

COAL UTILIZATION RESEARCH COUNCILSM

Chairman

Nicholas K. Akins
Executive Vice President
Generation
American Electric Power

Treasurer

Marshall Mazer
The Babcock & Wilcox Company

Executive Director

Ben Yamagata
Coal Utilization Research Council

MEMORANDUM

TO: Members of the Coal Utilization Research Council

FROM: Shannon Angielski

DATE: February 4, 2008

RE: Analysis of the President's FY 2009 Budget Request to Congress

The President released his FY 2009 Budget Request to the Congress today. This memorandum will review the coal program budget issues of importance to CURC.

Background

The FY 2009 total coal program budget request is \$647.5 million, up by approximately \$146 million over FY 2008 enacted levels. Of this amount, \$156 million is being requested for the Secretary's proposed alternative FutureGen program; \$85 million is requested for the Clean Coal Power Initiative (CCPI), and \$406.5 million is being requested for the core R&D program (up approximately \$32 million from FY 2008). Importantly, of the \$406.5 million being made available for the core R&D program, \$23.8 million is being requested for what is called an "NETL coal research program" which has not previously been accounted for as part of the President's ongoing "Coal Research Initiative." This program has traditionally been, and still is, incorporated into and made a part of the NETL Program Direction account and not through one of the coal R&D line items. This NETL activity is not included in the CURC budget chart (attached) which we have used in prior years to account for the funding requested and provided to the various coal R&D programs. If this NETL coal research program amount is removed from the overall request for R&D programs then the actual DOE coal R&D budget is reduced to \$382.7 million. Attached is a chart that compares the program funding levels between FY 2008 enacted levels and the FY 2009 budget request.

As with last year's budget request, a large portion of the funding for FY 2009 is derived from previously appropriated clean coal funds. According to the budget documents released, \$149 million of the \$156 requested for the alternative FutureGen program is the amount remaining from previously appropriated funds for the clean coal technology program.

FutureGen

As many of you know, last week the Secretary of Energy announced DOE's intent to restructure the FutureGen program. CURC is examining the impacts to coal technology development if the FutureGen project is abandoned. We are considering a response from CURC to this proposed action and will provide further details once an agreed-upon response strategy is clearly defined. I have attached

1050 Thomas Jefferson St., NW
Suite 700
Washington, DC 20007

(202) 298-1850
(202) 338-2416 FAX

CURC@VNF.COM
www.coal.org

the documents that were released by the DOE in making this announcement. In executing its alternative program, DOE has issued a Request for Information (RIF) on its proposal to restructure the FutureGen project. A copy of the RIF is attached. CURC will provide recommendations shortly in response to the RIF.

Under the proposed alternative program, DOE seeks to conduct multiple 300 to 600 MW scale IGCC-CCS demonstration projects that would capture and sequester at least one million tons of CO₂ annually for storage in saline aquifers. There is very spirited Congressional opposition to the DOE proposal but it is unclear at this time if FutureGen will continue or if DOE will succeed in restructuring the program.

Clean Coal Power Initiative

The President has requested \$85 million for the Clean Coal Power Initiative in FY 2009, representing a \$15.6 million increase over the FY 2008 enacted level. When the FY 2009 budget request is included with previously appropriated funds that are not obligated to other ongoing projects, it appears that approximately \$224 million might be available for the 3rd solicitation. Another \$100 million could be made available from a project that was selected under CCPI Round 1, but to date DOE has not determined if that project will be successful in securing needed financing in order for the project to proceed. If not, then the funds currently set aside for that project might become available to the CCPI Round 3 solicitation. Finally, it is still uncertain when the final CCPI 3 solicitation will be released.

Core R&D Program

Carbon Sequestration. The Carbon Sequestration program increase of \$30 million is to support continuation of the large scale sequestration tests in Phase III of the Regional Partnerships and will augment and focus on the MMV being conducted. Depending on the results of a scientific needs assessment being conducted in FY 2008 and the ability of additional project proposals to meet those needs, additional projects may be awarded in FY 2008 or FY 2009. In its budget justification, DOE indicates that the additional funding will also support CO₂ capture projects.

