and Warren Co. *Has not been found recently in streams of historical occurrence, including: Shenango River (Lawrence Co.), Conewango Creek (Warren Co.)*
Rayed bean	*Villosa fabalis*	C	French Creek and Allegheny River (Armstrong, Clarion, Crawford, Erie, Forest, Mercer, Venango, Warren Co.); Cussewago Creek (Crawford Co.). *Has not been found recently in 5 streams of historical occurrence in Armstrong, Lawrence, Mercer and Warren Co.*
Sheepnose	*Plethobasus cyphyus*	C	Allegheny River (Forest and Venango Co.). *Has not been found recently in streams of historical occurrence, including: Allegheny River (Armstrong Co.), Beaver River (Lawrence Co.), Ohio River (Allegheny and Beaver Co.), and Monongahela River (Washington Co.)*
FISH			
Shortnose sturgeon[2]	*Acipenser brevirostrum*	E	Delaware River and other Atlantic coastal waters
PLANTS			
Northeastern bulrush	*Scirpus ancistrochaetus*	E	Adams, Bedford, Blair, Carbon, Centre, Clinton, Columbia, Cumberland, Dauphin, Franklin, Huntingdon, Lackawanna, Lehigh, Lycoming, Mifflin, Monroe, Perry, Snyder, Tioga, and Union Co. *Historically found in Northampton Co.*
Small-whorled pogonia	*Isotria medeoloides*	T	Centre, Chester and Venango Co. *Historically found in Berks, Greene, Monroe, Montgomery and Philadelphia Co.*

[1] E = Endangered; T = Threatened; P = Proposed for listing; C = Candidate
[2] Shortnose sturgeon is under the jurisdiction of the National Marine Fisheries Service

US Fish and Wildlife Service
315 South Allen Street, Suite 322, State College, Pennsylvania 16801

APPENDIX B

CONSULTATION LETTER UNDER SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

April 13, 2005

Janice Bell
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507-0880

Re: File No. ER 03-1229-107-C
DOE Draft Environmental Impact Statement: Gilberton Coal-to-Clean Fuels & Power Project, Frackville & Gilberton Boroughs, Schuylkill County

Dear Ms. Bell:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

Based on our survey files, which include both archaeological sites and standing structures, there are no National Register eligible or listed historic or archaeological properties in the area of this proposed project. Therefore, your responsibility for consultation with the State Historic Preservation Office for this project is complete. Should you become aware, from any source, that historic or archaeological properties are located at or near the project site, please notify the Bureau for Historic Preservation at (717) 783-8946.

Sincerely,

Douglas C. McLearen, Chief
Division of Archaeology & Protection

DCM/tmw

APPENDIX C

ORGANIZATIONAL CONFLICT OF INTEREST STATEMENT

NEPA DISCLOSURE STATEMENT FOR PREPARING AN ENVIRONMENTAL IMPACT STATEMENT ON THE GILBERTON COAL-TO-CLEAN FUELS AND POWER PROJECT

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations." 46 FR 18026–18038 at Questions 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026–18038 at 1803.

In accordance with these requirements UT-Battelle, LLC hereby certifies as follows:
COMPANY NAME

Fill in either (a) or (b)

(a) UT-Battelle, LLC (COMPANY NAME) has no financial or other interest in the outcome of the Gilberton Coal-to-Clean Fuels and Power Project.

(b) _____ (COMPANY NAME) has the following financial or other interest in the outcome of the Gilberton Coal-to-Clean Fuels and Power Project and hereby agrees to divest itself of such interest prior to initiating any technical analysis in support of this project.

Financial or Other Interests

1.
2.
3.

Certified by:

By R Miller 4.19.07
SIGNATURE DATE

Barry R. Miller
NAME

Director, Contracts
TITLE

APPENDIX E

SUPPLEMENT TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE GILBERTON COAL-TO-CLEAN FUELS AND POWER PROJECT

DOE/EIS-0357D-S1

December 2006

DOE/EIS-0357D-S1

SUPPLEMENT TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE GILBERTON COAL-TO-CLEAN FUELS AND POWER PROJECT

GILBERTON, PENNSYLVANIA

December 2006

U.S. DEPARTMENT OF ENERGY

COVER SHEET

December 2006

RESPONSIBLE AGENCY

U.S. Department of Energy (DOE)

TITLE

Supplement to the Draft Environmental Impact Statement for the Gilberton Coal-to-Clean Fuels and Power Project (DOE/EIS-0357D-S1)

LOCATION

Gilberton, Pennsylvania

CONTACTS

Additional copies or information concerning this Supplement to the Draft Environmental Impact Statement (EIS) can be obtained from Ms. Janice L. Bell, National Environmental Policy Act (NEPA) Document Manager, U.S. Department of Energy, National Energy Technology Laboratory, 626 Cochrans Mill Road, P.O. Box 10940, Pittsburgh, PA 15236-0940. Telephone: 412-386-4512. E-mail: janice.bell@netl.doe.gov.

This Supplement to the Draft EIS (DOE/EIS-0357D-S1) is available on the Internet via the DOE National Environmental Policy Act (NEPA) web site at *http://www.eh.doe.gov/nepa*, or via the National Energy Technology Laboratory web site at *http://www.netl.doe.gov*. In addition, the Supplement and the Draft EIS (DOE/EIS-0357) can be obtained from Ms. Janice Bell at the above address. In addition, this Supplement to the Draft EIS has been distributed to persons who received a copy of the Draft EIS and to those who have expressed an interest since its publication.

For general information on DOE's NEPA process, contact Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (GC-20), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585-0103. Telephone: 202-586-4600, or leave a toll-free message at 1-800-472-2756.

ABSTRACT

The DOE has prepared this Supplement to the Draft EIS to correct information regarding carbon dioxide (CO_2) emissions from the proposed Gilberton plant, to provide information on the feasibility of carbon sequestration of the CO_2 emissions from the Gilberton plant, and to present additional information regarding CO_2-related cumulative impacts associated with potential future deployment of the proposed technology.

The Draft EIS for the Gilberton Coal-to-Clean Fuels and Power Project (DOE/EIS-0357), issued in December 2005, assesses the potential environmental impacts that would result from a proposed DOE action to provide cost-shared funding for construction and operation of facilities near Gilberton, Pennsylvania, which have been proposed by WMPI PTY, LLC, for producing electricity, steam, and liquid fuels from anthracite coal waste (culm). The proposed project was selected by DOE for further consideration under the Clean Coal Power Initiative (CCPI) to demonstrate the integration of coal waste gasification and Fischer-Tropsch (F-T) synthesis of liquid hydrocarbon fuels at commercial scale. The Draft EIS evaluates potential impacts of the proposed facilities on land use, aesthetics, air quality, geology, water resources, floodplains, wetlands, ecological resources, socioeconomic resources, waste management, human health, and noise. The Draft EIS also evaluates potential

impacts on these resource areas for a scenario resulting from the no-action alternative (DOE would not provide cost-shared funding) in which the proposed facilities would not be built or operated.

DOE received comments from the Natural Resources Defense Council (NRDC) regarding how the Draft EIS addressed carbon dioxide (CO_2) emissions from the proposed project in letters dated February 7, 2006, June 2, 2006, June 5, 2006, and August 9, 2006 (see Attachment). In addition, DOE staff met with NRDC representatives on June 27, 2006, to ensure that the Department understood the comments. The comments expressed concern about the potential impacts on global warming and questioned the accuracy of the annual rate of CO_2 emission reporting in the Draft EIS. These comments also requested DOE to enhance the analysis of potential CO_2-related cumulative impacts, to further explore the feasibility of CO_2 sequestration, and to provide a public comment opportunity on the revised sections of the EIS. Comments on CO_2 emissions and carbon sequestration were also received from the following organizations and members of the public: the Coalition of Concerned Coal Region Citizens; the Mid-Atlantic Environmental Law Center; the Citizens for Pennsylvania's Future (Penn's Future); Mike Ewall; Edward and Helen Sluzis; and James Kotcon (see Attachment). These comments were similar in nature to those received from the NRDC, and therefore, are addressed as described below.

In considering these comments, DOE found that the annual rate of CO_2 emissions reported in the Draft EIS included only the total quantity of CO_2 that would be emitted directly from the proposed facilities. The reported quantity did not include a larger quantity of CO_2 in a concentrated stream exiting the Rectisol unit that would also be emitted. It was previously anticipated that this stream would be sold; however, the industrial participant has informed DOE that the commercial sale of the CO_2 would not occur in the foreseeable future, and therefore, all of the CO_2 would be emitted to the atmosphere. In response to comments, DOE has revised the document to clarify the total CO_2 emissions rate. In addition, DOE has enhanced the discussion of cumulative impacts and the discussion of the feasibility of carbon sequestration.

To further the purposes of NEPA, DOE is issuing for public comment these revised pages of the EIS that address CO_2. Please note that this Supplement to the Draft EIS contains only those sections/pages affected by comments related to CO_2 emissions and associated issues, including carbon sequestration. DOE is requesting comments only on these sections. ***All changes to the text contained in the Draft DOE/EIS-0357 are shown in boldface italics font (as is this sentence).***

PUBLIC COMMENTS

DOE encourages public participation in the NEPA process and invites the public to comment on this Supplement to the Draft EIS during a 45-day comment period ending February 27, 2007. DOE will consider late comments to the extent practicable. Comments may be submitted in writing to Ms. Janice L. Bell at the above address. Comments may also be submitted by fax to: (412) 386-4806; electronically to: jbell@netl.doe.gov; or via a toll-free telephone number: 1-866-576-8240. DOE will consider comments on this Supplement to the Draft EIS in preparing the Final EIS, together with comments on the Draft EIS. Commenters do not need to resubmit their earlier comments.

REVISIONS TO CO_2-RELATED DISCUSSIONS IN DRAFT DOE/EIS-0357

Pursuant to 10 CFR 1021.314, this Supplement to the Draft Environmental Impact Statement (DOE/EIS-0357) for the Gilberton Coal-to-Clean Fuels and Power Project was prepared in response to comments received concerning carbon dioxide (CO_2) emission totals and the potential of the proposed action to capture and sequester CO_2 emissions. The primary focus of the comments was the total amount of CO_2 emissions that would be generated by the integrated facility. In response to comments, DOE has determined that the concentrated CO_2 stream exiting the gas cleanup system had not been included in the CO_2 emission total. This Supplement presents the sections of the Draft EIS that were modified to revise the CO_2 emission total and other sections of the Draft EIS related to CO_2 emissions and carbon sequestration, including sections that consider the impacts of commercial operation and cumulative impacts. It should be noted that this Supplement contains only those sections/pages affected by comments related to CO_2 emissions and sequestration. The U.S. Department of Energy is requesting comments only on these sections. ***All changes to the text contained in the Draft DOE/EIS-0357 are shown in boldface italics font (as is this sentence).***

From the **Summary**

Carbon dioxide emissions to the atmosphere resulting from the operation of the proposed facilities would include CO_2 emitted by facility operations (832,000 tons per year) and concentrated CO_2 exiting the gas cleanup system (1,450,000 tons per year). While it was previously anticipated that the concentrated CO_2 stream would be sold as a byproduct, the industrial participant has informed DOE that the commercial sale of the CO_2 would not occur in the foreseeable future. Therefore, all of the CO_2 would be emitted to the atmosphere. In combination, these sources would increase global CO_2 emissions by about 2,282,000 tons per year, adding to global emissions of CO_2 resulting from fossil fuel combustion, which are estimated to have been 26,000,000,000 tons in the year 1999 (IPCC 2001).

From **Section 2 The Proposed Action and Alternatives**

2.1 Proposed Action

2.1.6 Outputs, Discharges, and Wastes

2.1.6.1 Air Emissions

Based on a plant operating rate of 7,500 hours per year (an 85% capacity factor), air emissions from the proposed facilities would total less than 100 tons per year for each of the criteria pollutants. SO_2 emissions would be about 29 tons per year, NO_x emissions would be about 70 tons per year, particulate emissions would be about 23 tons per year, and CO emissions would be about 54 tons per year. VOC emissions would be about 28 tons per year (see footnote b of Table 2.1.1 for potential-to-

emit annual emissions included in the air permit application submitted to the Pennsylvania Department of Environmental Protection). Trace emissions of other pollutants would include mercury, beryllium, sulfuric acid mist, hydrochloric acid, hydrofluoric acid, benzene, arsenic, and various heavy metals, which are not yet quantified but for which an air quality permit has been issued by the Pennsylvania Department of Environmental Protection with annual limits to ensure that the proposed facilities would be a minor new source of the pollutants (Section 4.1.2.2). ***The proposed facilities would also produce about 2,282,000 tons per year of CO_2. Although CO_2 is not regulated as an air pollutant, it is a greenhouse gas that is generally regarded by a large body of scientific experts as contributing to global warming and climate change (IPCC 2001).***

From **Section 4 Environmental Consequences**

4.1 Proposed Action

4.1.2 Atmospheric Resources and Air Quality

4.1.2.2 Operation

Global Climate Change

A worldwide environmental issue is the possibility of changes in the global climate (e.g., global warming) as a consequence of increasing atmospheric concentrations of greenhouse gases. ***International scientific consensus has indicated that the earth's climate is changing and that human activity is a factor (IPCC 2001).*** The atmosphere allows a large percentage of incoming solar radiation to pass through to the earth's surface and be converted to heat energy (infrared radiation) that does not pass back through the atmosphere as easily as the solar radiation passes in. The result is that heat energy is "trapped" near the earth's surface.

Greenhouse gases include water vapor, CO_2, methane, nitrous oxide, O_3, and several chlorofluorocarbons. The greenhouse gases constitute a small percentage of the earth's atmosphere; however, their collective effect is to keep the temperature of the earth's surface about 60°F warmer, on average, than it would be if no atmosphere existed. Water vapor, a natural component of the atmosphere, is the most abundant greenhouse gas. The second-most abundant greenhouse gas is CO_2. ***It has been estimated that CO_2 concentrations in the atmosphere have increased by 31% since 1750 (IPCC 2001) and by 19% from 1959 to 2003 (Keeling and Whorf 2005).*** Fossil fuel burning is the primary contributor to increasing concentrations of CO_2 ***(IPCC 2001).*** The increasing CO_2 concentrations ***likely*** have contributed to a corresponding increase in ***temperature in the lower atmosphere***. ***The*** globally averaged temperature in the lower atmosphere ***has increased by about 1 to 1.4 ºF in the last hundred years (IPCC 2001).*** Because CO_2 is ***relatively*** stable in the atmosphere and

essentially uniformly mixed throughout the troposphere and stratosphere, the climatic impact ***of CO_2 emissions*** does not depend on ***where the emissions occur***.

Carbon dioxide emissions resulting from the operation of the proposed facilities would add about 2,282,000 tons per year to global CO_2 emissions, thus adding to global emissions of CO_2 resulting from fossil fuel combustion, which are estimated to have been 26,000,000,000 tons in the year 1999 (IPCC 2001). A more recent study estimated global emissions of CO_2 from fossil fuel combustion to be 28,320,940,000 tons in the year 2003 (Marland et al. 2006). The total emissions from WMPI would include CO_2 emitted directly to the atmosphere by facility operations (832,000 tons per year) plus the concentrated CO_2 stream separated in the gas cleanup system (1,450,000 tons per year; Radizwon 2006), which would be emitted at the site. Section 5.1.4 discusses the possible feasibility of CO_2 sequestration during the 50-year life of the plant.

From **4.2 POLLUTION PREVENTION AND MITIGATION MEASURES**

Pollution prevention and mitigation measures have been incorporated by WMPI as part of the design of the proposed project. The proposed facilities' use of anthracite culm as feedstock would allow reclamation of land currently stockpiled with culm and would provide a beneficial use for ***this waste*** material. Also, the quality of water returned to the mine pool following use by the proposed facilities would be improved. WMPI plans to sell the coarse slag and elemental sulfur as byproducts to offsite customers. In addition, mitigation measures have been developed to minimize potential environmental impacts. Table 4.2.1 lists the pollution prevention and mitigation measures that WMPI would provide during the construction and operation of the proposed facilities.

Additional mitigation measures have been considered for the concentrated stream of CO_2 exiting the Rectisol unit. The measures considered include the sale of the concentrated CO_2 stream and geologic sequestration of this stream. However, it has been determined that these options would not be feasible during the project demonstration phase. The industrial participant has informed DOE that sale of the CO_2 byproduct would not occur in the foreseeable future. In addition, DOE has considered the potential to reduce project CO_2 emissions using geologic sequestration. This is not a reasonable option because sequestration technology is not sufficiently mature to be implemented at production scale during the demonstration period for the proposed facilities. The future potential for geologic sequestration of CO_2 during commercial operation of the proposed facilities is discussed in Section 5.1.4.

From **Section 5 IMPACTS OF COMMERCIAL OPERATION**

Following completion of the 3-year demonstration, three scenarios would be reasonably foreseeable: (1) a successful demonstration followed immediately by commercial operation of the facilities at approximately the same production level; (2) an unsuccessful demonstration followed by conversion of the facilities to an integrated gasification combined-cycle power plant; and (3) an unsuccessful demonstration followed by dismantlement of the facilities. ***The following sections discuss the potential environmental consequences of these three scenarios. For*** the first two scenarios, the expected operating life of the facilities ***is assumed to be 50*** years.

From 5.1 COMMERCIAL OPERATION FOLLOWS DEMONSTRATION

Under the first scenario, the level of ***most*** short-term impacts during commercial operation would not change from those described for the demonstration (Section 4) because the proposed facilities would continue operating 24 hours-per-day with the same operating characteristics. ***There could be differences, however,*** for impacts that accumulate with time (e.***g., resource consumption***, solid waste disposal, ***and buildup of greenhouse gases in the atmosphere). Also, changes in the environmental setting and other changes external to the facilities could result in changes in project impacts.***

From ***5.1.4 Carbon Dioxide (CO_2) Emissions***

Over the 50-year duration of commercial operation, the facilities could release a total of about 114,000,000 tons of CO_2 to the global atmosphere, consisting of about 42,000,000 tons of CO_2 emissions from facility operations and 72,000,000 tons of CO_2 recovered in the Rectisol unit. In the long term (following the demonstration phase), the industrial participant may negotiate the sale of the concentrated CO_2 stream for use in other types of industrial or commercial operations. In addition, during the 50-year period it might become feasible to reduce the project's contribution to global climate change by sequestering some of the recovered CO_2 (1,450,000 tons/yr) underground.

Underground storage, or geologic sequestration, of CO_2 is a promising technology [1] being actively investigated and tested nationally and internationally by DOE and other organizations (Davison et al. 2001, IPCC 2005). Most of the research projects being conducted are at a pilot or smaller scale. Large-scale commercial deployment of the most promising carbon sequestration

[1] Potential geologic sequestration technologies include injection into depleted oil and gas fields (to enhance recovery of residual hydrocarbons in addition to trapping CO_2); injection into deep saline formations (in which CO_2 is trapped physically and also reacts chemically with dissolved substances in ground water, precipitating to form solid compounds that remain in the formation); and injection into unmineable coal seams (in which adsorption of CO_2 onto the coal displaces trapped methane, which can be extracted for sale as natural gas).

technologies is expected to be technically practicable within the next 15 years (CO_2 Capture and Storage Working Group 2002). During the 50-year duration of commercial operation, a combination of economic incentives and new legal requirements might result in the industrial participant investigating the option to sequester CO_2 recovered from the proposed facilities.

The feasibility of any potential sequestration technology requires the availability of a suitable geologic setting. Based on geologic factors, there are two theoretically possible scenarios for future geologic sequestration of CO_2 from the proposed facilities: (1) sequestration at a regional sequestration site and (2) sequestration in the Schuylkill County area.

