

**DEPARTMENT OF ENERGY****Notice of Intent To Prepare an Environmental Impact Statement for the Proposed McIntosh Unit 4 Pressurized Circulating Fluidized Bed Demonstration Project**

**AGENCY:** U.S. Department of Energy.

**ACTION:** Notice of intent to prepare an Environmental Impact Statement.

**SUMMARY:** The U.S. Department of Energy (DOE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Parts 1500-1508), and the DOE NEPA regulations (10 CFR Part 1021), to assess the potential environmental and human health impacts of a proposed project to expand the C. D. McIntosh, Jr. Power Plant in Lakeland, Florida. The proposed project, selected under DOE's Clean Coal Technology Program, would demonstrate both Pressurized Circulating Fluidized Bed (PCFB) and Topped PCFB technologies. The proposed project would involve the construction and operation of a nominal 238 MWe (megawatts of electric power) combined-cycle power plant designed to burn a range of low- to high-sulfur coals. The EIS will help DOE decide whether to provide 44% of the funding for the currently estimated \$440,000,000 proposed project.

The purpose of this Notice is to inform the public about the proposed action; present the schedule for the action; announce the plans for a public scoping meeting; invite public participation in (and explain) the scoping process that DOE will follow to comply with the requirements of NEPA; and solicit public comments for consideration in establishing the proposed scope and content of the EIS. The EIS will evaluate the proposed project and reasonable alternatives.

**DATES:** To ensure that the full range of issues related to this proposal are addressed, DOE invites comments on the proposed scope and content of the EIS from all interested parties. All comments must be received by May 21, 1999, to ensure consideration. Late comments will be considered to the extent practicable. In addition to receiving comments in writing and by telephone, DOE will conduct a public scoping meeting in which agencies, organizations, and the general public are invited to present oral comments or suggestions with regard to the range of actions, alternatives, and impacts to be considered in the EIS. The scoping

meeting will be held in the City of Lakeland's City Commission Chambers, 228 South Massachusetts Avenue, Lakeland, Florida at 7 p.m. on April 13, 1999. On the day of the meeting, from 1 p.m. until 7 p.m. preceding the meeting, DOE will host an informational session for interested parties in a conference room adjoining the City Commission Chambers. Displays and other forms of information about the proposed action and its location will be available, and DOE personnel will be available to answer questions. The public is invited to this informal session to learn more about the proposed action.

**ADDRESSES:** Written comments and requests to participate in the public scoping process should be addressed to: Mr. Joseph Martin, Document Manager, Federal Energy Technology Center, U.S. Department of Energy, 3610 Collins Ferry Road, Morgantown, WV 26507-0880

Individuals who would like to provide comments and/or otherwise participate in the public scoping process should contact Mr. Martin directly at telephone 304-285-4447; toll free number 1-800-432-8330 (ext. 4447); fax 304-285-4469; or e-mail [jmarti@fetc.doe.gov](mailto:jmarti@fetc.doe.gov).

**FOR FURTHER INFORMATION CONTACT:** To obtain additional information about this project or to receive a copy of the draft EIS for review when it is issued, contact Mr. Joseph Martin at the address provided above. For general information on the DOE NEPA process, please contact:

Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Assistance (EH-42), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585-0119, 202-586-4600 or leave a message at 1-800-472-2756

**SUPPLEMENTARY INFORMATION:****Background and Need for Agency Action**

Under Public Law 102-154, the U.S. Congress authorized and funded DOE to conduct cost-shared Clean Coal Technology Program projects for the design, construction, and operation of facilities that significantly advance the efficiency and environmental performance of coal-using technologies and apply to either new or existing facilities. DOE's purpose for this proposed action, which is known as the McIntosh Unit 4 PCFB Demonstration Project, is to establish through successful technology demonstration, the commercial viability of a Topped PCFB combustion combined-cycle plant. Funding for this action would be