IGCC. The \$15.5 million increase for the Integrated Gasification Combined Cycle (UGCC) program is to support construction of the ion transport membrane (ITM) air separation unit at intermediate scale at an IGCC facility to provide data for integrated operation with a gas turbine for the design of a commercial-scale module for carbon capture. The DOE budget justification indicates that other activities will focus on gas cleaning and conditioning, the transport gasifier, coal/biomass co-feeding and gasification, advanced refractory materials, and computational fluid dynamic modeling and dynamic simulation of IGCC plants.

Existing Plants. An increase of \$3.9 million is being requested for the Innovations for Existing Plants program in order to support projects that focus on carbon capture and storage, including post combustion technologies to capture CO₂ emissions. The DOE budget justification indicates that the program supports post-combustion capture, separation and compression of CO₂ from coal fired utility boilers. According to DOE, the increase will raise the number of projects and widen the scope of research included in the Carbon Sequestration program, including (1) initiation of slipstream CO₂ control efforts to investigate or improve the capabilities of technologies to recover, reuse, and/or dispose of CO₂ emissions; (2) conducting several slipstream tests for post-combustion CO₂ capture on different boiler configurations; and (3) selecting promising concepts to examine the feasibility of innovative approaches

to mitigate CO₂ emissions including post-combustion capture, oxy-fuel combustion, and efficiency improvements.

Turbines. The President requested an increase of \$4.2 million for the Turbines program in order to support hydrogen turbine development, including refinement of combustor designs and the development and testing of the turbine expander.

Fuel Cells. The \$4.5 million increase for fuel cells is to support four Solid State Energy Conversion Alliance (SECA) teams to develop systems to support delivery of \$400/kW fuel cells.

Fuels & Liquids. The \$10 million budget requested for the Fuels program, directed towards hydrogen development, is approximately \$14.8 million less than the enacted FY 2008 level. Congress is likely to restore some or all of the \$14 million difference in funding in FY 2009. Budget constraints for the overall fossil energy program will put pressure on finding ways to fund this program as well as the other coal programs.

Advanced Research. The Advanced Research program is approximately \$10.6 million less in the FY 2009 budget because, according to DOE, the program will have completed a Congressionally directed report on liquefied natural gas. The reduction is also being reflected in the sensors and controls innovations projects, which are focused on membrane development. DOE indicates that offsets are being provided through increases in studies to identify challenges to technologies and advanced concepts applicable to fossil energy systems. According to the detailed budget justification, this program will provide approximately \$4 million in FY 2009 for continued ultra supercritical materials research and another \$3 million for high temperature materials research.

NETL Coal Research Program. The DOE budget justification indicates that the \$23.8 million in FY 2009 supports Federal staff who are directly associated with conducting research activities of the Coal Research and Development program. This staff includes technicians, engineers and scientists who support the NETL Office of Research and Development (in-house research and development) and the NETL Albany site. Activities of the staff include in-house research in support of the following program areas: Integrated Gasification Combined Cycle; Advanced Turbines; Carbon Sequestration; Fuels; Fuel Cells; and Advanced Research.

DOE Loan Guarantee Program

The President is proposing to extend the Congressional authorization period through which it can provide commitments guarantee loans under Title XVII of the Energy Policy Act of 2005. The FY 2008 omnibus Energy and Water Appropriations Act authorized the Department to issue loan guarantees until September 30, 2009. The President's budget extends that authorization through fiscal years 2010 and 2011 and specifies amounts and uses of loan guarantee authority for those periods consistent with Congressional guidance accompanying the FY 2008 appropriations act. Of the total provided, \$20.0 billion will be available through fiscal year 2010 to support projects such as uranium enrichment, coal based power, advanced coal gasification, renewables and electricity delivery. The remaining \$18.5 billion will be available through fiscal year 2011 to support nuclear power facilities. The \$38.5 billion provided in FY 2008 through 2011 will be in addition to the \$4.0 billion in authority provided in FY 2007 under P.L. 110-05 Section 20320(a) for a total loan volume limitation of \$42.5 billion.

The Secretary of Energy is scheduled to appear before the Senate Energy & Natural Resources Committee on Wednesday, February 6 in an oversight hearing on the President's FY 2009 DOE budget request. Additional hearings will be conducted throughout the coming weeks and CURC will monitor and report on these hearings.