In the first scenario, regional sequestration could occur in Western Pennsylvania, where the Midwest Regional Carbon Sequestration Partnership has identified a potential for geologic sequestration of 76 gigatonnes (83 billion tons) of CO_2 in saline formations, depleted oil and gas fields, and coal seams (Battelle 2005). The region's sequestration capacity would be more than sufficient for the 72,000,000 tons of CO_2 that would be recovered during the facilities' 50-year operating life. A buried pipeline (similar to a natural gas pipeline) or extensive rail transportation (about 14,500 100-ton or 10,360 140-ton rail tanker cars per year) would be required to transport the CO_2 to an injection site in Western Pennsylvania (150 miles or more from Gilberton). Multiple injection wells would need to be installed and operated to receive the CO_2; multiple extraction wells also would be needed for CO_2 sequestration in depleted oil and gas fields or methane-bearing coal beds.

In the second scenario, sequestration could occur in the Schuylkill County area, in deep unmineable coal seams, while producing coal bed methane for sale as natural gas. While Midwest Regional Carbon Sequestration Partnership geologic mapping did not extend into Eastern Pennsylvania (Gupta 2006), analyses of the region's geology, geologic history, geologic structure, mining history, and measurements on coal samples suggest a considerable potential to recover methane from unmineable coals in the anthracite region (Milici 2004a and 2004b, Milici and Hatch 2004). DOE estimates[2] that a local carbon sequestration and coal bed methane production

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[2] *The presence of methane in the area's coal is indicated by measurements on coal samples and by a history of "fire-damp" (methane) explosions in anthracite mines during the early years of mining (Milici 2004b). While the anthracite region's complex geologic structure would inhibit coal bed methane recovery, the U.S. Geological Survey has identified several areas in the Southern Anthracite Field (i.e., central Schuylkill County) where coal bed methane recovery might be feasible because rock strata are subhorizontal to gently inclined. Total coal bed thicknesses of 50 to 100 ft within the interval about 500 to 2,000 ft below the ground surface (Milici 2004a and 2004b) and in-place gas content expected to average around 300 ft^3/ton may support future development of a commercially viable natural gas production operation, particularly if angled drill holes are used (Milici 2006).*

To estimate potential sequestration capacity in Schuylkill County, DOE assumed the coal has an average gas-in-place methane content of 100 ft^3/ton (USGS data suggest that this is a conservative estimate); the density of CO_2 gas is 17,250 ft^3/ton; 90% of the methane contained in the coal could be extracted and replaced by CO_2; and the volume of CO_2 sequestered would be twice the volume of methane extracted (Battelle 2005). Based on these assumptions, if one year's production of CO_2 from the proposed facilities (1,450,000 tons/year, or about 25 billion ft^3/yr as gas) were injected, the injected material would utilize the

operation could sequester only a portion of the facilities' concentrated CO_2 stream, as the potential sequestration capacity in Schuylkill County could not accommodate the facilities' lifetime CO_2 production (72,000,000 tons).

Under either scenario, carbon sequestration operations could have environmental impacts from the use and disturbance of land (for exploration activities, well fields, and CO_2 pipelines) and possibly from rail or truck transportation of CO_2. Any oil or gas production associated with CO_2 sequestration would produce local economic benefits along with potential environmental impacts from refining, storing, and transporting the hydrocarbon fuels. In addition, sequestration combined with coal bed methane recovery could result in impacts from the pumping and disposing of water from the methane-bearing coal beds. In extracting coal bed methane, water is pumped from the coal beds to lower the pressure that keeps methane adsorbed to the surface of the coal, thus stimulating desorption of methane (USGS 2000). In the anthracite region, unmineable coal and surrounding rock layers are likely to contain abundant groundwater, which would contribute to the potential for impacts (Milici 2004b).

From **Section 6 Cumulative Impacts**

6.1 Air Quality

As discussed in Section 4.1.2.2, ***the operation of the*** proposed facilities would increase global CO_2 emissions by about ***2,280,000*** tons per year, ***adding to global emissions of CO_2 resulting from fossil fuel combustion, which are estimated to have been 26,000,000,000 tons in the year 1999 (IPCC 2001).***

In addition, the successful demonstration of the integration of coal waste gasification and F-T synthesis of liquid hydrocarbon fuels at a commercial scale may encourage the development of similar facilities producing liquid hydrocarbon fuels from coal. Therefore, another consideration for evaluating potential cumulative impacts from the proposed facilities on greenhouse gas emission totals was to compare the greenhouse-gas contribution from the coal-to-liquids (CTL) technology to be demonstrated with the greenhouse-gas contribution from conventional technologies for producing liquid transportation fuels. Because coal has a higher carbon-to-hydrogen ratio than crude oil, production of liquid hydrocarbon fuel from coal generates more excess carbon (released as CO_2) than production of the same quantity of liquid fuel from petroleum.

CO_2 storage capacity of about 140,000,000 tons of in-place coal, while producing about 12.5 billion ft^3/year (about 34,,000m000 ft^3/day) of natural gas (methane). Assuming that anthracite coal has a density of 1,500 kg/m^3 (93 lb/ft^3) and the average total thickness of suitable coal is 50 ft, sequestration of one year's CO_2 production would utilize the coal under 1,380 acres.

To sequester the entire 72,000,000 tons of CO_2 generated over the proposed facilities' 50-year operating life would require 6.9 billion tons of in-place coal, which exceeds the total unrecoverable coal reserve in Schuylkill County (Section 3.3.3).

Over the entire fuel cycle (from production of the raw material in a coal mine or oil well through utilization of the fuel in a vehicle) and considering all greenhouse gases, production and delivery of liquid transportation fuels from coal has been estimated to result in about 80% more greenhouse-gas emissions than from production and delivery of conventional petroleum-derived fuels (Marano and Ciferno 2001, Williams and Larson 2003, Williams et al. 2006). However, recovery and sequestration of CO_2 at a CTL production facility (Section 5.1) could reduce greenhouse gas emissions from CTL fuel production to levels below conventional petroleum-derived fuel production (Marano and Ciferno 2001). Based on a conceptual analysis of potential CO_2 capture and sequestration at facilities that produce liquid fuels from coal using technologies similar to those included in the proposed project, it has been estimated that CO_2 sequestration could reduce total fuel-cycle greenhouse gas emissions to 8% more than from the conventional petroleum-derived fuel cycle (Williams et al. 2006). With technology advancements, future large-scale CTL facilities are expected to be able to achieve higher rates of CO_2 capture and sequestration (Larson and Tingjin 2003, Southern States Energy Board 2006), potentially resulting in life-cycle greenhouse-gas emissions that are lower than those resulting from use of conventional petroleum refineries that are not equipped for CO_2 capture and sequestration.

In estimating how increased use of CTL technology could affect total greenhouse gas emissions associated with liquid transportation fuels, DOE considered forecasts of the potential extent of CTL utilization in 2030. Using reference case assumptions, the Energy Information Administration (2006) has forecast that by 2030 U.S. CTL production will consume 94,000,000 tons of coal annually (5% of the nation's coal use) and produce the equivalent of 277,000,000 barrels of crude oil, supplying 2.75% of the nation's petroleum needs[3]. Based on this forecast and assuming the CTL fuel cycle generates 80% more greenhouse-gas emissions than production and delivery of conventional petroleum-derived fuels (Marano and Ciferno 2001, Williams and Larson 2003, Williams et al. 2006), the use of CTL technology for producing transportation fuels would cause the U.S. "petroleum" sector to release 2% more greenhouse gases in the year 2030 than if the same quantity of liquid fuel was produced from petroleum. If all CTL facilities employed carbon sequestration that reduced greenhouse-gas emissions from the CTL to about 8% more than the petroleum-derived liquid fuel cycle, the greenhouse-gas emission contribution of the U.S. "petroleum" sector in that same year would be about 0.2% higher than if the same quantity of liquid fuel was produced from petroleum. If fuel-cycle emissions from CTL technologies were

[3] On December 5, 2006, the Energy Information Administration made an early release of a portion of its *2007 Energy Outlook* (http://www.eia.doe.gov/oiaf/aeo/index.html, accessed December 7, 2006), including reference case projections for 2030, but no projections for other sets of assumptions. The reference case projections indicate 19% more CTL production in 2030 than was projected in the 2006 analysis. Resulting contributions to greenhouse gas emissions from the liquid fuels sector would be roughly 19% higher for the reference case than the values estimated based on 2006 projections. DOE expects to revise the final EIS to reflect the *2007 Energy Outlook* report, which is planned for release early in 2007.

reduced to 10% less than conventional petroleum technologies due to a combination of more efficient carbon capture and sequestration at CTL production facilities, increased capture of the methane released during coal mining, and other potential mitigation measures (Marano and Ciferno 2001), the greenhouse-gas emission contribution of the U.S. "petroleum" sector would be about 0.3% less than if the same quantity of liquid fuel was produced from petroleum.

Using high-range estimates of future oil prices (high oil prices would encourage more CTL production), the Energy Information Administration (2006) has forecast that in the year 2030 U.S. CTL production would consume 207,000,000 tons of coal (10% of the nation's coal use) and produce the equivalent of 617,000,000 barrels of crude oil, supplying 6.7% of the nation's petroleum needs. Based on this forecast and assuming the CTL fuel cycle generates 80% more greenhouse-gas emissions than production and delivery of conventional petroleum-derived fuels, expanded use of CTL technology to produce transportation fuels could cause the U.S. "petroleum" sector to release about 5% more greenhouse gas emissions than if the same quantity of fuel was produced from petroleum. However, carbon sequestration that reduced greenhouse-gas emissions from the CTL fuel cycle to about 8% more than the petroleum-derived liquid fuel cycle could reduce this greenhouse-gas emission increment to about 0.5% more than if the same quantity of liquid fuel was produced from petroleum. If fuel-cycle emissions from CTL technologies were reduced to 10% less than conventional petroleum technologies due to more efficient CO_2 capture and sequestration and other measures, as discussed above, the greenhouse-gas emission contribution of the U.S. "petroleum" sector would be about 0.7% less than if the same quantity of liquid fuel was produced from petroleum.

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APPENDIX F

PUBLIC COMMENTS ON THE SUPPLEMENT TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND RESPONSES

Received 1-23-07

Janice Bell * NEPA Document Manager
U.S. Department of Energy
National Energy Technology Laboratory
M/S 58-247A, P.O. Box 10940
Pittsburg, PA 15236

Robert J. Eckert Jr. BK2357
Box A
Bellefonte, PA 16823-0820
Friday, January 19, 2007

Re: Coal-To-Gas * John W. Rich Jr. / Not Pollutant New Resource

Dear Janice,

Good-day I was born & raised in coal country outside Pottsville, PA and 110% in favor of the proposed Coal-To-Oil Plant. John W. Rich Jr., President, WMPI PTY LLC, has done more benefit for the people of our Town, County, State which many of the knowledgable are aware. Our Country can and will understand J.W. Rich Jr.'s benefits for generations to come.

Lets look at the bi-product carbon-dioxide generated in the Coal-To-Gas Plant as yet another potential resource instead of a problem. By collecting and storing this gas it can be used as a resource and marketed to produce entrepreneurs.

Who can use carbon-dioxide? How about the orchards and farmers throughout the Country and world. Tree's or any green plants collect diluted amounts of carbon-dioxide as a fuel to grow and as bi-product turn it into oxygen in the process.

This bi-product carbon-dioxide may be able to start a new revolution in the vegetable/fruit industries when they realize how easy is is to spray this important gas/fuel to stimulate their crop growth whereby their bi-product oxygen will be helping to supply the world needs.

J.W. Rich Jr. is our resource, do not allow the minority disgruntled ruin our national influence and important employer.

SUP1

Coal Is King

Robert J Eckert Jr.

NOTE: For ease of cross-referencing between documents and other comments, comments on the Supplement to the Draft Environmental Impact Statement have been coded as SUP_-_. The first number identifies the chronological order in which the comments were received. The second number, if used, identifies the order of the comments within the letter.

SUP1 01/23/07
Robert J. Eckert, Jr.
BK2357
Box A
Bellefonte, PA 16823-0820

Comment SUP1

"Good-day I was born & raised in coal country outside Pottsville, PA and 110% in favor of the proposed Coal-to-Oil Plant. John W. Rich, Jr. President, WMPI PTY LLC, has done more benefit for the people of our Town, County, State which many of the knowledgable are aware. Our Country can and will understand J.W. Rich Jr.'s benefits for generations to come.

Lets look at the bi-product carbon-dioxide generated in the Coal-to-Gas Plant as yet another potential resource instead of a problem. By collecting and storing this gas it can be used as a resource and marketed to produce entrepreneurs.

Who can use carbon-dioxide? How about the orchards and farmers throughout the Country and world. Tree's or any green plants collect diluted amounts of carbon-dioxide as a fuel to grow and as bi-product turn it into oxygen in the process.

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J.W. Rich Jr. is our resource, do not allow the minority disgruntled ruin our national influence and important employer.

Coal is King

Response:

The comment has been noted. In order to be accurate, it should be noted that the industrial participant for the proposed project has informed DOE that sale of the CO_2 byproduct would not occur in the foreseeable future. Rather, CO_2 captured as part of the process would be vented to the atmosphere.

Received @ NETL 1/24/07

1-21-07

Dear Mrs. Bell,

I have recently read an article in my local newspaper. The News Clam, about the Gilberton Coal-to-Clean Fuels and Power Project. My letter is in response to that article. The amount of pollutants to be released by the plant is not reasonable. I understand industry is needed in our area and this plant will play a crucial role, but responsibility must be taken to reduce the pollutants. There is money to be made in this specific aspect of the coal industry. Why then, can't this money be reinvested into air filters and new and initiative ways to combat air pollutants? The Kyoto Protocol is being enforced in many other nations. The only way for this to happen in the U.S. is to start, plant by plant, and enforce strict air pollutant laws. The environment is a valuable thing to us all, something we all depend on. It is also something we must all care for.

Katie Weaver

SUP2

SUP2 01/25/07
Kallie Weaver
819 N. Washington Street
Shamokin, PA 17872

Comment SUP2

I have recently read an article in my local newspaper about the Gilberton Coal-to-Clean Fuels and Power Project. My letter is in response to that article. The amount of pullunts to be released by the plant is not reasonable. I understand industry is needed in our area and the plant will play a crucial role, but responsibility must be taken to reduce the pollunts. There is money to be made in this specific aspect of the coal industry. Why then, can't this money be reinvested into air filters and new and initiative ways to combat air pollunts? The Kyoto Protocol is being enforced in many other nations. The only way for this to happen in the U.S. is to start, plant by plant, and enforce strict air pollunt laws. The environment is a valuable thing to us all, something we all depend on. It is also something we must all care for.

Response:

The EIS has evaluated air emissions from the proposed project and concluded that air quality would not be degraded by the regulated pollutants, such as sulfur oxides and nitrogen oxides. Carbon dioxide is not a regulated pollutant, and is not a concern for local air quality. As a result, DOE's assessment of the potential impacts of this compound is based on the contribution of the proposed project to the global carbon dioxide budget, rather than a comparison to standards.

Received@NETL
1/25/07

Dear Ms. Janice Bell,

I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter. SUP3

Sincerely,

Debra and Andrew Uliony
138 Kwatasa Road
Shenandoah, PA
17976

SUP3 01/25/07
Debra and Andrew Ulicny
138 Swatara Road
Shenandoah, PA 17976

Comment SUP3

"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:

The comments have been noted. While the proposed project would concentrate the CO2 stream exiting the gas cleanup system, the industrial participant plans to vent this stream to the atmosphere. The project, as proposed to DOE, does not include the sequestration of carbon dioxide emissions. However, DOE's National Energy Technology Laboratory (NETL) manages a portfolio of laboratory and field research and development projects focused on technologies with potential for reducing greenhouse gas emissions and controlling global climate change. Most efforts focus on developing technologies to capture CO_2 from large stationary sources, such as power plants, and storing it in geologic sinks such as saline formations, unmineable coal seams, and depleted oil and gas fields. DOE is also researching methods to enhance carbon sequestration in terrestrial ecosystems. The control of fugitive methane emissions from coal mines and landfills is also addressed in the R&D program. The DOE Carbon Sequestration Program works directly to implement the President's Global Climate Change Initiative, as well as several National Energy Policy goals targeting the development of new technologies. DOE's Carbon Sequestration Program also supports the goals of the Framework Convention on Climate Change and other international collaborations to reduce greenhouse gas intensity and greenhouse gas emissions. The programmatic timeline is to demonstrate a portfolio of safe, cost effective greenhouse gas capture, storage, and mitigation technologies by 2012, leading to future deployment opportunities beyond 2012.

Received @ DEP 1/29/

Dear Ms. Janice Bell,

I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter.

SUP4

Sincerely,

Nancy Costa
224 N 2nd St.
Frackville PA
17931

SUP4 01/29/07
Nancy Costa
224 N. 2nd Street
Frackville, PA 17931

Comment SUP4

"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL
1/29/07

Dear Ms. Janice Bell,

I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter.

SUP5

Sincerely,

Joanne and Robert Berresford
15 Radio Station Rd.
Shenandoah, PA 17976

SUP5 01/29/07
Joanne and Robert Berresford
15 Radio Station Road
Shenandoah, PA 17976

Comment SUP5

"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL
1/23/07 1/29/07

I

Att: Janice L. Bell:

I have a few questions to ask about the Jack Reed Coal to Oil Plant.

I Since when do you or anyone else have the authority to establish level of tolerances for anyone? How dare you tell anyone how much polution they can endure.

II Do you want to buy my home? It will be worth less than it is now if this plant is built.

III Why doesn't the Department of Energy send some of your families to live here?

The polution from the Co-Gen Plants we have here now spreads for around 50 miles from where they are located. This was brought to the attention of the Dept. of Energy by the people that attended the face meetings in Shenandoah, Pa. and also Pottsville, Pa.

I have all the information about how building this plant will destroy the area around Shenandoah, Mahanoy City, Gilberton, Frackville Girardville, Ashland and Hometown just to mention a few.

over

SUP6

II

H.H.V. Are you people insane, or are you simply book smart and life dumb? I am totally against the construction of this plant. I also know the thousands of letters like mine, you will simply do with them as you please. (Waste basket) W. V. What ever happened to Liberty and Justice for All? It sure like this. Liberty and Justice for All, that can afford to pay for it.
As a Government of the People, By the People and for the People, you should listen to the voice of the People. They don't want this plant near here. Put it in your own backyard and see how much you like what you are forcing down our throats.

SUP6

1/23/07

III

#V What we need is another Erin Brockovich to bring you people to your knees, just the way you are doing to us. I guess when people lose their conscience nothing matters anymore because that is exactly what happened to the America I once served. The Germans tried this process sixty years ago and found out it doesn't work. Please don't tell me new improvements have been made since then. If they have been made, then you shouldn't have any objections to building this Plant where you live and not here.

SUP6

Ronald Yodis
123 S. White St
Shenandoah, Pa
17976-2374

SUP6 01/29/07
Ronald Yodis
123 S. White St.
Shenandoah, PA 17976-2374

Comment SUP6

I have a few questions to ask about the Jack Rich Coal to Oil Plant.

I Since when do you or anyone else have the authority to establish levels of tolerance for anyone? How dare you tell anyone how much pollution they can endure.

#II Do you want to buy my home? It will be worth less than it is now if this plant is built.

#III Why doesn't the Department of Energy send some of your families to live here?

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I have all the information about how building this plant will destroy the area around Shenandoah, Mahanoy City, Gilberton, Frackville, Girardsville, Ashland, and Hometown just to name a few.

IV Are you people insane, or are you simply book smart and life dumb? I am totally against the construction of this plant. I also know the thousands of letters like mine; you will simply do with them as you please (waste basket)

#V What ever happened to liberty and justice for all? It goes like this. Liberty and justice for all, that can afford to pay for it.

As a government of the people, by the people, and for the people, you should listen to the voice of the people. They don't want this plant near here. Put it in your own backyard and see how much you like what you are forcing down our throats.

#V What we need is another Erin Brockovich to bring you people to your knees, just the way you are doing to us. I guess when people lose their conscience nothing matters anymore because that is exactly what happened to the America I once served. The Germans tried this process sixty years ago and found out it doesn't work. Please don't tell me new improvements have been made since then. If they have been made, then you shouldn't have any objections to building this Plant where you live and not here.

Response:

The comments have been noted. The potential impacts of the proposed project, both individually and in combination with other nearby power plants, are quantified and discussed in final EIS Sections 4.1.2.2, 5.1.4, and 6.1.