made available through the novation (substitution of a new obligation for an old one) of two previous Clean Coal Technology Program awards: (1) Cooperative Agreement DE-FC21-91MC27364, DMEC-1 Limited Partnership's PCFB Demonstration Project; and (2) Cooperative Agreement DE-FC21-94MC31261, Four Rivers Energy Modernization Project. The decision to combine the two projects into one at a new location was made because of diminished prospects for proceeding at their original sites due to uncertainties regarding regional power requirements. The City of Lakeland, however, is in an area experiencing substantial growth in demand for electricity. In addition, combining the two projects would save taxpayers more than \$30,000,000 in Federal cost sharing (compared to building two projects separately) without sacrificing the original objectives.

Over the next several decades, increases in demand for electric power and replacement of a significant amount of electric power generating capacity that is approaching the end of its design service life are expected to require the construction of new generating stations. The most abundant domestic fuel, coal, continues to represent an attractive energy source for new generating capacity. The proposed McIntosh Unit 4 PCFB Demonstration Project would fulfill an established DOE programmatic need to demonstrate advanced technology that may improve the environmental performance and efficiency of coal-fired power generation facilities.

Since the early 1970s, DOE and its predecessor agencies have pursued research and development programs that include long-term, high-risk activities through the proof-of-concept stage in developing innovative concepts for a wide variety of coal technologies. However, the availability of a technology at the proof-of-concept stage is not sufficient to ensure its continued development and subsequent commercialization. Before any technology can be considered seriously for commercialization, it must be demonstrated. The financial risk associated with technology demonstration generally is too high for the private sector to assume without strong incentives. Congress established the Clean Coal Technology Program to accelerate the development of innovative technologies to meet the nation's near-term energy and environmental goals, to reduce technological risk to the business community to an acceptable level, and to provide incentives for the private

sector to pursue innovative research and development directed at providing solutions to long-range energy supply problems.

### Proposed Action

The proposed action is for DOE to provide, through a cooperative agreement with the City of Lakeland, Florida, cost-shared financial assistance for the design, construction, and operation of the proposed McIntosh Unit 4 PCFB Demonstration Project, described below. The proposed project would last 121 months after novation of prior agreements (see Background and Need for Agency Action) and would cost a total of approximately \$440,000,000; DOE's share would be approximately \$195,000,000 (44%).

The proposed project would be constructed at the existing C.D. McIntosh, Jr. Power Plant, which is located in the City of Lakeland, Florida along the northeastern shore of Lake Parker. The current McIntosh Plant is an industrial site encompassing about 530 acres. The Plant includes three fossil-fuel-fired steam electric units, two diesel-powered peaking units, and one simple-cycle gas turbine peaking unit; water treatment facilities; fuel handling facilities (oil storage and coal handling and storage); air pollution control facilities; wastewater treatment facilities; by-product treatment and storage facilities; and an ash disposal area. Further, the City of Lakeland is adding to the McIntosh Plant a simple-cycle power generation unit that will use a Siemens Westinghouse 501G turbine to generate a nominal 250 MWe. In addition to the McIntosh Plant, the City of Lakeland owns and operates the Larsen Power Plant, which also is located on Lake Parker approximately 2 miles south of the McIntosh facility. The Larsen Plant provides 243 megawatts of electric power capacity and is fueled by oil and natural gas.

The Lake Parker area has been extensively mined for phosphate; several ponds and wetlands have formed in depressions left from these past mining activities. Mud Lake, a small wetland, is located to the north and adjacent to the fence line of the McIntosh Plant, but outside the proposed footprint of the PCFB Demonstration. A significant natural resource, the Class I Chassahowitzka National Wildlife Refuge, is located approximately 55–60 miles northwest of Lakeland. The McIntosh Plant site lies above the 100-year statistical flood frequency elevation.

