



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

JAN 11 2008

REPLY TO THE ATTENTION OF

E-13J

Richard A. Hargis  
National Energy and Technology Laboratory  
P.O. Box 10940  
Pittsburgh, PA 15236-0940

**RE: Draft Environmental Impact Statement, Mesaba Energy Project,  
CEQ # 20070471**

Dear Mr. Hargis:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Mesaba Energy Project. We offer our comments under the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act.

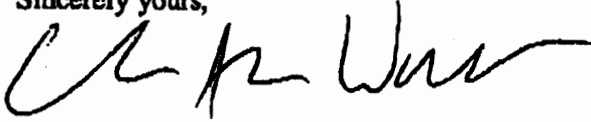
The Mesaba Energy Project is a two-phase 1,212-megawatt facility that has a project operating period of 20 years, provided the 1-year trial is successful. Phase I, proposed to be co-funded by DOE, is a 606-MW plant; Phase II is an identical, co-located and privately funded 606-MW plant. The project is proposed by Excelsior Energy under DOE's Clean Coal Power Initiative (CCPI) competitive solicitation. DOE selected the project to demonstrate commercial viability of the integrated gasification combined cycle (IGCC) process.

The preferred alternative is a 1,200-acre site near Taconite, MN (Itasca County); the alternative evaluated is an 810-acre site near Hoyt Lakes, MN (St. Louis County). Connected actions included road construction, road modifications, and right-of-way considerations for railroad spurs, power lines, and gas pipelines. Both locations are near Federal Class I air quality areas (Boundary Waters Canoe Area and Voyageurs National Park). The alternatives would have direct impacts to between 133 and 172 acres of wetlands.

Based on the information provided in the DEIS, EPA has assigned a rating of "EO-2." The "EO" indicates that we have environmental objections to the proposed project. The "2" indicates that additional information needs to be provided to support the impact analysis documented in the DEIS. This rating will be published in the Federal Register. Our objections are based on the alternatives analysis and direct impacts to wetlands, and we question whether the project will meet Clean Water Act Section 404 requirements for selecting the least environmentally damaging preferred alternative (LEDPA). Discussion of this issue and comments on other topic are enclosed.

Thank you for the opportunity to review and provide comments on the DEIS. We look forward to working with you and the cooperating federal agencies on resolving our comments. If you have any questions or would like to discuss our concerns and recommendations, please contact Anna Miller of my staff at either [miller.anna@epa.gov](mailto:miller.anna@epa.gov) or (312) 886-7060.

Sincerely yours,



Alan Walts  
Acting Director, Office of Enforcement and Compliance Assurance

Enclosures

**EPA Region 5 Comments for the  
Mesaba Energy Project  
Draft Environmental Impact Statement (DEIS)  
January 10, 2008**

**Project Purpose and Alternatives Analysis**

EPA questions whether the project meets Clean Water Act (CWA) Section 404 requirements for selecting the least environmentally damaging preferred alternative (LEDPA). The Clean Water Act (CWA) Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, at 40 CFR Part 230 (Guidelines) require that a sequence of planning steps be demonstrated that involves avoidance, minimization, and compensation for stream and wetland loss associated with unavoidable impacts to waters of the U.S. The avoidance requirements are found in 40 CFR 230.10(a), which state: "Except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." The selection of alternatives is determined in part by the project's purpose. EPA has questioned other CWA Section 404 permit applications (during the Army Corps of Engineers public notice process) where the purpose was too broad or too specific and excluded viable alternatives.

This project has four stated purposes, which are to: 1) demonstrate the commercial viability of IGCC technology on a utility-scale application, 2) help satisfy Minnesota's baseload power needs, 3) implement Minnesota's energy policies, 4) and utilize state and federal incentives under the Innovative Energy Project initiative. These four stated purposes are actually a combination of two project purposes and a set of modifiers that specify the applicant's desired conditions and benefits for the project. The demonstration of the commercial viability of IGCC technology on a utility-scale application (1) is one project purpose that can be accomplished anywhere in the United States, not just in Minnesota. The need to provide additional baseload power in Minnesota (2) is another project purpose, which can be accomplished using a number of different technologies, fuels, and locations within the State. It does not require the use of IGCC technology. The purpose to implement Minnesota's energy policies (3) is actually a desired benefit from the second project purpose. This benefit cannot be considered as a project purpose because it isn't associated with an actual project. Lastly, the purpose to utilize state and federal incentives (4) is a desired condition by the applicant that cannot be considered a project purpose. The economic savings and development benefits associated with these incentives do not define an actual project either.

The four stated purposes are very specific and conditional; as a result, they narrowly define the project such that all practicable alternatives except those in a portion of Minnesota known as the Taconite Tax Relief Area (TTRA) are excluded. Therefore, we would, in reviewing the CWA Section 404 permit, reject the project purposes as stated by the applicant and the resulting alternatives analysis upon which it is based. In general, EPA recommends that CWA Section 404 applicants satisfy the LEDPA requirement by evaluating alternatives related to a single project purpose, or a set of related purposes that

do not eliminate viable alternatives in favor of desirable project benefits which are separate from the project's purpose. From our understanding of DOE's goals, the basic project purpose is (1): To demonstrate the commercial viability of IGCC technology. This purpose would not restrict the alternatives analysis to the TTRA and would allow the pursuit of the least environmentally damaging, most practicable alternative available.