DOE does not establish levels of tolerance to pollution. Rather, as noted in final EIS Section 7, if constructed, the project would operate according to Federal, state, and local laws and regulations. The proposed project would be subject to the requirements of air and water permits issued by the Pennsylvania Department of Environmental Protection and the Susquehanna River Basin Commission.

Rec'd @ NETL
1/29/07

Dear Ms. Janice Bell,

I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter.

SUP7

Sincerely,

Joseph M Hayes
Shenandoah, PA
17976

SUP7 1/29/07

Joseph M. Hayes
Shenandoah, PA 17976

Comment SUP7
"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL 1/29/07

Mary Noon
50 Oak Lane
Pottsville, PA 17901
Jan. 27, 2007

Dear Ms. Janice Bell,

I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter.

SUP8

Sincerely,
Mary C. Noon

SUP8 1/29/07
Mary Noon
50 Oak Lane
Pottsville, PA 17901

Comment SUP8
"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL
2/5/07

Dear Ms. Janice Bell,

I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter.

SUP9

Sincerely,

Nicole Ulicny
104 Cadwalader Circle
Exton PA 19341

SUP9 2/5/07
Nicole Ulicny
104 Cadwalader Circle
Exton, PA 19341

Comment SUP9

"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL
2/7/07

Dear Ms. Janice Bell,

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SUP10

Sincerely,

Stephen Ulicny
347 Hazle Street
Tamaqua, PA 18252

SUP10 2/7/07
Stephen Ulicny
347 Hazle Street
Tamaqua, PA 18252

Comment SUP10
"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL
2/7/07

Dear Ms. Janice Bell,

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SUP11

Sincerely,
Anne Ulicny
18 S. Emerick St.
Shenandoah, PA 17976

SUP11 2/7/07
Anne Ulicny
18 S. Emerick Street
Shenandoah, PA 17976

Comment SUP11

"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL
2/7/07

Dear Ms. Janice Bell,

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SUP12

Sincerely,
304 W Walnut Street
Valley View, PA 17983

SUP12 2/7/07
Michael Ulicny
309 W Walnut St
Valley View, PA 17983

Comment SUP12
"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL
2/7/07

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SUP13

Sincerely,

Mr. & Mrs. Robert Taylor
2 Radio Station Road
Shenandoah Pa., 17976

SUP13 2/7/07
Mr. and Mrs. Robert Taylor
2 Radio Station Road
Shenandoah, PA 17976

Comment SUP13

"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NETL 2/7/07

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SUP14

Sincerely,

Mr. Frank B Ulicny
411 Roosevelt Drive
Mahanoy City Pa. 17948

SUP14 2/7/07
Mr. Frank B. Ulicny
411 Roosevelt Drive
Mahanoy City, PA 17948

Comment SUP14

"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

Received @ NE
2/7/07

Dear Ms. Janice Bell,

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SUP15

Sincerely,

Pete Ulicny
18 S. EMERICK
SHENANDOAH, PA 17976

SUP15 2/7/07
Pete Ulicny
18 S. Emerick Street
Shenandoah, PA 17976

Comment SUP15

"I am writing to voice my concerns over the proposed coal to oil plant that is to be built in Schuylkill County. With the current information that is available on global warming, and the Staggering numbers given on the amount of carbon dioxide that would be released into our atmosphere, I strongly object to such a facility being built. Until there is a thoroughly researched plan to reduce/eliminate the carbon dioxide produced, I feel that the risks of such a plant outweigh the benefits. Thank you for your consideration in this matter."

Response:
See response to SUP3.

>>> "Rebekah Feeser" <rebekahfeeser@mac.com> 1/13/2007 9:09 AM
>>> Dear Ms. Bell,

I am appalled by this "omission," "error," or however it is being coined by the industry. Though as a committed citizen, mother, and professional residing in Pennsylvania, I am against ANY additional toxins being emitted into the environment, I am profoundly appalled by the significant difference between the originally stated "832,000 tons per year" and the actual "1,450,000 tons per year." This is outrageous and the sort of "mistake" that makes it difficult to believe any organization will have the best interests and health needs of those most impacted in mind. What might be the next "omission"? I am therefore even more opposed to the proposed Gilberton Coal-to-Clean Fuels and Power Project (DOE/EIS-0357D-S1). SUP16

Thank you for accepting and sharing my comment.

Sincerely,
Rebekah L. Feeser, Ph.D.

SUP16 1/13/07
Rebekah Feeser

Comment SUP16

"I am appalled by this "omission," "error," or however it is being coined by the industry. Though as a committed citizen, mother, and professional residing in Pennsylvania, I am against ANY additional toxins being emitted into the environment, I am profoundly appalled by the significant difference between the originally stated "832,000 tons per year" and the actual "1,450,000 tons per year." This is outrageous and the sort of "mistake" that makes it difficult to believe any organization will have the best interests and health needs of those most impacted in mind. What might be the next "omission"? I am therefore even more opposed to the proposed Gilberton Coal-to-Clean Fuels and Power Project (DOE/EIS-0357D-S1).

Thank you for accepting and sharing my comment."

.

Response:

The comment has been noted. Carbon dioxide is not a toxin, but rather was evaluated in the EIS from the standpoint of its effect on global climate change. A draft EIS is used to solicit public comments about the potential impacts of a proposed action and to develop accurate information needed to make an assessment. If significant new information is made available relative to environmental concerns, DOE may supplement an EIS to further the purposes of NEPA, in accordance with 40 CFR 1502.9(c)(2).

The following comments are submitted in response to the Supplemental Environmental Impact Statement (SEIS), which disclosed that significantly higher levels of CO2 will be produced by the proposed coal-to-oil plant in Morea, Pa.

In addition to the other harmful impacts of WMPI's proposed coal-to-oil plant, the revised projection of CO2 produced by this plant is unacceptably high. Approximately 2.4 million tons of CO2 would be released annually into the atmosphere throughout the plant's 50-year lifespan. The DOE's SEIS clearly states that none of the CO2 will be captured or sequestered underground. Of particular concern is the fact that the multiple process of the proposed coal-to-oil plant would produce 1.8 times or 80% more CO2 than if the culm were simply burned. In other words, the proposed plant is 80% less efficient than technology currently available in regards to the ratio of CO2 produced for the amount of culm burned.

SUP17-1

This news comes at a time when the world's scientific community has reached a consensus that increased levels of CO2 in the earth's atmosphere are a direct cause of global warming, or global climate change. If CO2 levels continue to rise unchecked, we know that the social and economic consequences on the earth's human population will be devastating. The trend in rising CO2 levels must be reversed. The time to act is now.

The U.S. Climate Action Partnership is a coalition of major U.S. companies including Alcoa, BP America, Caterpillar, Duke Energy, FPL Group, General Electric, Lehman Brothers, PG&E, PNM Resources and Dupont, along with leading environmental organizations including Environmental Defense, Natural Resources Defense Council, Pew Center on Global Climate Change and World Resources Institute. The Partnership recently issued "A Call for Action" report, calling on the federal government to create a national program to reduce significantly the greenhouse gas emissions in the U.S. The group is calling for the federal government to create a "mandatory, flexible climate change program." According to the report, "Each year we delay action to control emissions increases the risks of unavoidable consequences that could necessitate even steeper reductions in the future, at potentially greater economic cost and social disruption."

SUP17-2

The U.S. business community is asking for a national program to reduce greenhouse gas emissions. They want to plan for the future and believe U.S. businesses can successfully reduce greenhouse gas emissions while continuing to operate profitably. In addition, the Northeast and Mid-Atlantic states are pursuing the creation of a carbon cap and trade system. Such a solution seems so likely that some companies are beginning to factor in the cost of a cap and trade system in their budget projections.

The DOE has a responsibility to fund projects that implement technology like CO2 scrubbers to significantly reduce greenhouse gas emissions, and a responsibility NOT TO FUND projects like WMPI's proposed coal-to-oil plant, which would produce CO2 at a rate 80% higher than culm-burning cogeneration plants currently in existence. By providing federal funding for this proposed project, DOE will give WMPI an unfair competitive advantage over U.S. companies that are planning and budgeting for significant reduction of greenhouse gas emissions. Funding WMPI's project will, in effect, discourage companies from investing now in technology to reduce greenhouse gas emissions in the future.

SUP17-3

We respectfully urge DOE to take the no action alternative. Do not provide $100 milliion in federal funding to WMPI's proposed coal-to-oil plant. DOE should invest instead in projects that will help the U.S. to meet reduced levels of greenhouse gas emissions in the future.

Sincerely,

Helen Sluzis

Edward Sluzis
206 Roosevelt Drive (Morea)
Mahanoy City, PA 17948

SUP17 2/20/07

Helen and Edward Sluzis
206 Roosevelt Drive (Morea)
Mahanoy City, PA 17948

Comment SUP17-1

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Response:

The total amount of CO_2 emissions released by processing coal at the proposed coal-to-liquids plant and using the resulting liquid fuel in a vehicle would be essentially the same as would be released from burning the same coal in a conventional coal-fired power plant. The amount of CO_2 released is determined by the amount of carbon in the coal. It appears that the commenters have misinterpreted the discussion regarding CO_2 emissions in Section 6.1. The comparison that the comment refers to is between a coal-based fuel cycle and a petroleum-based fuel cycle rather than coal processed in a coal-to-liquids plant and a conventional coal plant. As discussed in Section 6.1, the coal-to-liquids fuel cycle (including all steps from mining the coal to using the liquid fuel in a vehicle) is estimated to produce 80% more CO_2 emissions than the conventional petroleum-based liquid fuel cycle (including all steps from the oil well to the vehicle).

Comment SUP17-2

“This news comes at a time when the world's scientific community has reached a consensus that increased levels of CO_2 in the earth's atmosphere are a direct cause of global warming, or global climate change. If CO_2 levels continue to rise unchecked, we know that the social and economic consequences on the earth's human population will be devastating. The trend in rising CO2 levels must be reversed. The time to act is now.

The U.S. Climate Action Partnership is a coalition of major U.S. companies including Alcoa, BP America, Caterpillar, Duke Energy, FPL Group, General Electric, Lehman Brothers, PG&E, PNM Resources and Dupont, along with leading environmental organizations including Environmental Defense, Natural Resources Defense Council, Pew Center on Global Climate Change and World Resources Institute. The Partnership recently issued "A Call for Action" report, calling on the federal government to create a national program to reduce significantly the greenhouse gas emissions in the U.S. The group is calling for the federal government to create a "mandatory, flexible climate change program." According to the report, "Each year we delay action to control emissions increases the risks of unavoidable consequences that could necessitate even steeper reductions in the future, at potentially greater economic cost and social disruption.

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Response:

At the time this final EIS is being issued, the recommendations of the United States Climate Action Partnership (contained in the cited report) have not been incorporated into U.S. law or policy. At present, carbon dioxide is not a regulated pollutant. As a result, there are no established limits on the emissions of this gas. The proposed project would incorporate CO_2 capture (concentrating the CO_2 stream exiting the gas cleanup system), which is the first step of carbon capture and storage/sequestration. Thus, the possibility would exist to add CO_2 storage/sequestration at a later time, as the necessary technology matures.

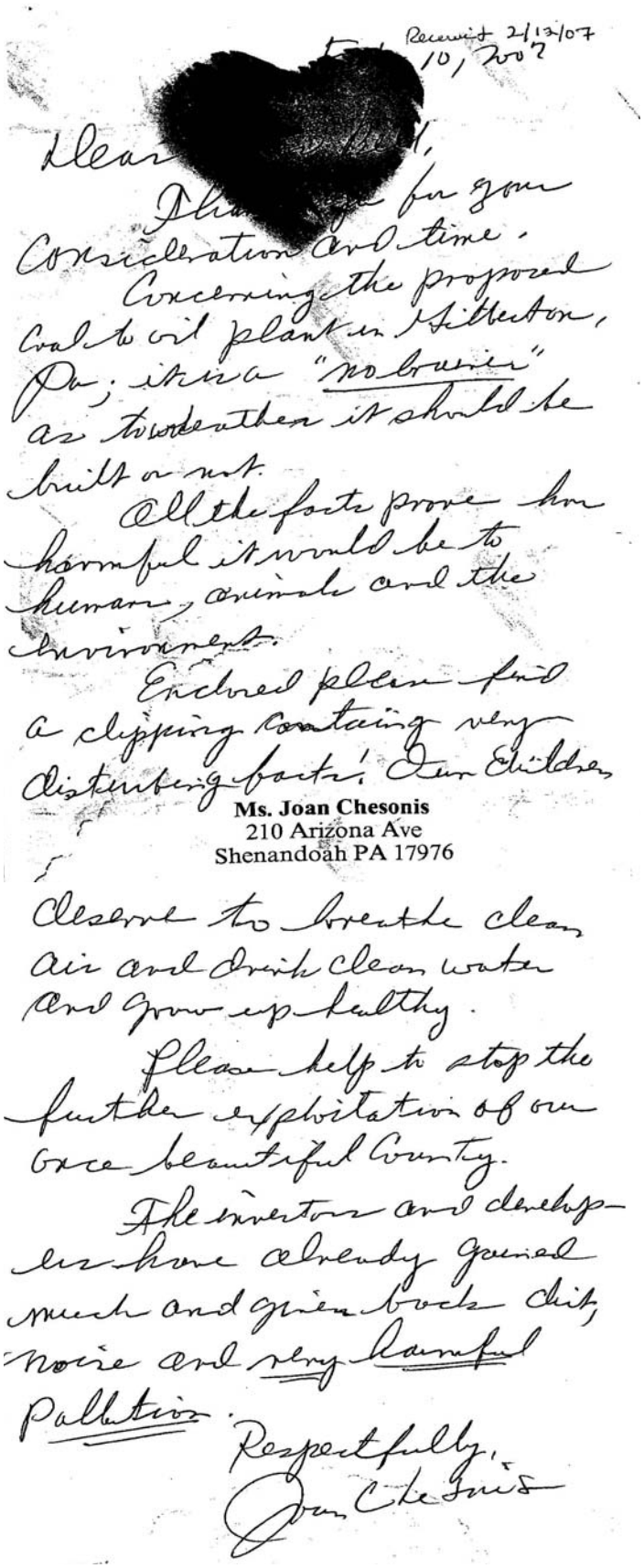
Comment SUP17-3

"The DOE has a responsibility to fund projects that implement technology like CO2 scrubbers to significantly reduce greenhouse gas emissions, and a responsibility NOT TO FUND projects like WMPI's proposed coal-to-oil plant, which would produce CO2 at a rate 80% higher than culm-burning cogeneration plants currently in existence. By providing federal funding for this proposed project, DOE will give WMPI an unfair competitive advantage over U.S. companies that are planning and budgeting for significant reduction of greenhouse gas emissions. Funding WMPI's project will, in effect, discourage companies from investing now in technology to reduce greenhouse gas emissions in the future.

We respectfully urge DOE to take the no action alternative. Do not provide $100 million in federal funding to WMPI's proposed coal-to-oil plant. DOE should invest instead in projects that will help the U.S. to meet reduced levels of greenhouse gas emissions in the future."

Response:

The comments have been noted. Also see the response to comment SUP17-1.



Received 2/13/07
10, 2007

Dear [redacted],

Thank you for your Consideration and time.

Concerning the proposed coal to oil plant in Pittston, Pa; it is a "no brainer" as to whether it should be built or not.

All the facts prove how harmful it would be to human, animals and the environment.

Enclosed please find a clipping containing very disturbing facts. Our Children

Ms. Joan Chesonis
210 Arizona Ave
Shenandoah PA 17976

deserve to breathe clean air and drink clean water and grow up healthy.

Please help to stop the further exploitation of our once beautiful County.

The investors and developers have already gained much and given back dirt, noise and very harmful Pollution.

Respectfully,
Joan Chesonis

SUP18

Study: Low-level toxicants harm developing brains

BY JAMIE TALAN
NEWSDAY

Low levels of mercury and lead exposure can damage developing brain cells — a finding that might help explain how these toxicants can lead to a host of mental and medical problems, a new study said.

"There is a huge problem in toxicology," said Mark Noble, a professor of biomedical genetics and neurobiology at the University of Rochester in New York and senior author of the study in the journal PLoS Biology. "There are 80,000 to 150,000 environmental toxicants about which we know nothing. Nobody knows how to screen for them or even where to start."

His study could be a major step in identifying methods of prevention and treatment.

Noble and his colleagues conducted their work in the laboratory, where they subjected so-called glial progenitor stem cells in the brain to low levels of lead and mercury. They found that these brain cells stopped dividing. They simply shut down. The mercury levels previously were thought to be safe in humans, Noble said. "It turns out they are not."

"These levels — 5 to 6 parts per billion — have adverse effects on these progenitor stem cells," he said.

These cells are crucial in building the brain during infancy and beyond.

Noble said studies have shown that between 300,000 and 600,000 babies are born each year with fetal mercury levels in cord blood that are 5 to 6 parts per billion.

"This needs to be taken very seriously."
Mark Noble
Professor of biomedical genetics and neurobiology

The researchers found that progenitor stem cells — the brain's support cells that carry out a number of key housekeeping functions — are extraordinarily vulnerable to low levels of toxicants. In the test tube, as many as 25 percent of the progenitor cells obtained from rats shut down when exposed to the low levels of lead or mercury.

When the researchers looked at the cellular pathways affected by these exposures, they found the toxicants were disrupting cell function by increasing oxidative stress. All the toxicants they've studied led to the same oxidative stress-producing pathway. If similar processes are taking place in the developing brain of the fetus and child, "this could certainly have adverse effects," Noble said.

TAKEN FROM POTTSVILLE (PA) REPUBLICAN & HERALD
FRIDAY FEBRUARY 9-2007

SUP18 2/12/07
Joan Chesonis
210 Arizona Avenue
Shenandoah, PA 17976-1204

Comment SUP18

"Thank you for your consideration and time. Concerning the proposed coal oil plant in Gilberton, PA; it is a "no-brainer" as to whether it should be built or not. All the facts prove how harmful it would be to humans, animals, and the environment. Enclosed please find a clipping containing very disturbing facts! Our children deserve to breathe clean air and drink clean water and grow up healthy. Please help to stop the further exploitation of our once beautiful county. The investors and developers have already gained much and given back dirt, noise, and very harmful pollution.

(*This letter was accompanied by a newspaper clipping that reported that low levels of mercury and lead can damage developing brain cells.*)

Response:

The comments have been noted. The potential impacts on air quality of the proposed project, in combination with other projects/other power plants in the Schuylkill County area, were modeled in EIS Section 4.1.2.2.

PDF file

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

IN REPLY REFER TO:

TAKE PRIDE IN AMERICA

February 20, 2007

ER 07/45

Janice L. Bell
NEPA Document Manager
U.S. Department of Energy
National Energy Technology Laboratory
M/S 58-247A, P.O. Box 10940
Pittsburgh, PA 15236

Dear Ms. Bell:

The Department of the Interior (Department) has no comment on the U.S. Department of Energy's Draft Supplemental Environmental Impact Statement for the Gilberton Coal to Clean Power Project located in Schuykill County, Pennsylvania. SUP19

Thank you for the opportunity for comment.

Sincerely,

Michael T. Chezik

Michael T. Chezik
Regional Environmental Officer

SUP19 2/20/07
Michael Chezik
Office of Environmental Policy and Compliance
U.S. Department of the Interior
Philadelphia, PA 19106-2904

Comment SUP19
"The Department of Interior (Department) has no comment on the U.S. Department of Energy's Draft Supplemental Environmental Impact Statement for the Gilberton Coal to Clean Power Project located in Schuylkill County, Pennsylvania."

Response:
Your letter has been noted.

Ms. Janice L. Bell
National Environmental Policy Act Document Mgr.
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochrans Mill Road
P.O. Box 10940
Pittsburgh, PA 15236-0940

RE: Comments on Supplement to the Draft EIS for the Gilberton Coal-To-Clean Fuels and Power Project, Gilberton PA

February 27, 2007

Dear Ms. Bell,

My wife and I are a part of NRDC's 35,000 non profit statewide membership organization. We are both avidly commited as no nonsense participants in protecting the global ecosystem coupled with preservation of our natural resources. This is not only our mission and goal in life, it is our mission and goal to save our life. So in these endeavors we mean business.