PCFB technology is a combined-cycle power generation system that is based on the pressurized combustion of solid

fuel to generate steam, combined with the expansion of hot pressurized flue gas through a gas turbine. The technology can be subdivided into the basic PCFB cycle (first generation or "Non-Topped") and Topped PCFB cycle (second generation or "Advanced").

In the basic PCFB cycle, hot pressurized flue gas is expanded through a gas turbine at a temperature of less than 1400°F. Tubes contained in the PCFB generate, superheat, and reheat steam for use with the most advanced steam turbines. Hot, pressurized combustion gas leaving the PCFB can drive a gas turbine for additional power generation. Combustion and fluidizing air is supplied from the compressor section of the gas turbine to the PCFB combustor located inside a pressure vessel. Dried coal and sorbent (usually limestone) are fed to the combustor using a conventional pneumatic transport system employing lock hoppers. The limestone sorbent captures sulfur *in situ* as sulfur dioxide, and nitrogen oxides are controlled by temperature and pressure. Particulate matter is removed from the flue gas exiting the combustor using cyclones and barrier filters located between the PCFB and the gas turbine. The hot gas cleaned by the filter system expands through the gas turbine, exhausts to a heat recovery unit, and vents to a stack. The heat recovered from both the combustor and the heat recovery unit is used to raise, superheat and reheat steam for use in the steam turbine. Approximately 25% of the total power produced is generated in the gas turbine, and the balance is generated in the steam turbine.

The topped PCFB technology integrates a carbonizer island and gas turbine topping combustor into the PCFB cycle. The carbonizer is an air-blown jetting, fluidized bed operating at 1600°F to 1800°F. Dried coal and sorbent are fed to the carbonizer using a conventional pneumatic transport system employing lock hoppers. The coal is devolatilized and partially gasified to produce a low-BTU synthesis gas and a solid residue (called char) that is removed from the carbonizer and transferred to the PCFB for combustion. The limestone sorbent captures sulfur as calcium sulfide and also acts as a stabilizer to prevent bed agglomeration and to aid in partial gasification. The particulate matter (char plus reacted and unreacted sorbent) in the synthesis gas is removed using a cyclone and hot gas particulate filter system similar to that used for the PCFB. This collected material, together with the main char flow from the carbonizer, is transferred to the PCFB to complete combustion

and sulfur removal. The hot clean synthesis gas is burned in the topping combustor to raise the turbine inlet temperature to the firing temperature of the gas turbine.

The planned project would involve two sequential demonstrations as follows:

(1) The first demonstration would be a PCFB cycle that would come on-line in July 2002 and would provide approximately 145 MWe of coal-fired generating capacity. The system would have a gas turbine inlet temperature under 1400°F.

(2) The second demonstration, which would be constructed and brought on-line approximately two years later, would convert the PCFB system to a Topped PCFB system by adding a carbonizer island that includes a topping combustor. The addition of the carbonizer system would generate a coal-derived, low-BTU synthesis gas that would be burned in the topping combustor to raise the turbine inlet temperature to more than 1900°F. In order to provide the total power that the City of Lakeland needs from the project, an auxiliary coal-fired heat recovery steam generator would provide the necessary steam superheating and feedwater heating. The net effect would be an additional 93 MWe of power output.

Under the proposed action, the McIntosh Unit 4 would be designed to burn a wide range of coals including high ash-high sulfur coals that are expected to become available in the future at substantially lower prices than mid-to-low-sulfur bituminous coals. Further, limestone for the circulating fluidized bed would be obtained from a number of nearby Florida limestone quarries; ash produced during the processing would be disposed of in an existing landfill or marketed to others after such markets are identified.

The majority of the project's water makeup requirements would be met by using secondary treated sewage effluent in the cooling tower. Service water, which is potable water from the public water utility, would be used only for boiler water makeup feed to the demineralizer system. Wastewater from the PCFB Demonstration unit would be treated on site, by neutralization and removal of heavy metals, before being returned to the Glendale wastewater treatment facility, which is owned by the City of Lakeland, for discharge.