**Recommendations:**

We recommend that the Final EIS (FEIS) identify one project purpose: demonstrating the commercial viability of IGCC technology is the prime purpose for the project, as selected and presented by the DOE for funding under the CCPL. We also recommend that the alternatives analysis be based on this project purpose.

We recommend that the DOE/applicant explain why the economic benefits of only considering alternative locations in the TTRA are critical to the project, given the cost of wetlands mitigation and other costs tied to the present alternatives analyzed in the DEIS.

Based on our review of the DEIS, other alternatives within the TTRA were dismissed for unclear reasons that are not supported by data, maps, and other specific information presented in a format that compares alternatives directly to one another. A more quantitative discussion is needed for some of the eliminated alternatives. For example, in Appendix F1, the Hibbing Industrial Park site is designated "unavailable" without a specific reason.

**Recommendation:** We recommend that the DOE/applicant include quantitative information and data on siting variables, including cost, wetlands acreage and impacted wetlands types, to compare alternatives.

**Wetland Mitigation**

EPA recommends that the FEIS quantify mitigation for wetlands losses, identify potential locations and replacement ratios, and describe the project's mitigation plan and timeframe for both permanent and temporary impacts. EPA is concerned with the wetlands mitigation for this project for several reasons:

- 1) Wetlands already comprise a relatively high percentage of total land cover in the project area, meaning that few areas are available for mitigation;
- 2) Existing opportunities available for creating wetlands (reclaiming old mine pits and tailings basins) represent far less than ideal mitigation, especially for the variety and types of wetlands being impacted (which include forested wetlands and bogs); and
- 3) The demand for wetland mitigation in the watershed is high, due to other projects under development (e.g. mining projects) that will also incur significant wetland impacts.

Therefore, mitigation will require thorough planning. In addition, the loss of forested and bog wetland habitat typically require higher than 1:1 mitigation ratios because of the

extended period of time (decades) that their functions will be lost while mitigation areas are establishing themselves.

**Recommendation:** We recommend that the FEIS include specific information on how the applicant intends to provide mitigation for the wetland impacts incurred by this project, including information on potential mitigation sites, commitments to replace lost wetlands with a comparable type, expected mitigation ratios, and long-term mitigation monitoring.

#### **Permanent and Temporary Wetland Impacts**

The West Range Site has estimated permanent impacts of 172 acres of wetlands; the East Range Site has estimated permanent impacts of 133 acres. The DEIS is unclear on what amount of temporary impact will occur to shrub, forested, and bog wetlands through the placement of utility lines and the construction of transportation corridors. The impacts to shrub, forested, and bog wetlands would not be temporary because only emergent vegetation would be allowed to return to these maintained rights of way.

**Recommendation:** We suggest the FEIS reevaluate wetlands impacts from utility lines and transportation corridors as more than temporary impacts and provide mitigation of these impacts under the mitigation plan.

#### **Wetlands Classification**

The use of the Circular 39 classification system to describe the wetlands impacted is problematic because it does not provide sufficient information on the wetland types being impacted. For example, Circular 39 Type 7 (wooded swamp) does not distinguish between hardwood swamps and coniferous swamps, which are two very different types of plant communities. Similarly, Circular 39 Type 2 does not differentiate between sedge meadow and calcareous fen; these are distinctly different wetland community types and each would be assessed differently regarding what constitutes adequate mitigation.

**Recommendation:** EPA recommends that the FEIS use the Eggers and Reed system (1997) or the Cowardin Classification. Both Eggers and Reed and Cowardin provide more specific plant community information that will be useful and necessary to determine adequate mitigation. We recommend their use to identify wetland impacts as well as to describe the wetland communities to be established for mitigation.

#### **Air Emissions**

EPA is aware that the Minnesota Pollution Control Agency (MPCA) and the project applicant are discussing air emissions and air permitting requirements. EPA will continue to discuss air permitting factors with MPCA, which has authority for direct implementation of the Clean Air Act in Minnesota.

We appreciate that the DEIS includes projected annual emissions for CO<sub>2</sub> and discusses the general effects of greenhouse gas emissions and global climate change. We also note that the DEIS has described how the facility will be designed for possible retrofitting of

CO<sub>2</sub> capture technology. This information is useful to the general public in understanding the project.

#### **Recreational Use of Canestee Mine Pit**

The applicant has requested that Canestee Mine Pit be closed for recreational uses to meet security requirements for process water intake facilities, should the West Range alternative (the DEIS's preferred alternative) be selected; therefore the loss of this resource is a potential outcome of this project.

Recommendation: EPA recommends that the DEIS discuss whether the Minnesota Department of Natural Resources' decision on the applicant's request to close recreational use of the pit would affect site selection or possibly result in changes to the water management plan described in the DEIS. The DEIS should also identify that a feature of the West Range proposal is the elimination of the pit's recreational use, when the Canestee Mine Pit is discussed in other sections (such as in the project description and in the water management plan). This information will be useful for public reviewers to understand the project's impacts.

#### **Water Quality**

EPA is aware that the MPCA and the project applicant are discussing water management and water quality, pursuant to the National Pollutant Discharge Elimination System (NPDES) permit program under the Clean Water Act. EPA will discuss water quality and discharge permitting factors with MPCA, which has authority for direct implementation of the NPDES program in Minnesota, as necessary.