In pursuit of my research , allow me to jump around here a bit in making my comments concerning the SDEIS.

Section 4 Environmental Consequences
Page 2 - RE: Global Climate Change

In this section they cavalierly include nitrous oxide (N2O) as an unimportant part of Greenhouse gas emissions which include water vapor, CO2 , methane , nitrous oxide (N20), Ozone and several chlorofluorocarbons.

Nowhere in the whole text of the DEIS do you address the ramifications of nitrous oxide emissions from the CO GEN Plant which will definitely be an integral part of the WMPI PTY, LLC proposed FISCHER TROPSCH (F-T) system.

"N2O has a [Global Warming Potential] 296 times that of CO2. Because of its long lifetime (about 120 years) it can reach the upper atmosphere, depleting the concentration of stratospheric ozone, an important filter of UV radiation. The WMPI Power Plant generates from two circulating fluidized bed boilers.CFB boilers - due to temperature issues - convert a lot of the nitrogen emissions to N2O, rather than NOx. N2O is a potent greenhouse gas and when you convert the potency to CO2-equivalents, it shows that CFB burners release 15% more greenhouse gas emissions than normal coal burners (conventional or IGCC). This is documented in a May 2003 report by the National Coal Council titled "Coal-Related Greenhouse Gas Management Issues." Akin to Mercury emissions ,Nitrous oxide also targets the brain , with the end stage resulting in severe brain damage and death.

SUP20-1

Section 4.2 POLLUTION PREVENTION AND MITIGATION MEASURES

Geological sequestration is a controversial and a largely untested idea , so since this technology presently will not be a viable or safe option during the demonstration period, please don't rely on this area to put into practice your experiments.

SUP20-2

We the people of Schuylkill County resent the fact that we, our children & our grandchildren will be used as guinea pigs for the benefit of outside corporations with hostile ambitions promoting economic growth by hyping bogus, pie in the sky independent energy ventures, which only allows the rich to further enrich just a few people in an industry that profits at the expense of public health, if indeed it profits anyone at all.

It is a world renowned fact that any enterprise associated with the generation of fuels and dirty energy will inflict damage , illness and death on the community, its inhabitants and its natural environment no matter how safe Government lobbyists using influence tactics proclaim it to be.

SUP20-3

Using Schuylkill county as a site for sequestration of CO2 into the rock strata is outlandish and out of the question. This area hosts over 37 fresh water surface reservoirs (supplying the needs of over 175,000 Schuylkill County residents) fed by springs pumped from underground aquifers. Extracting coal bed methane by pumping water from the coal beds which desorbs the methane and replacing this displaced water with CO2 would negatively impact drinking water aquifers by contamination.

SUP20-4

CO2 is buoyant underground, easily causing leakage problems WHICH CAN MIGRATE through the cracks and faults in the earth , pooling in unexpected places. Sequestration of CO2 can trigger earthquakes-SOURCE: U.S. GEOLOGICAL SURVEY Since CO2 is an asphyxiant it can knock a person out in a breath or two, again end stage would be death by suffocation.

SOURCE "Any time you inject" Bill Evans... At Mammoth: Kevin Coughlin, "Death of skier Points to Invisible Danger," Newark Star Ledger. Lake Nyos Cameroon, 1700 villagers asphyxiated.

SUP20-5

Released methane coupled with radon could leak into home basements & when you get around to lighting a cigar or the wood burner, the spark can set off a methane explosion.

Mahanoy Valley, Schuylkill County is honeycombed with hundreds of old mines giving credence to the scenario described above. Tampering with all these life giving forces violates the universal laws of God and nature. This is an industry that would put our grandchildren and the elderly on the endangered species list via a lethal environmental illness.

SUP20-6

Another scenario which comes to mind brings extensive rail transportation of captured CO2 and/or DIESEL FUEL into the site of destination would require a need for a state of the art rail system

Off the top of my head I have knowledge of only two rail systems to handle the heavily trafficked DIESEL FUEL and whatever else etc. hauling routes.

Of the two (Traditional Rails or Ribbon Rails), which would be more feasible, safer?

Ribbon Rails can handle far more weight than Traditional Rails. Ribbon Rails are welded together into a single seamless line of steel.

Ribbon Rails snap in the winter like a cheap plastic toy from the cold, they turn wiggly in the summer when heat causes the steel to expand, above flaws are reasons for numerous derailments and explosions from ethanol transportation trains.

Traditional rails are bolted together to give steel room to expand and contract but are not economically practicable. The need for a state of the art rail system is imminent, cost $3,000,000 per mile.

SUP20-7

Will evacuation and emergency response plans be in place and workable in all municipalities and boroughs throughout the County and State before any rail shipments of DIESEL FUEL, CO2, NAPTHA, or possible CO2 polishing CATALYSTS for purifying carbon dioxide before sequestration and any other unknown toxic chemicals are ready to roll.

Does the short line rail system (READING & BLUE MTN.) have sufficient liability insurance to cover a catastrophic event possibility on the 150 mile trek?

Will there be the necessary emergency responders and volunteer fire cos. throughout the County and State be up and ready to respond with state of the art equipment, training and evacuation shelters in light of a possible rail event ?

SUP20-8

There's nothing romantic about building chemical plants smack in the middle of residential communities. Wouldn't you agree that safety of human lives should trump Wall Street economics. In a radius of 15 miles surrounding this proposed plant we have a residential population of over 100,000 people.

SUP20-9

6-1 AIR QUALITY

Global warming is known to cause sudden heat waves- CO2 and other toxic emissions thicken the ozone inversion layer,case example: 35,000 deaths contributed to heat wave in EUROPE 2005.

A dangerous inversion layer now exists in the Schuylkill county area ranging from Ravine to McAdoo Pa. Most noticeable during hot summer months, summer of 2006 heat wave bordered on near suffocation.

Is our state and federal government willing to victimize and sacrifice the safety and well being of its citizens for financial opportunity - the environmental and socio-economic aftermath of liquid fuel production and refining will leave a negative impact that will atomize health & property values in Schuylkill and nearby counties, stigmatizing this area nationwide as an energy zone that will initiate low level ozone formation.

Schuylkill County will become a toxic mercury, ozone hot spot, property values will plunge, no one will want or desire to live here. The entire area will become off limits, those who remain will be forced into resettlement but not be able to relocate because they won't be able to sell their homes for a respectable price and be able to afford to buy elsewhere at comparative prices so they could enjoy the same comforts they had before all this nonsense began.

SUP20-10

I believe the United States of America is the greatest nation on Earth. People who are in this country have an incredible amount of opportunities and blessings. But some people have taken unfair advantage of America's quaint villages, natural resources and tolerance, to promote economic growth with hostile ambitions which allows the rich to further enrich just a few people in an industry that profits at the expense of public health .

I am for energy independence via energy conservation, cutting edge fuel efficient technology for motor vehicles, wind, solar energy and methane digesters, the answer to regulating sewer sludge. I am for progress offering more jobs and a healthier safer environment than their antiquated unsustainable smoke stack technology counterparts. I am for protecting our National Security and more so the security of my birth right county.

The technology exists to build cars, minivans, and SUVs that are just as powerful and safe as vehicles on the road today, but get 40 miles per gallon (mpg) or more. Better transmissions and engines, more aerodynamic designs, and stronger yet lighter material for chassis and bodies can cost-effectively increase the average fuel economy of today's automotive fleet from 24 mpg to 40 mpg over 10 years. This would be equivalent to taking 44 million cars off the road-and it would save individual drivers thousands of dollars in fuel costs over the life of a vehicle.

SUP20-11

SOURCE: UNION OF CONCERNED SCIENTISTS.
Citizens and scientists for environmental solutions

All said and done I rest my case.

Joseph M. Arcuri
Frackville Pa.
National Resources Defense Council
N.R.D.C. Member, Pennsylvania Chapter

SUP20 2/27/07
Joseph M. Arcuri
Frackville, PA

Comment SUP20-1

"In this section they cavalierly include nitrous oxide (N_2O) as an unimportant part of Greenhouse gas emissions which include water vapor, CO_2, methane, nitrous oxide (N20), Ozone and several chlorofluorocarbons.

Nowhere in the whole text of the DEIS do you address the ramifications of nitrous oxide emissions from the CO GEN Plant which will definitely be an integral part of the WMPI PTY, LLC proposed FISCHER TROPSCH (F-T) system.

" N_2O has a [Global Warming Potential] 296 times that of CO_2. Because of its long lifetime (about 120 years) it can reach the upper atmosphere, depleting the concentration of stratospheric ozone, an important filter of UV radiation. The WMPI Power Plant generates from two circulating fluidized bed boilers. CFB boilers - due to temperature issues - convert a lot of the nitrogen emissions to N_2O, rather than NO_x. N_2O is a potent greenhouse gas and when you convert the potency to CO_2-equivalents, it shows that CFB burners release 15% more greenhouse gas emissions than normal coal burners (conventional or IGCC). This is documented in a May 2003 report by the National Coal Council titled "Coal-Related Greenhouse Gas Management Issues."
Akin to Mercury emissions, Nitrous oxide also targets the brain, with the end stage resulting in severe brain damage and death."

Response:

The commenter is correct that the DEIS did not specifically discuss the potential emission of nitrous oxide (N_2O) from the proposed facilities.

As discussed in the report cited by the commenter (National Coal Council 2003), increases in N_2O emissions contribute to depletion of stratospheric ozone, which is an important filter of ultraviolet radiation. Also, N_2O is considered to be a more potent greenhouse gas than CO_2. N_2O emissions are generated by fluidized bed combustion of coal, the technology currently used at the existing Gilberton power plant. However, because N_2O toxicity is known to occur only at much higher concentrations than would be found in ambient air, it is not considered to be a human health concern.

The National Coal Council (2003) estimated that N_2O emissions generated from coal combustion account for approximately 2% of the known global sources of N_2O emissions. Further, the release of N_2O emissions from fluidized bed combustion (such as that currently being used at the existing Gilberton power plant) is the result of combustion within a particular temperature range. On the other hand, gasification systems, such as the IGCC system that would be used at the proposed facilities, operate under different conditions, and as a result, produce much less N_2O emissions.

Marano and Ciferno (2001) estimated the greenhouse-gas emissions from Fischer-Tropsch production, using coal from several different U.S. sources to produce several different types of liquid fuel. Marano and Ciferno (2001) assumed the global warming potential of N_2O to be 310 times that of CO_2 (this is the estimated potency for a time horizon of 100 years). Their estimates indicate that the N_2O emissions released by a facility such as the proposed project would add only 0.1% to 0.2% to the greenhouse gas impact from that facility's CO_2 releases.

Also, Marano and Ciferno (2001) calculated methane emissions from the Fischer-Tropsch process. For a 100-year time horizon, methane is estimated to be about 21 times more potent as a greenhouse gas than CO_2. Assuming this potency value, methane emissions were estimated to be 0.2% to 0.3% of the greenhouse gas contribution from CO_2 releases from a facility employing Fischer-Tropsch technology like the proposed project.

Applying these percentages of N_2O and methane emissions to the estimated CO_2 emissions of the proposed facilities (2,282,000 tons per year of CO_2), combined N_2O and methane emissions could add up to about 10,000 tons per year of CO_2-equivalents. (For information on the emission of water vapor, see the response to comment SUP23-4.)

It should be noted that other than sharing some infrastructure and beneficiation facilities, the existing Gilberton Power Plant would not be an integral part of the action as proposed to DOE. The two power plants would operate independently. However, emissions from the Gilberton Power Plant are included in the current global greenhouse gas inventory to which the proposed action would contribute. The cumulative impacts on local air quality from the proposed project, the existing Gilberton power plant, and five other existing power plants within approximately 20 miles of the proposed facilities have been modeled and are discussed in Section 6.1.

Reference: National Coal Council. 2003. Coal-Related Greenhouse Gas Management Issues. May.

Comment SUP20-2

"Geological sequestration is a controversial and a largely untested idea, so since this technology presently will not be a viable or safe option during the demonstration period, please don't rely on this area to put into practice your experiments."

Response:

While the possibility of geologic sequestration of CO_2 generated by the proposed project is discussed in Section 5.1.4, Commercial Operation, it has not been proposed by the industrial participant, and is, therefore, not part of the proposed project.

Comment SUP20-3

"We the people of Schuylkill County resent the fact that we, our children & our grandchildren will be used as guinea pigs for the benefit of outside corporations with hostile ambitions promoting economic growth by hyping bogus, pie in the sky independent energy ventures, which only allows the rich to further enrich just a few people in an industry that profits at the expense of public health, if indeed it profits anyone at all.

It is a world renowned fact that any enterprise associated with the generation of fuels and dirty energy will inflict damage, illness and death on the community, its inhabitants and its natural environment no matter how safe Government lobbyists using influence tactics proclaim it to be."

Response:

The comment has been noted.

Comment SUP20-4

"Using Schuylkill county as a site for sequestration of CO_2 into the rock strata is outlandish and out of the question. This area hosts over 37 fresh water surface reservoirs (supplying the needs of over 175,000 Schuylkill County residents) fed by springs pumped from underground aquifers. Extracting coal bed methane by pumping water from the coal beds which desorbs the methane and replacing this displaced water with CO_2 would negatively impact drinking water aquifers by contamination."

Response:

As discussed in Section 5.1.4, contamination of water supplies is recognized as one of the potential environmental impacts that might result from geologic sequestration of CO_2. However, the

surface reservoirs that supply water to most Schuylkill County residents are in upland areas that are both uphill and hydrologically upgradient from the locations where CO_2 might be injected or where water pumped from coal beds would be discharged. Furthermore, an Environmental Protection Agency study concluded that injection of fluids during coal bed methane production has little or no potential to cause contamination of drinking-water aquifers (EPA 2004). Thus, the potential for impacts to water supply reservoirs would be very low. In addition, note that sequestration of CO_2 is not part of the proposed project.

Reference: EPA 2004. Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs. EPA-816-R-04-003. Office of Groundwater and Drinking Water, Washington, DC. June.

Comment SUP20-5

"CO_2 is buoyant underground, easily causing leakage problems WHICH CAN MIGRATE through the cracks and faults in the earth, pooling in unexpected places.
Sequestration of CO_2 can trigger earthquakes-SOURCE: U.S. GEOLOGICAL SURVEY
Since CO_2 is an asphyxiant it can knock a person out in a breath or two, again end stage would be death by suffocation.
SOURCE "Any time you inject" Bill Evans... At Mammoth: Kevin Coughlin, "Death of skier Points to Invisible Danger," Newark Star Ledger.
Lake Nyos Cameroon, 1700 villagers asphyxiated."

Response:

Geologic sequestration of CO_2 is not a part of the proposed project. However, DOE is actively engaged in research and development on geologic carbon sequestration through its separate Carbon Sequestration Program, with the aim of resolving engineering and environmental issues associated with these technologies, such as concerns about potential for leakage and the potential to trigger seismic activity. Note, however, that (as discussed in Section 5.1.4), extensive industrial experience with the safe underground storage of natural gas supports confidence in the safety of engineered underground storage of CO_2.

SUP20-6

"Released methane coupled with radon could leak into home basements & when you get around to lighting a cigar or the wood burner, the spark can set off a methane explosion.

Mahanoy Valley, Schuylkill County is honeycombed with hundreds of old mines giving credence to the scenario described above. Tampering with all these life giving forces violates the universal laws of God and nature. This is an industry that would put our grandchildren and the elderly on the endangered species list via a lethal environmental illness."

Response:

Coal beds with complex geologic structure or where underground coal mining has occurred in the past are not suitable for geologic sequestration of CO_2. As discussed in Section 5.1.4, the potential sites for sequestration in Schuylkill County are in deep coal beds that have never been mined. If recovery of methane from coal beds were done in connection with CO_2 sequestration, it is expected that the capture of methane would be highly effective because it would be done using the same conventional gas-production technology that has been used routinely for decades by the natural gas industry. Because of the efficiency of this technology, leakage should be minimized. Note that coal bed methane production was first initiated as a safety measure because it can reduce the explosion hazard in underground coal mines (EPA 2004). In addition, it should be noted that sequestration of CO_2 is not part of the proposed project.

SUP20-7

"Another scenario which comes to mind brings extensive rail transportation of captured CO_2 and/or DIESEL FUEL into the site of destination would require a need for a state of the art rail system

Off the top of my head I have knowledge of only two rail systems to handle the heavily trafficked DIESEL FUEL and whatever else etc. hauling routes.

Of the two (Traditional Rails or Ribbon Rails), which would be more feasible, safer?

Ribbon Rails can handle far more weight than Traditional Rails. Ribbon Rails are welded together into a single seamless line of steel.

Ribbon Rails snap in the winter like a cheap plastic toy from the cold, they turn wiggly in the summer when heat causes the steel to expand, above flaws are reasons for numerous derailments and explosions from ethanol transportation trains.

Traditional rails are bolted together to give steel room to expand and contract but are not economically practicable. The need for a state of the art rail system is imminent, cost $3,000,000 per mile."

Response:

The proposed action does not involve the transport of CO_2, but it does include the transport of diesel fuel product by rail. There are no plans for construction of new rail lines in support of the proposed project. Jointed rail (traditional rail) is used on lightly traveled rail lines where high speeds and heavy traffic are not needed. Continuous welded rail (ribbon rail) is used on mainlines that experience heavy traffic and/or high speeds. Jointed rail is less expensive, but requires more maintenance than continuous rail. Continuous welded rail is used on heavily traveled lines because of its lower maintenance costs. As the commenter notes, continuous welded rail is most subject to failure at very high or very low ambient temperatures. Regardless of whether jointed rail or continuous welded rail is used, rail line safety is assured by regular inspection and by operating trains at speeds that are consistent with the quality of the track.

SUP20-8

"Will evacuation and emergency response plans be in place and workable in all municipalities and boroughs throughout the County and State before any rail shipments of DIESEL FUEL, CO_2, NAPTHA, or possible CO_2 polishing CATALYSTS for purifying carbon dioxide before sequestration and any other unknown toxic chemicals are ready to roll.

Does the short line rail system (READING & BLUE MTN.) have sufficient liability insurance to cover a catastrophic event possibility on the 150 mile trek?

Will there be the necessary emergency responders and volunteer fire cos. throughout the County and State be up and ready to respond with state of the art equipment, training and evacuation shelters in light of a possible rail event?"

Response:

Evacuation and emergency response plans are described in revised Section 4.1.9.1. The Schuylkill County Emergency Management Agency (SCEMA) is responsible for emergency response planning in Schuylkill County. SCEMA, in conjunction with the Pennsylvania Emergency Management Agency (PEMA), is in the process of developing a hazardous mitigation plan for Schuylkill County. The plan will cover the hazards which are most likely to affect the county and pose a threat to its inhabitants, including hazardous materials, transportation, and wildfires (for additional information, see SCEMA's web site at http://www.scema.org/ps/hazplan.htm). Similarly,

the other counties and municipalities, along the rail line would be responsible for working with PEMA to ensure that emergency response and evacuation plans are in place.
The Pennsylvania Public Utility Commission's (PUC) Rail Safety Division is responsible for compliance with PUC Railroad Regulations and Federal Railroad Administration Regulations as they relate to track, motive power and equipment, hazardous material, and operating practices (http://www.puc.state.pa.us/transport/railsafe/railsafe_index.aspx). Specifically, the Rail Safety Division enforces regulations concerning track safety standards, freight car safety standards, and operating rules promulgated by the Federal Railroad Administration (49 CFR Parts 213, 215, and 217) pursuant to an agreement under the provision of the Federal Railroad Safety Act of 1970 (45 U.S.C. §§421). Therefore, the Rail Safety Division would be responsible for working with the rail operator to ensure the safety of increased rail usage associated with the proposed project and to ensure that the rail operator met state and federal requirements for liability insurance.

SUP20-9

"There's nothing romantic about building chemical plants smack in the middle of residential communities. Wouldn't you agree that safety of human lives should trump Wall Street economics. In a radius of 15 miles surrounding this proposed plant we have a residential population of over 100,000 people."