To ensure that the PCFB technology meets applicable emissions limits, gaseous emissions from the plant would be controlled, as required, using state-of-the-art technology. For example, the amount of high sulfur coal would be

reduced or sulfur dioxide would be removed using limestone scrubbers; the oxides of nitrogen would be controlled by managing combustion temperature and pressure, or by using selective non-catalytic reduction technology; and particulate matter would be removed by barrier filters or electrostatic precipitators.

#### Alternatives

Section 102(2)(C) of NEPA requires that agencies discuss the reasonable alternatives to the proposed action in an EIS. The purpose for agency action determines the range of reasonable alternatives. Congress established the Clean Coal Technology Program with a specific purpose: to demonstrate the commercial viability of technologies that use coal in more environmentally benign ways than conventional coal technologies. Congress also directed DOE to pursue the goals of the legislation by means of partial funding (cost sharing) of projects owned and controlled by non-Federal government sponsors. This statutory requirement places DOE in a much more limited role than if the Federal Government were the owner and operator of the project. In the latter situation, for example, DOE would be responsible for a comprehensive review of reasonable alternatives. However, in dealing with an applicant, the scope of alternatives is necessarily more restricted. It is appropriate in such cases for DOE to give substantial weight to the applicant's needs in establishing a project's reasonable alternatives.

An overall strategy for compliance with NEPA was developed for the Clean Coal Technology Program that includes consideration of both programmatic and project-specific environmental impacts during and after the process of selecting a project. As part of the NEPA strategy, the EIS for the proposed McIntosh Unit 4 demonstration project will tier off the final Programmatic Environmental Impact Statement (PEIS) that was issued by DOE in November 1989 (DOE/EIS-0146). Two alternatives were evaluated in the PEIS: (1) the no-action alternative, which assumed that the Clean Coal Technology Program was not continued and that conventional coal-fired technologies with flue gas desulfurization and nitrogen oxide controls, to meet New Source Performance Standards, would continue to be used; and (2) the proposed action, which assumed that the clean coal projects would be selected and funded, and that successfully demonstrated technologies would undergo widespread commercialization by the year 2010.

The range of reasonable alternatives to be considered in the EIS for the

proposed McIntosh Unit 4 demonstration project is narrowed in accordance with the overall NEPA strategy. The EIS will include an analysis of the no-action alternative as a reasonable alternative to the proposed action of providing cost-shared funding support for the proposed project. DOE will consider other reasonable alternatives that may be suggested during the public scoping period.

Under the no-action alternative, DOE would not provide partial funding for the design, construction, and operation of the project. In the absence of DOE funding, the McIntosh Unit 4 facility probably would not be constructed, although the City of Lakeland could construct the proposed project without DOE cost-shared funding. If the proposed McIntosh Unit 4 is not built, other alternative sources for electric power would be necessary for the City of Lakeland to meet future demands of its customers. Such alternatives could include purchasing power from other sources, adding generation capacity that does not rely on PCFB technology (e.g., natural gas), or using some other current technology. Lakeland could also consider repowering old existing units at the McIntosh site. In the EIS, DOE will consider these variations of the no-action alternative.

Because of DOE's limited role of providing cost-shared funding for the proposed McIntosh Unit 4 PCFB project, and because of advantages associated with the proposed location, DOE does not plan to evaluate alternative sites for the proposed project. An existing plant site is preferred because the costs associated with a "greenfield site" in an undisturbed area would be much higher and the environmental impacts likely would be greater than at an existing facility.

Project activities would include engineering and design, permitting, fabrication and construction, testing, and demonstration of PCFB technology and Topped PCFB technology. The EIS will assume that the proposed facility would continue its commercial operation after the demonstration of Topped PCFB technology is completed. DOE plans to complete the EIS and issue a Record of Decision within 15 months of this Notice, assuming timely delivery of information from the City of Lakeland necessary for development of the EIS.