Response:

The potential effects of construction and operation of the proposed facilities on human health and safety are discussed in Section 4.1.9 and 4.1.10. These analyses include a consideration of public health effects of air emissions, hazardous chemicals, on-site and off-site accidents, worker safety, electromagnetic fields, noise, and intentional destructive acts. The impacts are considered to be small or controllable by implementation of Risk Management Plans, Emergency Response Programs, and Occupational Safety and Health Programs.

SUP20-10

"6-1 AIR QUALITY

Global warming is known to cause sudden heat waves- CO_2 and other toxic emissions thicken the ozone inversion layer, case example: 35,000 deaths contributed to heat wave in EUROPE 2005. A dangerous inversion layer now exists in the Schuylkill county area ranging from Ravine to McAdoo Pa. Most noticeable during hot summer months, summer of 2006 heat wave bordered on near suffocation.

Is our state and federal government willing to victimize and sacrifice the safety and well being of its citizens for financial opportunity - the environmental and socio-economic aftermath of liquid fuel production and refining will leave a negative impact that will atomize health & property values in Schuylkill and nearby counties, stigmatizing this area nationwide as an energy zone that will initiate low level ozone formation.

Schuylkill County will become a toxic mercury, ozone hot spot, property values will plunge, no one will want or desire to live here. The entire area will become off limits, those who remain will be forced into resettlement but not be able to relocate because they won't be able to sell their homes for a respectable price and be able to afford to buy elsewhere at comparative prices so they could enjoy the same comforts they had before all this nonsense began."

Response:

Statistically, global warming is suspected of enhancing the frequency and intensity of heat waves, but the amount that CO_2 and other emissions would contribute to a given heat wave is not

certain. Greenhouse emissions act gradually to add concentrations to the atmosphere globally and operate over very long time periods.

Inversion layers are associated with another phenomenon. Normally, the temperature is warmer at the earth's surface and decreases to the top of the troposphere (at an altitude of about 35,000 ft). However, during late night and early morning hours, certain geographical areas such as Schuylkill County may be more prone to the development of inversion layers (so called because the temperature increases with height rather than the customary decrease with height). Meteorological conditions associated with inversions often include very weak larger-scale winds and stable temperature structure in which the lowest 100 ft to 3,000 ft of the atmosphere above the earth's surface decouples from the atmosphere above it and results in limited vertical mixing of the atmosphere and increased concentrations of pollutants from air emissions. Topographic conditions that contribute to increased concentrations of pollutants include a ridge-and-valley structures that tend to trap pollutants horizontally.

Ozone, however, is formed as a secondary pollutant from photochemical reactions involving air emissions of volatile organic compounds and oxides of nitrogen during periods of strong sunlight, which occurs during non-inversion conditions. During the late night and early morning hours when inversion layers form, most of the ozone is dissipated due to the absence of sunlight, which causes the photochemical reactions to reverse, leaving only a small elevated ozone layer.

The potential air quality impacts of the proposed project are discussed in Sections 4.1.2.2 and 6.1. These sections present data to demonstrate that air emissions from the proposed project, both individually and in combination with six other nearby power plants, are not expected to degrade local air quality. The air dispersion modeling conducted for the potential air quality impacts of pollutants such as SO_2, NO_x, and PM used 42 meteorological conditions, including very conservative conditions (forming an upper-bound) such as inversion conditions.

SUP20-11

“I believe the United States of America is the greatest nation on Earth. People who are in this country have an incredible amount of opportunities and blessings. But some people have taken unfair advantage of America's quaint villages, natural resources and tolerance, to promote economic growth with hostile ambitions which allows the rich to further enrich just a few people in an industry that profits at the expense of public health.

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The technology exists to build cars, minivans, and SUVs that are just as powerful and safe as vehicles on the road today, but get 40 miles per gallon (mpg) or more. Better transmissions and engines, more aerodynamic designs, and stronger yet lighter material for chassis and bodies can cost-effectively increase the average fuel economy of today's automotive fleet from 24 mpg to 40 mpg over 10 years. This would be equivalent to taking 44 million cars off the road-and it would save individual drivers thousands of dollars in fuel costs over the life of a vehicle.”

Response:

The comments have been noted.

Comments on Draft Environmental Impact Statement
(DOE/EIS-0357D-S1)

for

Gilberton, Pennsylvania Coal-to-Liquids Project

API appreciates the opportunity to comment on the Department of Energy's (DOE) draft Environmental Impact Statement (DEIS) for the proposed Coal-to-Liquids (CTL) Project in Gilberton, Pennsylvania. API is a nationwide, not-for-profit trade association representing nearly 400 member companies engaged in all aspects of the oil and gas industry, including exploration and production, transportation, refining, distribution and marketing. API's member companies are interested in - and in some cases actively pursuing or participating in - carbon capture and storage projects. Given that the final EIS could set precedents for reviews of future projects, API and its members have a strong interest in the DEIS. We offer the following comments on the CO_2 geo-sequestration (CGS) statements contained in the Draft Environmental Impact Statement (DEIS)

1. DOE rejected CGS as a CO_2 emissions mitigation measure stating that CGS "is not a reasonable option because sequestration technology is not sufficiently mature to be implemented at production scale during the demonstration period for the proposed facilities" (page 4). However, in support of this conclusion, DOE cites its own white paper "CO_2 capture and storage in geologic formations" done in January of 2002 even though the paper only outlines DOE's own research program. SUP21-1

2. The statement in DEIS Section 4.2 that CGS "is not a reasonable option……not sufficiently mature…….at a production scale" appears to be focused on the storage or sequestration technology (as opposed to the CO_2 capture technology) and does not recognize that: SUP21-2

    a. There are currently ongoing industrial-scale, commercial storage projects, namely the offshore Sleipner natural gas processing project in Norway which has been injecting 1 million tonnes per year since 1996, the In Salah natural gas project in Algeria, which has been injecting about 1.2 million tonnes per year since 2004, and Snohvit LNG project which will soon start operation.

    b. The IPCC Special Report on Carbon Capture and Storage classifies all of the CCS technologies needed in the Gilberton CTL project as at least "Economically feasible under specific conditions" (page 18, Table TS.1), meaning that "the technology is well understood".

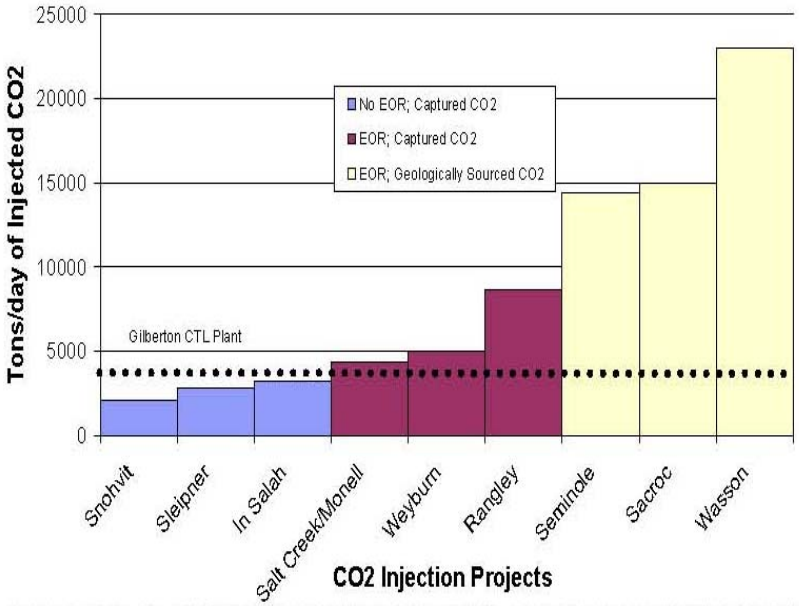
CCS component	CCS technology	Research phase [a]	Demonstration phase [b]	Economically feasible under specific conditions [c]	Mature market [d]
Capture	Post-combustion			X	
	Pre-combustion			X	
	Oxyfuel combustion		X		
	Industrial separation (natural gas processing, ammonia production)				X
Transportation	Pipeline				X
	Shipping			X	
Geological storage	Enhanced Oil Recovery (EOR)				X[e]
	Gas or oil fields			X	
	Saline formations			X	
	Enhanced Coal Bed Methane recovery (ECBM)[f]		X		

[c] Economically feasible under specific conditions means that the technology is well understood and used in selected commercial applications, for instance if there is a favourable tax regime or a niche market, or processing on in the order of 0.1 $MtCO_2$ yr^{-1}, with few (less than 5) replications of the technology.

c. Thousands of CO_2 injection wells are safely and economically operating in over 70 CO_2 EOR projects in the USA and more in other countries. Thirty million tons per year of new CO_2 plus additional quantities of recycled CO_2 is injected in EOR project wells in the USA. Some CO_2 EOR projects inject at rates higher than or near the 3,973 tons per day needed for the Gilberton CTL project. See Figure below for some examples.

SUP21-2

Industry has experience injecting CO2 in quantities comparable to the Gilberton CTL Plant.



Data Source: Heinrich, et al., "Environmental Assessment of Geologic Storage of CO2" presented at the Second National Conference on Carbon Sequestration, Washington, DC, May 5-8 (2003)

d. CO_2 co-produced with H_2S during oil and gas production has been routinely injected in disposal wells. CO_2 is often separated from oil and gas well production along with other naturally occurring gases such as H_2S and pipelined to nearby injection well sites for permanent geo-sequestration. Bachu reported that 40 acid gas injection facilities were safely operating in Canada in 2002 and had geo-sequestered 1.5 Mt of CO_2 and 1.0 Mt of H_2S. Xu et al reported in 2004 that CO_2 was being geo-sequestered at 16 acid gas injection facilities in the USA. Experience with acid gas injection isn't mentioned in the DEIS. SUP21-3

e. The long history of gas injection well operations in the USA should be noted by the DOE in evaluating the prospects for successful CGS operations during the estimated 50 year operating life of the proposed Gilberton GTL project. This part of the petroleum industry in the USA utilizes the same types of well construction and surface facility technology and injection operations procedures as those required for CGS. For example, Sleipner injects CO_2 through a standard gas injection well. The site selection/monitoring process and injection/reservoir engineering for natural gas storage projects are also similar. Natural gas injection volumes in the USA are over 3 TCF per year compared to the proposed Gilberton CGS volume of 25 BCF per year or 120 times the so-called "production scale" mentioned in the DEIS. Natural gas storage facilities are widely spread across the USA at 394 separate field locations including 7 operating in Pennsylvania. Plans for 14 new ones have been made and should be starting up soon in the USA including 2 more starting in Pennsylvania. Aquifers are used for gas storage in 44 of the 394 fields. The history of natural gas injection in the USA is summarized in the Table below: SUP21-4

U.S. Total Natural Gas Injections into Underground Storage (MMcf)

Decade	Year-0	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9
1930's						11,294	10,998	13,706	14,981	8,032
1940's	14,995	16,251	21,024	18,953	43,502	61,502	75,458	96,316	136,406	172,051
1950's	229,752	347,690	398,593	404,838	432,283	505,185	589,232	672,377	704,172	787,485
1960's	844,352	843,666	940,823	1,047,492	1,014,814	1,077,980	1,210,469	1,317,363	1,425,075	1,496,407
1970's	1,856,767	1,839,398	1,892,952	1,974,324	1,784,209	2,103,619	1,918,541	2,303,268	2,270,961	2,285,016
1980's	1,896,284	2,179,683	2,399,355	1,700,426	2,252,347	2,127,932	1,952,103	1,887,110	2,174,328	2,491,283
1990's	2,433,450	2,608,373	2,555,393	2,759,738	2,796,279	2,565,882	2,905,592	2,800,294	2,904,755	2,597,509
2000's	2,684,285	3,464,262	2,669,844	3,291,714	3,150,003	3,001,582				

Updated on 1/30/2007
Source: U.S. Energy Information Administration

3. The DEIS explores the feasibility of sequestration at a "regional sequestration site" and does not find or cite any concrete reason why it could not be done (page 4-5). It cites reasons the Schuylkill site would not work, but is silent on why the "regional sequestration site" would not work. In fact, the DEIS states the "region's sequestration capacity would be more than sufficient for the 72,000,000 tons of CO_2 SUP21-5

that would be recovered during the facilities' 50-year operating life." The project proponent should take the necessary steps to conduct an assessment of the nearby geology and also take into account nearby population centers with appropriate mitigation of risks.

SUP21-5

4. Additionally, on page ii, DOE mentions that initially it was anticipated that the CO_2 would be sold, but that the project sponsor has informed DOE that the sale would not occur. This is a market issue, not a technical issue and not a relevant to the conclusion that the "technology is not sufficiently mature." Furthermore, the commercial aspects may be revised based on the results of an invitation to bid for the construction and operation of CGS facilities, pipelines and injection wells.

SUP21-6

Current CTL and associated CCS projects that are in the feasibility evaluation or planning stage in other areas of the USA may be affected by this DEIS. Because of this, a more considered evaluation of the technology needs to be undertaken. If API can be of further assistance, please contact Steve Crookshank (202.682.8542; crookshanks@api.org) or Russell Jones (202.682.8545; jonesr@api.org) of API's Global Climate Team.

SUP21-7

SUP21 2/27/07
Steven L Crookshank
American Petroleum Institute

SUP 21-1

DOE rejected CO_2 geo-sequestration (CGS) as a CO_2 emissions mitigation measure stating that CGS "is not a reasonable option because sequestration technology is not sufficiently mature to be implemented at production scale during the demonstration period for the proposed facilities" (page 4). However, in support of this conclusion, DOE cites its own white paper "CO_2 capture and storage in geologic formations" done in January of 2002 even though the paper only outlines DOE's own research program.

Response:

The supplement to the draft EIS did not cite a reference in support of the statement quoted by the commenter. The quoted statement was a DOE statement based on consideration of information and analysis published by or obtained from sources both within and outside DOE. The statement is specific to the proposed project and should not be interpreted as applying to geologic sequestration technology in general.

The DOE white paper is cited in Section 5.1.4 in support of the statement that large-scale commercial deployment of the most promising carbon sequestration technologies is expected to be technically practicable within the next 15 years, which is well within the estimated 50-year commercial operating life of the proposed facilities.

SUP21-2

The statement in DEIS Section 4.2 that CGS "is not a reasonable option……not sufficiently mature…….at a production scale" appears to be focused on the storage or sequestration technology (as opposed to the CO_2 capture technology) and does not recognize that:

a. There are currently ongoing industrial-scale, commercial storage projects, namely the offshore Sleipner natural gas processing project in Norway which has been injecting 1 million tonnes per year since 1996, the In Salah natural gas project in Algeria, which has been injecting about 1.2 million tonnes per year since 2004, and Snohvit LNG project which will soon start operation.

b. The IPCC Special Report on Carbon Capture and Storage classifies all of the CCS technologies needed in the Gilberton CTL project as at least "Economically feasible under specific conditions" (page 18, Table TS.1), meaning that "the technology is well understood".

c. Thousands of CO_2 injection wells are safely and economically operating in over 70 CO_2 EOR projects in the USA and more in other countries. Thirty million tons per year of new CO_2 plus additional quantities of recycled CO_2 is injected in EOR project wells in the USA. Some CO_2 EOR projects inject at rates higher than or near the 3,973 tons per day needed for the Gilberton CTL project. See Figure below for some examples.

Response:

The comment correctly interprets the meaning of the quoted statement in Section 4.2. The statement is focused on the storage or sequestration technology. While the proposed facilities would produce a segregated CO_2 stream, thus accomplishing the "capture" step, sequestration of this CO_2 stream is not included as part of the proposed project, and therefore, is not a reasonable alternative for DOE to consider.

DOE is aware of the ongoing and planned enhanced-oil-recovery projects described in the comment, all of which take advantage of physical conditions and economic situations favorable for this type of activity. The IPCC Special Report on Carbon Capture and Storage (IPCC 2005) did characterize geologic storage in saline formations or oil and gas fields as "economically feasible under specific conditions," such as the presence of favorable tax regimes or other incentives.

SUP 21-3

CO_2 co-produced with H_2S during oil and gas production has been routinely injected in disposal wells. CO_2 is often separated from oil and gas well production along with other naturally occurring gases such as H_2S and pipelined to nearby injection well sites for permanent geo-sequestration. Bachu reported that 40 acid gas injection CO_2 and 1.0 Mt of H2S. Xu et al reported in 2004 that CO_2 was being geo-sequestered at 16 acid gas injection facilities in the USA. Experience with acid gas injection isn't mentioned in the DEIS.

Response:

Acid gas injection, as described in this comment, is not directly relevant to the technologies that would be employed at the proposed facilities discussed in this final EIS. Sulfur would be separated from the gas stream in the Claus unit at the proposed facilities and then sold as a solid byproduct. Therefore, there would be no production of a CO_2 and H_2S gas mixture. There is no reason to consider the potential injection of such a mixture.

SUP21-4

The long history of gas injection well operations in the USA should be noted by the DOE in evaluating the prospects for successful CGS operations during the estimated 50 year operating life of the proposed Gilberton GTL project. This part of the petroleum industry in the USA utilizes the same types of well construction and surface facility technology and injection operations procedures as those required for CGS. For example, Sleipner injects CO_2 through a standard gas injection well. The site selection/monitoring process and injection/reservoir engineering for natural gas storage projects are also similar. Natural gas injection volumes in the USA are over 3 TCF per year compared to the proposed Gilberton CGS volume of 25 BCF per year or 120 times the so-called "production scale" mentioned in the DEIS. Natural gas storage facilities are widely spread across the USA at 394 separate field locations including 7 operating in Pennsylvania. Plans for 14 new ones have been made and should be starting up soon in the USA including 2 more starting in Pennsylvania. Aquifers are used for gas storage in 44 of the 394 fields. The history of natural gas injection in the USA is summarized in the Table below (see letter).

Response:

Revised Section 5.1.4 notes that there is considerable industry experience with gas injection wells for purposes such as enhanced oil recovery, underground storage of natural gas, and production of coal-bed methane for sale as natural gas.

SUP21-5

The DEIS explores the feasibility of sequestration at a "regional sequestration site" and does not find or cite any concrete reason why it could not be done (page 4-5). It cites reasons the Schuylkill site would not work, but is silent on why the "regional sequestration site" would not work. In fact, the DEIS states the "region's sequestration capacity would be more than sufficient for the 72,000,000 tons of CO_2 that would be recovered during the facilities' 50-year operating life." The

project proponent should take the necessary steps to conduct an assessment of the nearby geology and also take into account nearby population centers with appropriate mitigation of risks.

Response:

Geologic carbon sequestration was not part of the project as proposed to DOE. There is no basis for DOE to direct the industrial participant to pursue its potential implementation during the demonstration period. Section 5.1.4 discusses the potential for geologic carbon sequestration during later commercial operations, as well as its potential environmental impacts. As discussed in that section, sequestration capacity for some of the facilities' CO_2 production may exist in Schuylkill County. The combined capacity of various different sequestration targets in Western Pennsylvania appears to be more than sufficient for the separated CO_2 that could be generated throughout the facilities' operating life. As implied by the comment, several preliminary steps would need to be completed before a geologic sequestration program could be initiated in either location, including acquisition of necessary surface and subsurface rights, geologic investigations, engineering of an injection system, and resolution of environmental concerns.

SUP21-6

Additionally, on page ii, DOE mentions that initially it was anticipated that the CO_2 would be sold, but that the project sponsor has informed DOE that the sale would not occur. This is a market issue, not a technical issue and not a relevant to the conclusion that the "technology is not sufficiently mature." Furthermore, the commercial aspects may be revised based on the results of an invitation to bid for the construction and operation of CGS facilities, pipelines and injection wells.

Response:

The statement cited by the commenter was not intended to imply that there were technical reasons for the industrial participant's decision not to sell the concentrated stream of CO_2.

SUP21-7

Current CTL and associated CCS projects that are in the feasibility evaluation or planning stage in other areas of the USA may be affected by this DEIS. Because of this, a more considered evaluation of the technology needs to be undertaken.