#### Preliminary Identification of Environmental Issues

The following issues have been tentatively identified for analysis in the EIS. This list, which is based on analyses of similar projects, is not

intended to be all-inclusive nor a predetermined set of potential impacts, but is presented to facilitate public comment on the scope of the EIS. Additions to or deletions from this list may occur as a result of the scoping process. The issues include:

(1) Atmospheric resources: potential air quality impacts resulting from air emissions during current and future operations of the McIntosh Plant (e.g., effects of ground-level concentrations of criteria pollutants and trace metals on surrounding residential areas and sensitive areas (such as the Chassahowitzka National Wildlife Refuge, (a Class I refuge located approximately 55–60 miles northwest of Lakeland));

(2) Water resources: potential effects on surface water and groundwater resources consumed and discharged, including any impacts on wetlands;

(3) Infrastructure and land use: potential effects resulting from the transport of additional coal and limestone required for the proposed project;

(4) Solid waste: pollution prevention and waste management practices, including impacts caused by generation, treatment, transport, storage, and disposal of ash;

(5) Construction: impacts associated with noise, traffic patterns, and construction-related emissions;

(6) Changes in the sources of coal for the overall plant;

(7) Environmental Justice issues with respect to the surrounding community;

(8) Cumulative effects that result from the incremental impacts of the proposed action when added to other past, present, and reasonably foreseeable future actions.

#### Public Scoping Process

To ensure that all issues related to this proposal are addressed, DOE will conduct an open process to define the scope of the EIS. The public scoping period will run until May 21, 1999. Interested agencies, organizations, and the general public are encouraged to submit comments or suggestions concerning the content of the EIS, issues and impacts to be addressed in the EIS, and the alternatives that should be analyzed. Scoping comments should clearly describe specific issues or topics that the EIS should address in order to assist DOE in identifying significant issues.

Written, e-mailed, faxed, or telephoned comments should be communicated by May 21, 1999 (see ADDRESSES). A public scoping meeting to be conducted by DOE will be held in the City of Lakeland City Commission

Chambers on April 13, 1999, at 7 p.m. The address of the City Commission Chambers is: 228 South Massachusetts Avenue, Lakeland, Florida. In addition, DOE will hold an informational session at the same location from 1 p.m. to 7 p.m. on April 13. Displays and other materials and DOE personnel will be available to provide information about the proposed action.

DOE requests that anyone who wishes to speak at this public scoping meeting contact Mr. Joseph Martin, either by phone, fax, computer, or in writing (see **ADDRESSES** in this Notice). Individuals who do not make advance arrangements to speak may register at the meeting and will be given the opportunity to speak after all previously scheduled speakers have made their presentations. Speakers who wish to make presentations longer than five minutes should indicate the length of time desired in their request. Depending on the number of speakers, it may be necessary to limit speakers to five minute presentations initially, with the opportunity for additional presentations as time permits. Speakers can also provide additional written information to supplement their presentations. Oral and written comments will be given equal consideration.

DOE will begin the meeting with an overview of the proposed McIntosh Unit 4 demonstration project. A presiding officer will be designated by DOE to chair the meeting. The meeting will not be conducted as an evidentiary hearing, and speakers will not be cross-examined.

However, speakers may be asked to clarify their statements to ensure that DOE fully understands the comments or suggestions. The presiding officer will establish the order of speakers and provide any additional procedures necessary to conduct the meeting.

Issued in Washington, DC, this 22nd day of March, 1999.

**Peter N. Brush,**

*Principal Deputy Assistant Secretary,  
Environment, Safety and Health.*

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BILLING CODE 6450-01-P

## DEPARTMENT OF ENERGY

### Notice Inviting Financial Assistance Applications

**AGENCY:** U.S. Department of Energy (DOE), Federal Energy Technology Center (FETC).

**ACTION:** Notice inviting financial assistance applications.

**SUMMARY:** The Department of Energy announces that it intends to conduct a competitive Program Solicitation and award financial assistance (grants) to successful applicants. Awards will be made to a limited number of applicants based on a scientific and engineering evaluation of the responses received to determine the relative merit of the approach taken in response to this offering by the DOE, and funding availability.