Response:

DOE acknowledges that geologic carbon sequestration may be a reasonable option for other projects and sites, even though it is not part of the project as proposed to DOE as part of the technology demonstration at the proposed facilities. DOE is actively supporting demonstrations of technologies for geologic carbon sequestration through its separate Carbon Sequestration Program and the FutureGen Initiative. As indicated by one of the tables supplied by the commenter, in the near term the feasibility of most geologic carbon sequestration technologies depends on project- and site-specific physical and economic conditions.

February 27, 2007

Ms. Janice L. Bell
National Environmental Policy Act (NEPA)
Document Manager, U.S. Department of Energy,
National Energy Technology Laboratory,
626 Cochrans Mill Road, P.O. Box 10940,
Pittsburgh, PA 15236-0940.

Dear Ms. Bell,

The Natural Resources Defense Council (NRDC) appreciates this opportunity to comment on the new supplement to the Department of Energy (DOE) draft environmental impact statement (DEIS) regarding the proposed liquid coal in Gilberton, PA. NRDC is a non-profit membership organization dedicated to protection the global environment and preserving the Earth's natural resources and represents thirty thousand members in PA and six hundred and fifty thousand members nationally. NRDC has submitted numerous sets of comments on this Draft EIS and most notably discovered that the actual CO_2 emissions from this liquid coal plant would be 3 times higher than reported. The first draft EIS misreported the CO_2 emissions at 0.8 million tons per year, while the supplemental EIS now estimates the correct CO_2 emissions at 2.3 million tons per year. It should be noted that WMPI, Inc. originally planned to sell 1.45 million tons per year CO_2 emissions from the plant to a third party and DOE accepted this as a reason not to report emissions. Selling the CO2 is not equivalent to sequestering the CO2 and therefore these emissions should be reported unless sequestration is specified. This misrepresentation triggered the release of this supplemental EIS for comment. Research by Williams et. al. shows that liquid coal has double the life-cycle CO_2 emissions of conventional petroleum. This supplement reinforces the notion that we should not be subsidizing the birth of an industry that is far from "clean" and that could leave us with a heavy legacy of greenhouse gases.

SUP22-1

SUP22-2

Carbon Dioxide Emission Comparison to Conventional Petroleum Refinery

The supplemental EIS argues that, with technology advancements, future large scale CTL facilities are expected to be able to achieve higher rates of CO_2 capture and sequestration than the current technology (Larson and Tingjin 2003, Southern States Energy Board 2006), potentially resulting in greenhouse-gas emissions that are lower than those resulting from use of conventional petroleum refineries that are not equipped for CO_2 capture and sequestration. Due to the additional costs associated with carbon capture and storage, it must be assumed that if a CTL facility is utilizing carbon capture and storage, it must be doing so as a result of carbon control regulations and/or their economic implications. It is therefore reasonable to assume that the same regulations might lead an oil refinery to capture and store its carbon as well. In order to present a fair and complete range of comparisons, DOE must also consider a case where CCS is employed in both the CTL plant and the oil refinery. In any case, CTL plants with carbon capture and storage still produce nearly 10% more carbon than a conventional petroleum refinery without capture and storage[1].

SUP22-3

[1] Robert H. Williams, Eric D. Larson & Haiming Jin, *"Synthetic fuels in a world with high oil and carbon prices"*. Prepared for 8th International Conference on Greenhouse Gas Control Technologies, Trondheim, Norway, 19-22 June 2006

Status of Carbon Capture and Storage

The new supplement to the Department of Energy (DOE) draft environmental impact statement (DEIS) for the Gilberton coal-to-liquid-fuel plant mischaracterizes the current status of CCS technology. The DEIS states that "sequestration technology is not sufficiently mature to be implemented at production scale during the demonstration period for the proposed facilities". It is both feasible and technically practicable to carry out large, commercial scale capture and sequestration of CO_2 in geological formations today, as several projects have proven internationally. Economic, geographical and logistical factors specific to this particular plant should not be used to discredit CCS technology as a whole, and as such the statement is wrong. The supplemental further states that, "Large-scale commercial deployment of the most promising carbon sequestration technologies is expected to be technically practicable within the next 15 years (CO_2 Capture and Storage Working Group 2002)." This reference is to a draft program plan (white paper) by NETL in 2001 that outlined a 15-year government program to subsidize demonstration projects. This paper did not claim that sequestration on the scale of the Gilberton project could not be implemented for another 15 years, and furthermore significant developments in understanding and deployment of CCS have taken place since 2001.

SUP22-4

SUP22-5

Currently, the DOE regional carbon sequestration partnerships are involved in pilot-scale carbon capture and storage while the private sector, most notably BP, is pursuing projects that would sequester even larger quantities of CO_2 than would be involved at Gilberton. In addition, the amounts already being sequestered from Beulah and Labarge in the US are the same order of magnitude as the Gilberton emission stream. While Beulah, Labarge and Carson are, or would be, injection projects occurring in oil fields, other projects (Sleipner and InSalah) are successful examples of commercial sequestration operations in other types of reservoir. The DEIS' conclusions are clouded by the fact that there is a distinct lack of geological storage site mapping in Eastern Pennsylvania. The DEIS focuses almost exclusively on coal seams or sinks in the Western part of the state, without considering the potential for other types of sink in the vicinity of Gilberton. The fact that the local geology has not been examined sufficiently should not be used to draw generalized conclusions about the feasibility of CCS as a technology. Finally, DOE's much touted FutureGen project, scheduled to begin operation in 2012, is an unambiguous example of the government's position that we know enough now to store safely several million tons of CO_2 per year underground.

SUP22-6

SUP22-7

SUP22-8

Sincerely,

David Hawkins
Director, Climate Center
Natural Resources Defense Council

SUP22 2/27/07
David Hawkins
Director, Climate Center
Natural Resource Defense Council

SUP22-1

The Natural Resources Defense Council (NRDC) appreciates this opportunity to comment on the new supplement to the Department of Energy (DOE) draft environmental impact statement (DEIS) regarding the proposed liquid coal in Gilberton, PA. NRDC is a non-profit membership organization dedicated to protection the global environment and preserving the Earth's natural resources and represents thirty thousand members in PA and six hundred and fifty thousand members nationally. NRDC has submitted numerous sets of comments on this draft EIS and most notably discovered that the actual CO_2 emissions from this liquid coal plant would be 3 times higher than reported. The first draft EIS misreported the CO_2 emissions at 0.8 million tons per year, while the supplemental EIS now estimates the correct CO_2 emissions at 2.3 million tons per year. CO_2 emissions from the plant to a third party and DOE accepted this as a reason not to report emissions. Selling the CO_2 is not equivalent to sequestering the CO2 and therefore these emissions should be reported unless sequestration is specified. This misrepresentation triggered the release of this supplemental EIS for comment.

Response:

As the comment points out, DOE has corrected information about CO_2 emissions in the Supplement to the draft EIS and in this final EIS. DOE also acknowledges that sale of byproduct CO_2 for industrial or commercial use would delay its release to the atmosphere for a short time. Therefore, sale of the CO_2 stream would not be equivalent to sequestration.

SUP22-2

Research by Williams et al. shows that liquid coal has double the life-cycle CO_2 emissions of conventional petroleum. This supplement reinforces the notion that we should not be subsidizing the birth of an industry that is far from "clean" and that could leave us with a heavy legacy of greenhouse gases.

Response:

Both the Supplement to the draft EIS and Section 6.1.2 of this final EIS compare the life-cycle CO_2 emissions of the CTL fuel cycle to the life-cycle CO_2 emissions of the conventional petroleum fuel cycle. This comparison is based, in part, on work by Williams and colleagues, who have reported that life-cycle CO_2 emissions of the CTL fuel cycle are about 80% higher than from the conventional petroleum fuel cycle.

SUP22-3

Carbon Dioxide Emission Comparison to Conventional Petroleum Refinery

The supplemental EIS argues that, with technology advancements, future large scale CTL facilities are expected to be able to achieve higher rates of CO_2 capture and sequestration than the current technology (Larson and Tingjin 2003, Southern States Energy Board 2006), potentially resulting in greenhouse-gas emissions that are lower than those resulting from use of conventional petroleum refineries that are not equipped for CO_2 capture and sequestration. Due to the additional costs associated with carbon capture and storage, it must be assumed that if a CTL facility is utilizing carbon capture and storage, it must be doing so as a result of carbon control regulations and/or their

economic implications. It is therefore reasonable to assume that the same regulations might lead an oil refinery to capture and store its carbon as well. In order to present a fair and complete range of comparisons, DOE must also consider a case where CCS is employed in both the CTL plant and the oil refinery. In any case, CTL plants with carbon capture and storage still produce nearly 10% more carbon than a conventional petroleum refinery without capture and storage.

Response:

DOE acknowledges that the potential exists for petroleum refineries to capture and sequester some CO_2 that would otherwise be released to the atmosphere. However, given the much higher costs of carbon capture in a petroleum refinery than in the proposed facilities, it is not reasonably foreseeable that petroleum refineries would implement CCS on a broad scale within the time frame of the hypothetical fuel-cycle comparison presented in DOE's cumulative impacts discussion (Section 6.1). The analysis presented in Section 6.1 already indicates the approximate magnitude of the potential cumulative impacts of CTL technology under a range of assumptions. Expanding the assessment of cumulative impacts to include the additional hypothetical scenario suggested would not add meaningful information value to the assessment.

SUP22-4

Status of Carbon Capture and Storage

The new supplement to the Department of Energy (DOE) draft environmental impact statement (DEIS) for the Gilberton coal-to-liquid-fuel plant mischaracterizes the current status of CCS technology. The DEIS states that "sequestration technology is not sufficiently mature to be implemented at production scale during the demonstration period for the proposed facilities". It is both feasible and technically practicable to carry out large, commercial scale capture and sequestration of CO_2 in geological formations today, as several projects have proven internationally. Economic, geographical and logistical factors specific to this particular plant should not be used to discredit CCS technology as a whole, and as such the statement is wrong.

Response:

The quoted statement from the supplemental EIS is specific to the proposed project and should not be interpreted as applying to CCS technology in general. Furthermore, note that geologic carbon sequestration was not part of the project as proposed to DOE. Also see the response to comment S10-9.

SUP22-5

The supplemental further states that, "Large-scale commercial deployment of the most promising carbon sequestration technologies is expected to be technically practicable within the next 15 years (CO_2 Capture and Storage Working Group 2002)." This reference is to a draft program plan (white paper) by NETL in 2001 that outlined a 15-year government program to subsidize demonstration projects. This paper did not claim that sequestration on the scale of the Gilberton project could not be implemented for another 15 years, and furthermore significant developments in understanding and deployment of CCS have taken place since 2001.

Response:

The DOE white paper is cited in Section 5.1.4 in support of the statement that large-scale commercial deployment of the most promising carbon sequestration technologies is expected to be practicable within the next 15 years, which is well within the estimated 50-year commercial operating life of the proposed facilities.

SUP22-6

Currently, the DOE regional carbon sequestration partnerships are involved in pilot-scale carbon capture and storage while the private sector, most notably BP, is pursuing projects that would sequester even larger quantities of CO_2 than would be involved at Gilberton. In addition, the amounts already being sequestered from Beulah and Labarge in the US are the same order of magnitude as the Gilberton emission stream. While Beulah, Labarge and Carson are, or would be, injection projects occurring in oil fields, other projects (Sleipner and In Salah) are successful examples of commercial sequestration operations in other types of reservoirs.

Response:

DOE is aware of the ongoing and planned enhanced oil recovery and CO_2 sequestration projects mentioned in the comment,[1] all of which take advantage of physical conditions and economic situations favorable for this type of activity. These large-scale projects are good examples of carbon capture and sequestration, but they do not represent the full range of deployment opportunities needed to accommodate the quantities of CO_2 potentially available for sequestration. DOE is actively supporting demonstrations of technologies for geologic carbon sequestration in order to develop the information needed to support broad deployment of the technology. DOE expects that the project proposed by WMPI, which would incorporate capture of a segregated CO_2 stream, would provide valuable information for future facilities that are designed to both capture and sequester CO_2.

SUP22-7

The DEIS' conclusions are clouded by the fact that there is a distinct lack of geological storage site mapping in Eastern Pennsylvania. The DEIS focuses almost exclusively on coal seams or sinks in the Western part of the state, without considering the potential for other types of sink in the vicinity of Gilberton. The fact that the local geology has not been examined sufficiently should not be used to draw generalized conclusions about the feasibility of CCS as a technology.

Response:

In preparing Section 5.1.4, DOE considered available information about the geology of eastern Pennsylvania and identified a potential for geologic sequestration of CO_2 in Schuylkill County coal beds that may contain a commercially viable coal bed methane resource. The EIS discussion of geologic sequestration is specific to the proposed project. The EIS does not draw general conclusions regarding the feasibility of geologic sequestration of CO_2.

SUP22-8

Finally, DOE's much touted FutureGen project, scheduled to begin operation in 2012, is an unambiguous example of the government's position that we know enough now to store safely several million tons of CO_2 per year underground.

Response:

The proposed facilities and the FutureGen project would both contribute to the DOE-supported process to develop and demonstrate CO_2 capture and storage technology. This process first

[1] CO_2 from a coal gasification plant in Beulah, North Dakota, is used for enhanced oil recovery in the Weyburn Oil Field in Saskatchewan, Canada. CO_2 removed from natural gas produced at LaBarge, Wyoming, is used in enhanced oil recovery in Rangely, Colorado. At Sleipner in the North Sea and In Salah in Algeria, CO_2 removed from natural gas is injected into strata above or below the gas-bearing units. In the proposed Carson project in southern California, CO_2 produced in a hydrogen plant would be used in enhanced oil recovery in nearby oil fields.

requires the validation of the coal-to-liquids production technologies and later, as the FutureGen project is deployed, confirmation that CO_2 capture and storage technology are proven and safe for commercial application. As noted in response to comment SUP22-6, DOE expects that the project proposed by WMPI, which would incorporate capture of a segregated CO_2 stream, would provide valuable design information for FutureGen and other future facilities designed to both capture and sequester CO_2.

"Mike Ewall" <catalyst@actionpa.org> 2/27/2007 3:27 PM

Dear Ms. Bell,

My comments on the Supplement to the Draft Environmental Impact Statement for the Gilberton Coal-to-Clean Fuels and Power Project (DOE/EIS-0357D-S1) are attached as the "CO2 amendment comments.pdf" file. The documents I reference in my comments are also attached and are intended as comments of their own, to be addressed in this DEIS process.

Please confirm the timely receipt of these comments.

Mike Ewall
1434 Elbridge St.
Philadelphia, PA 19149
215-743-4884
catalyst@actionpa.org

Comments to

Ms. Janice L. Bell
National Environmental Policy Act (NEPA) Document Manager
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochrans Mill Road,
P.O. Box 10940
Pittsburgh, PA 15236-0940.

on the

Supplement to the Draft Environmental Impact Statement for the Gilberton Coal-to-Clean Fuels and Power Project (DOE/EIS-0357D-S1)

by

Mike Ewall
1434 Elbridge St
Philadelphia, PA 19149
215-743-4884
catalyst@actionpa.org

February 27, 2007

1) Capacity factor is likely inflated.

The DEIS assumes an 85% capacity factor. Where is this number coming from? Is there a solid basis to assume an 85% capacity factor for a new, experimental plant that will be testing out a variety of fuels? According to the Project Abstract (referenced in my 2/8/2006 comments on the DEIS), the plant will be processing "coals and/or coal wastes, petroleum coke, biomass, and selected industrial/municipal wastes." With this amount of experimentation, a capacity factor as high as 85% doesn't seem warranted.

SUP23-1

2) Lifetime of the Plant: 26 or 50 years?

Pages 5-1 and 6-1/6-2 of the initial DEIS state that the lifetime of the proposed refinery would be 26 years. Now, this partially amended DEIS claims a 50 year operating life. Which is it? These parts need to be made consistent. Either the rest of the DEIS has to be adjusted to account for a 50 year lifetime, or this new section must be adjusted to the previous 26 year assumed lifetime. A shorter lifespan is more realistic if one does an honest assessment of the availability of waste coal, the economics of the peaking in U.S. coal production (projected for 2032) and of coal production capacity (which peaked in 1999), the limitations of carbon sequestration, the carbon constraint policies likely to be passed in the next 50 years, and/or the viability of the competition for burnable fuels (i.e. the likelihood of a major shift to electric-powered vehicles within the next 10-50 years).

SUP23-2

See the following for references on peak coal production and production capacity:

"The Peak in U.S. Coal Production," Gregson Vaux, 2004.
http://www.fromthewilderness.com/free/ww3/052504_coal_peak.html

"Despite Being the "Saudi Arabia of Coal," Could U.S. Coal Supply Fall Short of Surging Demand? -- Study Finds Major New Investments in Coal Supply and Transportation Capacity Required" December 14, 2006.
http://biz.yahoo.com/iw/061214/0194797.html

3) Not all greenhouse gas emissions are being counted

Page 3 states: *"The total emissions from WMPI would include CO2 emitted directly to the atmosphere by facility operations (832,000 tons per year) plus the concentrated CO2 stream separated in the gas cleanup system (1,450,000 tons per year; Radizwon 2006), which would be emitted at the site."*

This fails to count emissions associated with transporting and burning the fuel.

Also left out of this analysis are the CO2 emissions associated with carbon sequestration activities. Carbon sequestration processes themselves are very energy intensive and there will be emissions associated with CO2 separation, transporting the CO2 to sequestration sites (and the emissions associated with building any related pipelines – including the emissions associated with the materials used), and those associated with the sequestration/injection sites themselves.

SUP23-3

If the sequestration method involves extracting and burning natural gas, coal-bed methane or oil, the ultimate burning of those fossil fuels needs to be considered in the greenhouse gas emissions analysis, as these would be a direct result of the CO2 sequestering operations of the WMPI

facility - a result which wouldn't happen otherwise. Natural gas and coal-bed methane will release some unburned gas from leaks in the process from extraction to ultimate use, and these need to be factored in as well. SUP23-3

The DEIS also fails to count non-CO2 greenhouse gas emissions (including water vapor, which is recognized in the DEIS as a greenhouse gas). SUP23-4

4) Geologic sequestration is not a "promising" technology

Page 4 claims that "underground storage, or geologic sequestration, of CO2 is a promising technology." This sounds more like wishful thinking and public relations than reality. This needs to be reworded to be more objective. To temper the hype with some doses of reality, the information in the following studies and articles (most of which are attached as part of these comments) ought to be evaluated:

"Health, safety and environmental risks of underground CO2 sequestration – Overview of mechanisms and current knowledge"; Kay Damen, Andre Faaij and Wim Turkenburg, Climatic Change 2006; 74(1-3): 289-318.

"Important! Why Carbon Sequestration Won't Save Us"; Richard, Michael Graham, July 31, 2006. http://www.treehugger.com/files/2006/07/carbon_sequestration.php

"Carbon Sequestration: Speed Bump or Wall?"; Richard, Michael Graham, June 5th, 2006. http://www.treehugger.com/files/2006/07/carbon_sequestration2.php

"Potential Leakage and Toxicity Problems with CO2 Sequestration," July 31, 2006. http://www.greencarcongress.com/2006/07/potential_leaka.html

"Sequestered CO2 May Erode Absorbing Sandstone -- A Possible Snag in Burying CO2"; Kerr, Richard A., June 30, 2006. http://tinyurl.com/25rk4e (full URL is: http://www.heatisonline.org/contentserver/objecthandlers/index.cfm?ID=5992&Method=Full&PageCall=&Title=Sequestered%20CO2%20May%20Erode%20Absorbing%20Sandstone&Cache=False) SUP-23-5

"Gas-water-rock interactions in Frio Formation following CO2 injection: Implications for the storage of greenhouse gases in sedimentary basins"; Y.K. Kharaka, D.R. Cole, S.D. Hovorka, W.D. Gunter, K.G. Knauss, B.M. Freifeld; Geology: Vol. 34, No. 7, pp. 577–580 doi: 10.1130/G22357.1 http://www.gsajournals.org/perlserv/?request=get-abstract&doi=10.1130%2FG22357.1

"The Weather Makers: How Man Is Changing the Climate and What It Means for Life on Earth"; Flannery, Tim, Grove Atlantic, 2005. http://www.theweathermakers.com

Oil and gas production in Pennsylvania and the U.S. in general will be past-peak by the time the facility starts operation. With limited and declining oil and gas extraction, it's unrealistic to assume that these methods for sequestration will be able to last for such long periods of time.

Schuylkill County's coal fields are too geologically unstable from over a century of mining practices to be reliable sequestration sites. SUP23-5

5) Competition and economics not considered in western PA sequestration capacity

Pages 4-5 state that western Pennsylvania sequestration capacity "would be more than sufficient."

This didn't factor in competition from many other existing and proposed coal burning facilities that will be even closer to the sequestration sites. This proximity will make WMPI's competition more economically viable and could affect the availability of these sequestration sites while increasing the financial cost associated with using those sites. SUP23-6

The DEIS is also not factoring in the incredible financial costs, energy loses and carbon emissions associated with transporting and sequestering the CO2, making it impractical. Financially, a CO2 pipeline can cost in the realm of $1 million per mile.

6) Coal-bed Methane impacts not thoroughly examined

Pages 5-6 begin to examine the impacts of coal-bed methane, but only scratch the surface. If this is being considered, the environmental impacts need to be more fully described. SUP23-7

"Oil and Gas at Your Door? – A Landowner's Guide to Oil and Gas Development," Oil and Gas Accountability Project, 2005. http://www.energyjustice.net/naturalgas/cbm/

SUP23 2/27/07
Mike Ewall
1434 Elbridge St.
Philadelphia, PA 19149

SUP23-1

1) Capacity factor is likely inflated.

The DEIS assumes an 85% capacity factor. Where is this number coming from? Is there a solid basis to assume an 85% capacity factor for a new, experimental plant that will be testing out a variety of fuels? According to the Project Abstract (referenced in my 2/8/2006 comments on the DEIS), the plant will be processing "coals and/or coal wastes, petroleum coke, biomass, and selected industrial/municipal wastes." With this amount of experimentation, a capacity factor as high as 85% doesn't seem warranted.

Response:

If the capacity factor that DOE used as a basis for environmental impact assessment is optimistic, this was appropriate, because it helps to avoid underestimating the environmental impacts of the proposed action. Also see the response to comment S10-2.

SUP 23-2

2) Lifetime of the Plant: 26 or 50 years?

Pages 5-1 and 6-1/6-2 of the initial DEIS state that the lifetime of the proposed refinery would be 26 years. Now, this partially amended DEIS claims a 50 year operating life. Which is it? These parts need to be made consistent. Either the rest of the DEIS has to be adjusted to account for a 50 year lifetime, or this new section must be adjusted to the previous 26 year assumed lifetime. A shorter lifespan is more realistic if one does an honest assessment of the availability of waste coal, the economics of the peaking in U.S. coal production (projected for 2032) and of coal production capacity (which peaked in 1999), the limitations of carbon sequestration, the carbon constraint policies likely to be passed in the next 50 years, and/or the viability of the competition for burnable fuels (i.e. the likelihood of a major shift to electric powered vehicles within the next 10-50 years).

See the following for references on peak coal production and production capacity:
"The Peak in U.S. Coal Production," Gregson Vaux, 2004.
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"Despite Being the "Saudi Arabia of Coal," Could U.S. Coal Supply Fall Short of Surging Demand? -- Study Finds Major New Investments in Coal Supply and Transportation Capacity Required" December 14, 2006.
http://biz.yahoo.com/iw/061214/0194797.html

Response:

The assessment of potential impacts from commercial operations of the facility following the demonstration period (in Chapter 5) is now based on an assumed 50-year operating life, rather than the 26-year operating life considered in the DEIS. Section 5.1.1 acknowledges uncertainties in fuel resource availability for the full 50-year period and discusses their potential environmental implications.

SUP23-3

3) Not all greenhouse gas emissions are being counted

Page 3 states: “The total emissions from WMPI would include CO2 emitted directly to the atmosphere by facility operations (832,000 tons per year) plus the concentrated CO2 stream separated in the gas cleanup system (1,450,000 tons per year; Radizwon 2006), which would be emitted at the site.”

This fails to count emissions associated with transporting and burning the fuel.

Also left out of this analysis are the CO2 emissions associated with carbon sequestration activities. Carbon sequestration processes themselves are very energy intensive and there will be emissions associated with CO2 separation, transporting the CO2 to sequestration sites (and the emissions associated with building any related pipelines – including the emissions associated with the materials used), and those associated with the sequestration/injection sites themselves.

If the sequestration method involves extracting and burning natural gas, coal-bed methane or oil, the ultimate burning of those fossil fuels needs to be considered in the greenhouse gas emissions analysis, as these would be a direct result of the CO2 sequestering operations of the WMPI facility - a result which wouldn’t happen otherwise. Natural gas and coal-bed methane will release some unburned gas from leaks in the process from extraction to ultimate use, and these need to be factored in as well.

Response:

Neither the use of liquid fuel by its ultimate consumers nor the sequestration of CO_2 is part of the proposed federal action considered in this final EIS. However, the CO_2 emissions associated with these activities are included in the assessment of life-cycle greenhouse gas impacts of coal-to-liquids technology that is presented in Section 6.1.2.

SUP23-4

The DEIS also fails to count non-CO2 greenhouse gas emissions (including water vapor, which is recognized in the DEIS as a greenhouse gas).

Response:

Although water vapor is a greenhouse gas, air emissions of water vapor do not contribute to global warming. Not only is the amount of water vapor released to the air extremely small compared to the total amount of water vapor in the global atmosphere, but (unlike CO_2) water vapor does not build up in the atmosphere because the atmosphere has a limited capacity to hold water vapor. When the amount of water vapor in the atmosphere exceeds the atmosphere’s ability to hold water vapor at a certain temperature, the water vapor condenses and falls to earth as rain or snow. Also see the response to comment SUP20-1.

SUP23-5

4) Geologic sequestration is not a “promising” technology

Page 4 claims that “underground storage, or geologic sequestration, of CO2 is a promising technology.” This sounds more like wishful thinking and public relations than reality. This needs to be reworded to be more objective. To temper the hype with some doses of reality, the information in the following studies and articles (most of which are attached as part of these comments) ought to be evaluated:

"Health, safety and environmental risks of underground CO_2 sequestration – Overview of mechanisms and current knowledge"; Kay Damen, Andre Faaij and Wim Turkenburg, Climatic Change 2006; 74(1-3): 289-318.

"Important! Why Carbon Sequestration Won't Save Us"; Richard, Michael Graham, July 31, 2006. http://www.treehugger.com/files/2006/07/carbon_sequestration.php

"Carbon Sequestration: Speed Bump or Wall?"; Richard, Michael Graham, June 5th, 2006. http://www.treehugger.com/files/2006/07/carbon_sequestration2.php

"Potential Leakage and Toxicity Problems with CO_2 Sequestration," July 31, 2006. http://www.greencarcongress.com/2006/07/potential_leaka.html

"Sequestered CO_2 May Erode Absorbing Sandstone -- A Possible Snag in Burying CO2"; Kerr, Richard A., June 30, 2006. http://tinyurl.com/25rk4e (full URL is: http://www.heatisonline.org/contentserver/objecthandlers/index.cfm?ID=5992&Method=Full&PageCall=&Title=Sequestered%20CO2%20May%20Erode%20Absorbing%20Sandstone&Cache=False)

"Gas-water-rock interactions in Frio Formation following CO_2 injection: Implications for the storage of greenhouse gases in sedimentary basins"; Y.K. Kharaka, D.R. Cole, S.D. Hovorka, W.D. Gunter, K.G. Knauss, B.M. Freifeld; Geology: Vol. 34, No. 7, pp. 577–580 doi: 10.1130/G22357.1 http://www.gsajournals.org/perlserv/?request=get-abstract&doi=10.1130%2FG22357.1

"The Weather Makers: How Man Is Changing the Climate and What It Means for Life on Earth"; Flannery, Tim, Grove Atlantic, 2005. http://www.theweathermakers.com

Oil and gas production in Pennsylvania and the U.S. in general will be past-peak by the time the facility starts operation. With limited and declining oil and gas extraction, it's unrealistic to assume that these methods for sequestration will be able to last for such long periods of time.

Schuylkill County's coal fields are too geologically unstable from over a century of mining practices to be reliable sequestration sites.

Response:

Geologic sequestration of CO_2 is not part of the proposed action. DOE is actively engaged in research and development on geologic carbon sequestration through its separate Carbon Sequestration Program, with the aim of resolving engineering and environmental issues associated with these technologies, such as the issues discussed in the references cited in the comment. Before geologic sequestration could be implemented in Schuylkill County or any other location, site-specific investigations would be needed to determine the suitability of the injection zones.

SUP23-6

5) Competition and economics not considered in western PA sequestration capacity

Pages 4-5 state that western Pennsylvania sequestration capacity "would be more than sufficient."

This didn't factor in competition from many other existing and proposed coal burning facilities that will be even closer to the sequestration sites. This proximity will make WMPI's competition more economically viable and could affect the availability of these sequestration sites while increasing the financial cost associated with using those sites.

The DEIS is also not factoring in the incredible financial costs, energy loses and carbon emissions associated with transporting and sequestering the CO2, making it impractical. Financially, a CO2 pipeline can cost in the realm of $1 million per mile.

Response:

DOE agrees that economics would be an important factor in determining the feasibility of any program for geologic sequestration of CO_2. However, it is not the purpose of an EIS to present business plans or detailed economic analyses of technologies, particularly when the technology is not being considered for potential inclusion in the proposed federal action.

SUP23-7:

6) Coal-bed Methane impacts not thoroughly examined

Pages 5-6 begin to examine the impacts of coal-bed methane, but only scratch the surface. If this is being considered, the environmental impacts need to be more fully described.

"Oil and Gas at Your Door? -- A Landowner's Guide to Oil and Gas Development," Oil and Gas Accountability Project, 2005. http://www.energyjustice.net/naturalgas/cbm/

Response:

Coal-bed methane extraction is not part of the proposed project considered in this EIS and is not being actively considered as an alternative. It is addressed in this final EIS only as a potential future action. Therefore, a detailed assessment of its potential environmental impacts is not warranted.

Mar-12-2007 10:01am From-ESH DIVISION 4123864806 T-453 P.002 F-787

3/12/07

Bryant Arroyo
AM-1125, SCI-Mahanoy
301 Morea Rd.
Frackville, Penna. 17932

March 5, 2007

U.S. Department of Energy Technology Laboratory
National Environmental Policy Act
Ms. Janice L. Bell, Document Manger
626 Cochrans Mill Road, PO. Box 10940
Pittsburgh, Penna. 15236-0940

Re: Environmental Impact Statements
Supplemental Editions Nov. 2005 & Dec. 2006

Dear Ms. Bell:

In light of both Environmental Impact Statements, in particular, the December 2006 Supplement upon review has generated among the staff/inmates is palpable in regards to the serious health concerns we may all potentially face, if this plant is built 300ft. from this facility. There is no telling what may take place, if this plant, is built, especially, when it comes to the human instinct of self-preservation-at all costs. This will directly impact everyone's life within this place and the surroundings communities to our detriment. There hasn't gone a day without suffering the pangs of distress about considering the stake we hold by envisioning the prospect of this project coming to fruition making us the inescapable victims of their experimental plant. SUP24-1

I would like to direct your attention to an article that was published in the Pottsville Republican August 5, 2006, wherein, I made an effort to not only voice my opposition to this proposed project, but made several attempts to get assistance from the DOC, attornies, and other newspapers. I stated:"We reject the notion that the buildings here would protect the inmates (24hrs a day/seven days a week) and staff from prolonged exposure to the hazardous chemicals because the assertions that the buildings here are 'air-tight' is an outright falsehood!" In the WMPI Section 4.1.7.7 on Environmental Justice quotes "Serious air quality impacts to this population would not be expected, however, because (1) air quality impacts would not be appreciable with the exception of temporary fugitive dust during construction, and (2) the Mahanoy State Correctional SUP24-2

Institution is a sealed facility in which inmates/staff would not be exposed to outside air except during periods of outdoor activity (Section4.1.2.1). This research seems to have been done by a novice who is ignorant about the daily operations within this facility. It is obvious, that this statement is spurious, at best; and leaves me with the impression that they whimsically attempted to skirt around this vital issue about what truly awaits the entire staff/inmates, if, in fact, this plant were to be built adjacent 300ft. from this facility. I would invite you to speak directly to the Superintendent (Edward J. Klem) and have him explain the daily arrangements of how the DOC runs this place. I am quite certain you wouldn't be suprised to findout that everyone is exposed to whatever fall-out chemicals that would come from this plant every night/day. These buildings have centralized air ducts that no matter what type of filter you install could ultimately prevent or isolate everyone from the harm and exposure to these detrimental cancerous chemicals. So, I suggest that you either inquire with the Dept.'s Secy: Jeffrey A. Beard or Supt. Edward J. Klem to verify and confirm the actual exposure we face on a daily basis. In hindsight, the report misstates these factors in an attempt to create a false sense of security for the reader-the claims in this report are baseless and are bald face assertions made prematurely without any type of research or confirmation from a DOC official-doesn't exist. This raises several important questions. Where did WMPI officials get to their information from? who is responsible for making this bald face assertion(s)? Did anyone of them ever get a visitor's pass and tour this compound in order to arrive, at this conclusion? Categorically, this wasn't done-they just filled in the blanks thinking nobody would catch them in their own unsubstantiated remarks in the report. They failed or just never did any type of research to end up making these outright false statements.

SUP24-2

SUP24-3

Another issue of concern, is the section of 3.9/3.9.1 dealing with the human health aspect, which was my main issues layed-out in my article titled:"Local Community Potential Target For Environmental Terrorism," which goes right into the hazards we could face, if this plant is built and the serious factors facing the elderly residents of Schuylkill County and especially those who have an already compromised (weakened) immune system because of a number of present medical problems, which would result in their bodies not resisting the toxic chemical fall-out compounding their medical conditions and ultimately death.

SUP24-4

Due to the outdoor/indoor air quality-the amount of dust is a common problem in this place for both asthmatics and those with allergies, etc. Both of these illnesses are mainly focused on the minority population, as referenced in the November 2005 Supplement under this section of human health. These are the kinds of things your office needs to hammer home in a public hearing. I would like to make the recommendation of having you either read/highlight certain parts of my article, at any future public hearings in order to inform the public, at large. SUP24-4

However, I do realize all of the departments have tough choices to make; but that doesn't mean that commonsense and practical reasoning can be tossed out the window. I urge on behalf of the staff/inmate population, as well as all who contributed to this proposed projects research and interjected past/present analysis of the detrimental aspects of the chemical fall-out from this proposed plant to carefully weigh and consider all of the various factors (Human-beings) I have raised in the above-mentioned article. The pitfall is to succumb to the error in human thinking which is that a dangerous plan is better than no plan! SUP24-5

In any event, I await for your response and comments in regards to the materials enclosed. Also, I almost forget to mention, that I do apologize for being tardy in my submission to have my concerns acknolwedged for the public forum period ending on February 27, 2007. There were minor trivial things that had occured on getting my hands on both EIS statements/supplements and review them before the deadline. I am not sure what did the Mahanoy Township Supervisors Chairwoman, Sharon R. Chiao did with over 900 formal objection letters we inmates sent her office. You may want to make an inquiry about our efforts and what happened to those formal letter that were sent/received by her office. These formal letter should have been highlighted or made note of as a submission on behalf of the inmate populace. Please let me know, after inquiring about these formal letters, what did the Township do with them? They should have sent them over to your office-the Dept. of Energy in order to make the submission deadline in order to acknolwedge/highlight our concerns for the record. I am not sure, but, I am somewhat skeptical that the Mahanoy Township never sent these letters to your office. Since, you never made any mention or SUP24-6

documented anything regarding these letters in your December 2006 final draft edition which was considered the final EIS statement. Nowhere, in this supplement is there one formal objection letter attached for the record. We don't appreciate being black-balled as part of the population on voicing our concerns. SUP24-6

From the residents at SCI-Mahanoy, we greatly appreciate your time and consideration in reviewing our thoughts and correspondence for the sake of all involved.

Respectfully Submitted,

Bryant Arroyo

w/eacls.
cc:File
Thomas A. Linzey, Esq.
Nancy Garcia, FUFJ
John M. Feeney, Esq.
Phila. Daily News
Pottsville Republican
Carol Clarke, York Daily Record
Supt. Edward J. Klem
Secy. Jeffrey A. Beard, Ph.D.

P.S. I am requesting that you kindly send me a courtesy copy of both EIS Statements-Supplements of Nov. 2005 & Dec. 2006 editions for my personal reserach/file. Thank you in advance, for your gesture in providing me with said materials. Thanks again!

SUP24 3/12/07
Bryant Arroyo
301 Morea Rd.
Frackville, PA 17932

SUP24-1

In light of both Environmental Impact Statements, in particular, the December 2006 Supplement upon review has generated among the staff/inmates is palpable in regards to the serious health concerns we may all potentially face, if this plant is built 300 ft. from this facility. There is no telling what might take place, if this plant, is built, especially, when it comes to human instinct of self-preservation-at all costs. This will directly impact everyone's life within this place and directly impact everyone's within this place and the surrounding communities to our detriment. There hasn't gone a day without suffering the pangs of distress about considering the stake we hold by envisioning the prospect of this project coming to fruition making us the inescapable victims of their experimental plant.

Response:

Effects of the proposed project on human health are discussed in EIS Sections 4.1.2.1, 4.1.9, and 4.1.10. Fugitive dust emissions during construction would occur over a relatively short time period, and could readily be controlled by water-spray trucks. All maximum ambient concentrations of criteria air pollutants were estimated to be less than their corresponding significant impact levels. The increase in noise levels during operation of the proposed project are expected to be imperceptible at the Mahanoy State Correctional Institution. Also, see response to Comment 89-1.

SUP24-2

I would like to direct your attention to an article that was published in the Pottsville Republican August 6, 2006, wherein, I made an effort to not only voice my opposition to this proposed project, but made several attempts to get assistance from the DOC, attornies, and other newspapers. I stated: "We reject the notion that the buildings here would protect the inmates (24hrs a day/seven days a week) and staff from prolonged exposure to the hazardous chemicals because the assertions that the buildings here are 'air-tight' is an outright falsehood!" In the WMPI Section 4.1.7.7 on Environmental Justice quotes "Serious air quality impacts to this population would not be appreciable with the exception of temporary fugitive dust during construction, and (2) the Mahoney State Correctional Institution is a sealed facility in which inmates/staff would not be exposed to outside air except during periods of outdoor activity (Section4.1.2.1). This research seems to have been done by a novice who is ignorant about the daily operations within this facility. It is obvious, that this statement is spurious, at best; and leaves me with the impression that they whimsically attempted to skirt around this vital issue about what truly awaits the entire staff/inmates, if, in fact, this plant were to be built adjacent 300ft. from this facility.

Response:

The reference to the correction facility as "sealed" has been corrected in the final EIS. Also, see responses to comments 31-26, 48-1, and 24-1.

SUP24-3

"…I would invite you to speak directly to the Superintendent (Edward J. Klem) and have him explain the daily arrangements of how the DOC runs this place. I am quite certain you wouldn't be surprised to findout that everyone is exposed to whatever fall-out chemicals that would come from this plant every night/day. These buildings have centralized air ducts that no matter what type of filter

you install could ultimately prevent or isolate everyone from the harm and exposure to these detrimental cancerous chemicals. So, I suggest that you either inquire with the Dept.'s Secy: Jeffrey A. Beard or Supt. Edward J. Klem to verify and confirm the actual exposure we face on a daily basis. In hindsight, the report misstates these factors in an attempt to create a false sense of security for the reader-the claims in this report are baseless and are bald face assertions made prematurely without any type of research or confirmation from a DOE official-doesn't exist. This raises several important questions. Where did WMPI officials get to their information from? Who is responsible for making this bald face assertion(s)? did anyone of them ever get a visitor's pass and tour this compound in order to arrive, at this conclusion? Categorically, this wasn't done-they just filled in the blanks thinking nobody would catch them in their own unsubstantiated remarks in the report. They failed or just never did any type of research to end up making these outright statements."