**FOR FURTHER INFORMATION CONTACT:** Nancy Toppetta, U.S. Department of Energy, Federal Energy Technology Center, Acquisition and Assistance Division, P.O. Box 10940, MS 921-143, Pittsburgh, PA 15236-0940, Telephone: (412)892-5715, FAX: (412)892-6216, E-mail: toppetta@fetc.doe.gov. The solicitation (available in Portable Document Format (PDF)) will be released on DOE's FETC World Wide Web Server Internet System (<http://www.fetc.doe.gov/business/solicit>) on or about March 23, 1999.

#### SUPPLEMENTARY INFORMATION:

*Title of Solicitation:* "Improved Natural Gas Storage Well Remediation"

*Objectives:* Through Program Solicitation No. DE-PS26-99FT40060, the DOE seeks applications from qualified sources for research and development efforts that address storage well damage issues associated with underground geologic reservoirs, such as depleted oil/gas fields, aquifers, etc.; however, such research and development efforts must *not* include underground storage tanks or mined salt caverns. The general objectives of this research and development effort are to (1) characterize the geochemical conditions of underground geologic natural gas storage reservoirs and injection/withdrawal wells for a selected set of damage mechanisms that lead to decreased performance characteristics and (2) design and successfully demonstrate practical and cost effective remedial techniques for those damage mechanisms. The damage mechanisms to be considered are (1) inorganic precipitates, (2) hydrocarbons, organic residues, and production chemicals, (3) bacterial fouling and plugging, and (4) particulate fouling and plugging.

*Eligibility:* Applications are welcome from all qualified sources. The solicitation will contain a complete description of the technical evaluation factors and relative importance of each factor.

*Areas of Interest:* DOE is interested in development of the above described mechanisms for improved remediation

design, especially for effective shallow damage remedial treatments.

*Awards:* DOE anticipates issuing financial assistance (grants) for each project selected. DOE reserves the right to support or not support, with or without discussions, any or all applications received in whole or in part, and to determine how many awards may be made through the solicitation subject to funds available in this fiscal year.

*Solicitation Release Date:* The Program Solicitation is expected to be ready for release on or about March 23, 1999. Applications must be prepared and submitted in accordance with the instructions and forms contained in the Program Solicitation.

**Richard D. Rogus,**

*Contracting Officer, Acquisition and Assistance Division.*

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## DEPARTMENT OF ENERGY

### Notice Inviting Financial Assistance Applications

**AGENCY:** U.S. Department of Energy (DOE), Federal Energy Technology Center (FETC).

**ACTION:** Notice inviting financial assistance applications.

**SUMMARY:** The Department of Energy announces that it intends to conduct a competitive Program Solicitation and award financial assistance (cooperative agreements) for the program entitled "Development of Feed System for Alternative Feedstocks for Gasification." Through this solicitation, FETC seeks to support applications in the following areas of interest: (1) Wet Gasification Feed Systems, and (2) Dry Gasification Feed Systems. Applications will be subjected to a review by a DOE technical panel, and awards will be made to a limited number of applicants based on a scientific and engineering evaluation of the responses received to determine the relative merit of the approach taken in response to this offering by the DOE, and funding availability.

**FOR FURTHER INFORMATION CONTACT:** William Mundorf, U.S. Department of Energy, Federal Energy Technology Center, Acquisition and Assistance Division, P.O. Box 10940, MS 921-143, Pittsburgh, PA 15236-0940, Telephone: (412) 892-4483, FAX: (412) 892-6216, E-mail: mundorf@fetc.doe.gov. The solicitation (available in both WordPerfect 6.1 and Portable Document Format (PDF)) will be released on DOE's