Response:

In the preparation of this EIS, DOE consulted with Edward K. Beleski, Mahanoy State Correctional Institution, Local President of Pennsylvania State Corrections Officer Association (see Comment 89-1) and revised the draft EIS in response to a comment letter from Robert Calik, Director of the Bureau of Operations, Pennsylvania Department of Corrections (see Comment letter 48).

SUP24-4

"Another issue of concern, is the section of 3.9/3.9.1 dealing with the human health aspect, which was my main issues layed-out in my article titled:"Local Community Potential Target For Environmental Terrorsm," which goest right into the hazards we could face, if this plant is built and the serious hazards facing the elderly residents of Schuylkill County and especially those w ho have an already compromised (weakened) immune system because of a number of present medical problems, which would result in their bodies not resisting the toxic chemical fall-out compounding their medical conditions and ultimately death. Due to the outdoor/indoor air quality-the amount of dust is a common problem in this place for both asthmatics and those with allergies, etc. both of these illnesses are mainly focused on the minority population, as referenced in the November 2005 Supplement under this section of human health. These are the kinds of things your office needs to hammer home in a public hearing. I would like to make the recommendation of having you either read/highlight certain parts of my article, at any future public hearings in order to inform the public, at large."

Response:

The potential effects of the proposed project on correctional facility inmates and other vulnerable populations are discussed in Sections 4.1.9 and 4.1.2.1. Fugitive dust emissions during construction would occur over a relatively short time period, and could readily be controlled by water-spray trucks. All maximum ambient concentrations of criteria air pollutants were estimated to be less than their corresponding significant impact levels.

SUP24-5

"However, I do realize <u>all</u> of the departments have tough choices to make; but that doesn't mean that commonsense and practical reasoning can be tossed out the window. I urge on behalf of the staff/inmate population, as well as all who contributed to this proposed projects research and interjected past/present analysis of the detrimental aspects of the chemical fall-out from this proposed plant to carefully weigh and consider all of the various factors (Human-beings) I have raised in the above-mentioned article. The pitfall is to succumb to the error in human thinking which is that a <u>dangerous plan is better than no plan!</u>"

Response:
The comment has been noted.

SUP24-6:
"In any event, I await for your response and comments in regards to the materials enclosed. Also, I almost forgot to mention, tat I do apologize for being tardy in my submission to have my concerns acknowledged for the public forum period ending on February 27, 2007. There were minor trivial things that had occurred on getting my hands on both EIS statements/supplements and review them before the deadline. I am not sure what did the Mahoney Township Supervisors Chairwomen, Sharon R. Chiao did with over 900 formal objection letters we inmates sent her office. You may want to make an inquiry about our efforts and what happened to those formal letter that were sent/received by her office. These formal letter should have been highlighted or made note of as a submission on behalf of the inmate populace. Please let me know, after inquiring about these formal letters, what did the Township do with them? They should have been sent them over to your office-the Dept. of Energy in order to make the submission deadline in order to acknowledge/highlight our concerns for the record. I am not sure, but, I am somewhat skeptical that the Mahoney Township never sent these letters to your office. Since, you never made any mention or documented anything regarding these letters in your December 2006 final draft edition which was considered the final EIS statement. Nowhere, in this supplement is there one formal objection letter attached for the record. We don't appreciate being black-balled as part of the population on voicing our concerns."

Response:
Four hundred letters of comment on the draft EIS were received from the inmates of the Mahanoy State Correctional Facility by way of Sharon Ciao, Chairman of the Mahanoy Township Board of Supervisors. These letters have been incorporated into the final EIS. See response to comment 92-1. Also, it should be noted that public comments on the draft EIS and DOE's responses are found in this final EIS (Appendix D). The purpose of the Supplement to the draft EIS was only to solicit comments on revised figures for CO_2 emissions from the proposed project. Public comments on the Supplement are also incorporated into this final EIS (Appendix E).

(*This comment letter to DOE was accompanied by a letter written by Mr. Arroyo and submitted to a variety of individuals, organizations, and newspapers. The accompanying letter expressed the same concerns*.)

Mar-12-2007 10:04am From-ESH DIVISION 4123864806 T-453 P.014/014 F-787

301 MOREA ROAD
FRACKVILLE, PA 17932

NETL
3/12/07

MARCH 6, 07

MS. Janice L. Bell
National Environmental policy Act
(NEPA) Document MANAGER
U.S Department of Energy
National Energy techoology Labratory
626 Cochrans Mill ROAD
Pittsburgh, PA 15236-0940

Dear, MS. Bell

Thank you for taking the time out to read this Letter the reason I'm writing you this Letter is to find out CAN you SEND Me some Information I'm Looking for. I recently was talking with A friend about the Gilberton Coal to - Clean fuels and power project. I live Very close to where they Plan on Building this plant and I Am Very worried about the DANGERS Because I have small Kids to worry about. I would like to know if you CAN SEND Me A Copy of the NOVEMBER 2005 DOE/EIS-0357 draft and A Copy of the supplement to the Draft Enviromental impact STATEMENT for the GilBerton Coal-TO-clean fuels and power project, That came out DecemBER 2006. DOE/EIS-0357D-S1. Any information you can SEND me on this MATTER will Be Very helpful. Thank you Again for your time AND Attention. you CAN get BACK to me AT the Above Address thank you Again. SUP25-1

X Edwin Pallmo #FL7757
301 MOREA ROAD
FRACKVILLE PA 17932

SUP25 3/12/07
Edwin Patino
301 Morea Rd.
Frackville, PA 17932

SUP25

"Thank you for taking the time out to read this letter. The reason I'm writing you this letter is to find out can you send me some information I'm looking for. I recently was talking with a friend about the Gilberton Coal to-Clean fuels and power project. I live very close to where they plan on building this plant and I am very worried about the dangers because I have small kids to worry about. I would like to know if you can send me a copy of the November 2005 DOE/EIS-0357 draft and a copy of the supplement to the Draft Environmental Impact Satement for the Gilberton Coal-to-Clean fuels and power project, that came out December 2006. DOE/EIS-03570-S1. Any information you can send me on this matter will be very helpful. Thank you again for your time and attention. You can get back to me at the above address. Thank you again."

Response:
Copies of the requested documents have been provided to Mr. Patino.

Supplemental Comments on Draft Environmental Impact Statement (DOE/EIS-0357D-S1)

for

Gilberton, Pennsylvania Coal-to-Liquids Project

API appreciates the opportunity to provide supplemental comments on the Department of Energy's (DOE) draft Environmental Impact Statement (DEIS) for the proposed Coal-to-Liquids (CTL) Project in Gilberton, Pennsylvania. API is a nationwide, not-for-profit trade association representing nearly 400 member companies engaged in all aspects of the oil and gas industry, including exploration and production, transportation, refining, distribution and marketing. API's member companies are interested in - and in some cases actively pursuing or participating in - carbon capture and storage projects. Given that the final EIS could set precedents for reviews of future projects, API and its members have a strong interest in the DEIS. We offer the following supplemental comments on the CO_2 geo-sequestration (CGS) statements contained in the Draft Environmental Impact Statement (DEIS).

API would like to clarify that our comments, submitted via email on February 27th, 2007, were not directed at the merits of the Coal-to-Liquids (CTL) project per se; only at the DEIS's characterization of the maturity of sequestration (i.e. storage) technology. API would also like to clarify that only in the case where geo-sequestration is being undertaken should "The project proponent…take the necessary steps to conduct an assessment of the nearby geology and also take into account nearby population centers with appropriate mitigation of risks." If CGS is not a part of the project, there is no reason to conduct this exercise. SUP26-1 SUP26-2

To repeat, carbon dioxide storage projects that are in the feasibility evaluation or planning stage in other areas of the USA may be affected by this DEIS. Because of this, statements regarding the maturity of sequestration technology need to be careful considered. If API can be of further assistance, please contact Steve Crookshank (202.682.8542; crookshanks@api.org) or Russell Jones (202.682.8545; jonesr@api.org) of API's Global Climate Team.

SUP26-1

API would like to clarify that our comments, submitted via email on February 27th, 2007, were not directed at the merits of the Coal-to-Liquids (CTL) project per se; only at the DEIS's characterization of the maturity of sequestration (i.e. storage) technology.

Response:

DOE appreciates the clarification of API's earlier comments. Also, see the response to Comment SUP21-5.

SUP26-2

API would also like to clarify that only in the case where geo-sequestration is being undertaken should "The project proponent…take the necessary steps to conduct an assessment of the nearby geology and also take into account nearby population centers with appropriate mitigation of risks." If CGS is not a part of the project, there is no reason to conduct this exercise.

Response:

DOE appreciates the clarification of API's earlier comments. CO_2 geo-sequestration is not part of the proposed action. However, the EIS discusses geo-sequestration in Section 5.1.4, as a potential future action. Also, see the responses to comments SUP21-5 and SUP21-7.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

February 27, 2007

Ms. Janice Bell
National Environmental Policy Act Document Manager
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochrans Mill Road
P.O. Box 10940
Pittsburgh, PA 15236-0940

RE: Supplemental Draft Environmental Impact Statement (DEIS) for the Gilberton Coal-to-Clean Fuels and Power Project. CEQ # 20050511

Dear Ms. Bell;

In accordance with the National Policy Act (NEPA) and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed the Supplemental Draft Environmental Impact Statement (SDEIS) for the above referenced project. The SDEIS was prepared specifically to correct information regarding carbon dioxide (CO_2) emissions from the proposed Gilberton plant; to provide information on the feasibility of carbon sequestration of the CO_2 emissions from the plant; and to present additional information regarding the CO_2-related cumulative impacts associated with potential future deployment of the proposed technology.

In response, the SDEIS has provided an analysis of the CO_2 emissions for the proposed Gilberton plant. According to the analysis, the facility will contribute an additional global emission of 2,282,000 tons per year of CO_2. Further, over the entire fuel cycle, the fuel generated by the facility will produce 80% more greenhouse gas emissions than from production and delivery of conventional petroleum-derived fuels. Finally, the SDEIS reports that CO_2 mitigation measures like carbon sequestration are considered not viable for an operational scale facility at this time. SUP27-1

As global climate change may be attributable to increases in CO_2 emissions and other greenhouse gasses, we question how the project aligns with the objectives of the Federal government's recently developed Global Climate Change Policy (see http://www.whitehouse.gov/ceq/global-change.html). This policy has three basic objectives:

- Slowing the growth of emissions
- Strengthening science, technology and institutions
- Enhancing international cooperation

We recommend that the FEIS provide a discussion of how the Gilberton project aligns with these SUP27-2

goals. We also recommend that adaptive management provisions be considered to assess CO_2 mitigation measures into the project's design as they become practicable. SUP27-3

Based on the concern raised above EPA has rated this SDEIS as Environmental Concerns and Insufficient information (EC-2) as described in our guidelines that can be found at: http://www.epa.gov/compliance/nepa/comments/ratings.html. Thank you for the opportunity to comment on this SDEIS. If you have any question please contact Kevin Magerr at (215) 814-5724.

Sincerely,

William Arguto
NEPA Team Leader

SUP27-1

Finally, the SDEIS reports that CO2 mitigation measures like carbon sequestration are considered not viable for an operational scale facility at this time.

Response:

DOE acknowledges that geologic carbon sequestration may be a reasonable option for other projects and sites, depending on project- and site-specific physical and economic conditions. Also, see the response to comment SUP21-7.

SUP27-2

As global climate change may be attributable to increases in CO2 emissions and other greenhouse gasses, we question how the project aligns with the objectives of the Federal government's recently developed Global Climate Change Policy (see http://www.whitehouse.gov/ceq/global-change.html). This policy has three basic objectives:

•Slowing the growth of emissions

•Strengthening science, technology and institutions

•Enhancing international cooperation

We recommend that the FEIS provide a discussion of how the Gilberton project aligns with these goals.

Response:

The proposed project was initiated before the cited policy (Global Climate Change Policy) was promulgated. However, the Gilberton Coal-to-Clean Fuels and Power Project was selected under the Clean Coal Power Initiative (CCPI), a program that is mentioned in the cited policy statement. In addition, the proposed project would develop an integrated technology that could contribute to the reduction of greenhouse gas emissions. The proposed project would demonstrate a CO_2 capture technology (concentrating the CO_2 stream exiting the gas cleanup system) at a commercial scale, and thus, would accelerate this technology's commercialization. This particular project, however, would not directly contribute to slowing the growth of greenhouse-gas emissions, nor is this project part of any of the international Global Climate Change partnerships.

SUP 27-3

We also recommend that adaptive management provisions be considered to assess CO_2 mitigation measures into the project's design as they become practicable.

Response:

The Final EIS outlines the carbon sequestration measures that could be implemented in the future. DOE does not, however, have the authority to direct the industrial participant to implement mitigation measures during future commercial operations of the proposed facilities.

APPENDIX G

COMPARISON OF THE POTENTIAL IMPACTS OF PETROLEUM COKE AND ANTHRACITE CULM USE AT THE PROPOSED GILBERTON COAL-TO-CLEAN FUELS AND POWER PROJECT

Comparison of the Potential Impacts of Petroleum Coke and Anthracite Culm Use at the Proposed Gilberton Coal-to-Clean Fuels and Power Project

The primary feedstock for the proposed Gilberton Coal-to-Clean Fuels and Power Project would be low-cost anthracite culm, which is a locally abundant, previously discarded resource that could accommodate fuel requirements during the demonstration period. Culm reserves controlled by WMPI are estimated to be sufficient to supply the proposed facilities for about 15 years, or to supply both the proposed facilities and the existing Gilberton Power Plant for about 11 years. Based on the applicant's proposal, the facilities would also be capable of using a blend of feedstock containing up to 25% petroleum coke. Petroleum coke is a high-sulfur, high-energy product having the appearance of coal. Oil refineries produce petroleum coke by heating and removing volatile organic compounds (VOCs) from the residue remaining after the refining process. This appendix compares some of the potential impacts of 100% anthracite culm use with the potential impacts from using a blended feedstock of 75% anthracite culm and 25% petroleum coke. Topics considered include carbon dioxide emissions, air emissions of sulfur compounds and toxic substances, solid wastes and byproduct production, and increased truck traffic.

Carbon Dioxide (CO_2) Emissions

Published values for potential CO_2 emissions from anthracite and petroleum coke are very similar. According to DOE's Energy Information Administration (EIA 2007), combustion of petroleum coke emits 225.13 pounds of CO_2 per million Btu, compared to 227.40 pounds of CO_2 per million Btu for anthracite coal. Similarly, ICF Inc. (1999) estimated the carbon content of fossil fuels in its Table 1.4-3. Carbon content coefficients were reported as 61.4 and 62.1 lbs of carbon/million Btu for petroleum coke and anthracite coal, respectively. The table below presents published values for carbon content in these fuels in units of pounds of CO_2 per million Btu, together with values presented in this EIS.

Source	Potential CO_2 emissions (lb CO_2 per million Btu)	
	Petroleum coke	Anthracite
EIA (2007)	225.1	227.4
ICF Inc. (1999)	225.1	227.7
Environment Canada	232.8	NA
EIA (1994)	NA	227.4 (Pennsylvania anthracite)
Table 2.1.3 of this EIS	206.5 and 228.8	239

These values support the conclusion that the use of a blended feedstock containing anthracite culm and up to 25% petroleum coke would not significantly change the CO_2 emissions from the proposed project. Also, the value for potential CO_2 emissions from anthracite culm that was used in the Section 4 of this EIS analysis is the highest value for any fuel reported in any of the cited sources, indicating that the EIS analysis of CO_2 emissions is conservative with respect to emissions from the primary feedstock.

Sulfur

Using anthracite culm as the primary feedstock to the proposed facilities, at least 13 tons per day of byproduct elemental sulfur would be produced and sold commercially. However, petroleum coke contains substantially more sulfur than anthracite culm (the sulfur contents of coke and culm are 5.8% and 0.3% by weight, respectively, as given in FEIS Table 2.1.3).

The proposed gas cleanup system would remove nearly all of the sulfur, whatever the feedstock to the proposed facilities. As described in Section 4, nearly complete H_2S removal from the shifted synthesis gas, occurring in the acid gas removal plant using a Rectisol unit would be required by the downstream F-T synthesis process. Remaining concentrations of H_2S would be as low as 1 to 5 ppm. The captured H_2S would be converted to marketable elemental sulfur in a Claus sulfur recovery unit, a process which should remove approximately 99.99% of the sulfur from the recovered acid gas stream. Further, the gas streams exiting the Rectisol, Claus, and SCOT units would be sent to a thermal oxidizer to oxidize any trace contaminants prior to being released through a stack to the atmosphere. Because of the high sulfur removal rates in these units and the oxidation of gases vented from them, H_2S odors should not be perceptible at and beyond the project boundaries.

Metals and Other Toxic Impurities

Petroleum coke composition varies with the source. However, because petroleum coke is produced from the heaviest fraction of petroleum, it typically concentrates the heavy metals found as trace impurities in petroleum, with the result that it may have higher levels of heavy metals than culm (Uhde 2007). Toxic polyaromatic hydrocarbons (PAHs) also are cited as an environmental concern associated with petroleum coke (Basabe 2006).

PAHs in the feedstock are expected to be destroyed during gasification. Industry experience with gasification indicates that most heavy metals in feedstock are collected in slag. However, fluxant additions may need to be adjusted to ensure that heavy metals are incorporated into slag. Also, some impurities can build up in the gasifier and adversely affect equipment and catalyst life (Trapp et al. 2004).

Any impurities that remain in the gas would be removed by the Rectisol process and other gas cleanup steps (Sasol Technology Inc., 2007). There is extensive industry experience with the Rectisol process, which was developed in the 1950s. However, Tennessee Eastman also uses activated carbon to remove mercury from gas produced at its Kingsport, Tennessee gasifier (Trapp et al. 2004).

Solid Wastes and Byproducts

Any change in fuel type is likely to affect the composition of the facilities' slag and other solid wastes and byproducts. Thus, use of petroleum coke likely would necessitate a new evaluation of the management of these materials, including suitability of the slag for beneficial use. For example, if the use of petroleum coke increased the potential for heavy metals to be released from slag, this could change the potential for adverse impacts from slag management and could necessitate changes in regulatory requirements for the management of slag produced by the proposed project.

As noted in Section 2, because of the low ash content of petroleum coke, its use would reduce the facilities' production of gasification slag, but production of byproduct sulfur would increase due to the higher sulfur content of petroleum coke.

Transportation Impacts

If used by the proposed facilities, petroleum coke would be delivered by truck or rail from undetermined locations outside of the local area. Like the culm and limestone, petroleum coke would be unloaded at the beneficiation plant, truck unloading area, or railroad car unloading area, as appropriate.

The routes used in the delivery of petroleum coke and the change in transportation impacts (if any) compared to those associated with the delivery of culm are not known.

Because petroleum coke has a higher sulfur content than culm, additional sulfur byproduct would be produced from the blended feedstock. This would result in additional truck trips to haul the sulfur offsite. It is estimated in Section 4.1.7.8 that 104 truck trips per day (52 to the site and 52 from the site) would deliver culm to the site, 40 truck trips per day (20 to the site and 20 from the site) would bring limestone, 22 truck trips per day (11 to the site and 11 from the site) would transport waste material to an offsite landfill, and 2 truck trips per day (1 to the site and 1 from the site) would transport sulfur from the site. The use of petroleum coke as an additional feedstock could increase sulfur transportation requirements by as many as 7 round trips per day.

The estimate of up to 7 round trips per day to remove the sulfur byproduct from petroleum coke use is conservative in that it assumes that petroleum coke would be 25% of the facility feed by weight and that the same feedstock throughput by weight would be retained. Petroleum coke has a much higher energy content per unit weight than anthracite culm (FEIS Table 2.1.3); thus, if the rate of feedstock throughput is based on energy content rather than weight, use of petroleum coke would result in less additional sulfur production than estimated here.

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