AMENDMENT TO H.R. 1933

OFFERED BY MR. UDALL OF COLORADO

Page 2, lines 16 and 17, strike "energy systems" and insert "electric power generating systems".

Page 3, lines 6 through 8, strike "ENERGY RESEARCH AND DEVELOPMENT UNDERLYING CARBON CAPTURE AND STORAGE TECHNOLOGIES" and insert "FUNDAMENTAL SCIENCE AND ENERGY RESEARCH AND DEVELOPMENT AND DEMONSTRATION SUPPORTING CARBON CAPTURE AND STORAGE TECHNOLOGIES".

Page 3, line 14, insert ", or convert carbon dioxide into products that lead to overall reduction of carbon dioxide emissions" after "store carbon dioxide".

Page 3, line 20, insert "and carbon use" after "sequestration".

Page 3, line 21, strike "improved" and insert "advanced".

Page 4, lines 1 and 4, redesignate clauses (ii) and (iii) as clauses (iii) and (iv), respectively.

Page 3, after line 23, insert the following new clause:

"(ii) development of new or improved technologies that reduce the cost and increase the efficacy of the compression of carbon dioxide required for the storage of carbon dioxide;".

Page 4, line 3, strike "and".

Page 4, line 6, strike the period and insert "; and".

Page 4, after line 6, insert the following new clause:

"(v) research and development of new and improved technologies for carbon use, including recycling and reuse of carbon dioxide.".

Page 4, line 19, amend clause (iv) to read as follows:

"(iv) deep saline formations;

Page 4, line 24, strike the period and insert "; and".

Page 4, after line 24, insert the following new clause:

"(vi) deep geologic systems containing basalt formations.".

Page 5, line 20, strike "and".

Page 6, line 2, strike the period and insert "; and".

Page 6, after line 2, insert the following new clause:

"(viii) to support Environmental Protection Agency efforts, in consultation with other agencies, to develop a scientifically sound regulatory framework to enable commercial-scale sequestration operations while safeguarding human health and underground sources of drinking water.".

Page 6, line 3, insert "SEQUESTRATION" after "LARGE-SCALE".

Page 6, line 7, insert ", not including the FutureGen project," after "sequestration tests".

Page 6, line 20, and page 7, line 1, redesignate paragraphs (4) and (5) as paragraphs (5) and (6), respectively.

Page 6, after line 19, insert the following:

"(C) SOURCE OF CARBON DIOXIDE FOR LARGE-SCALE SEQUESTRATION DEMONSTRATIONS.—Preference should be given to carbon dioxide captured from coal-fired electric generating plants when practical, but this preference shall not delay the implementation of the large-scale sequestration tests under this paragraph.

The Secretary shall also give preference to purchases of carbon dioxide at market value from industrial and electric generation coal facilities. To the extent feasible, the Secretary shall prefer test projects from industrial and electric generation coal facilities that capture, transport, and sequester carbon dioxide in an integrated system. Until electric generation coal facilities, either new or existing, are operating with carbon dioxide capture technologies, other sources of carbon dioxide should be pursued under this paragraph.

"(D) DEFINITION.—For purposes of this paragraph, the term 'large-scale' means the injection of more than 1,000,000 metric tons of carbon dioxide annually, or a scale that demonstrably exceeds the necessary thresholds in key geologic transients to validate the ability continuously to inject quantities on the order of several million metric tons of industrial carbon dioxide annually for a large number of years.

"(4) LARGE-SCALE DEMONSTRATION OF CARBON DIOXIDE CAPTURE TECHNOLOGIES.—

"(A) IN GENERAL.—The Secretary shall carry out at least 3 and no more than 5 dem-

onstrations, including, precombustion capture, post-combustion capture, and oxycombustion, for the large-scale capture of carbon dioxide from industrial sources of carbon dioxide, including facilities that generate electric energy from fossil fuels, refine petroleum, manufacture iron or steel, manufacture cement or cement clinker, manufacture commodity chemicals, and ethanol and fertilizer plants. Consideration may be given to capture of carbon dioxide from industrial facilities and electric generation carbon sources that are near suitable geological reservoirs and could continue sequestration.

"(B) SCOPE OF AWARD.—An award under this paragraph shall be only for the portion of the project that carries out the large-scale capture (including purification and compression) of carbon dioxide, as well as the cost of transportation and injection of carbon dioxide.

Page 7, line 4, insert ", except that the Federal share of a project under paragraph (4) shall not exceed 50 percent" after "section 988(b)".

Page 7, lines 5 through 10, strike subsection (d) and insert the following new subsection:

"(d) AUTHORIZATION OF APPROPRIATIONS.—

"(1) IN GENERAL.—There are authorized to be appropriated to the Secretary for carrying out this section, other than subsection (c)(4)—

"(A) $240,000,000 for fiscal year 2008;

"(B) $240,000,000 for fiscal year 2009;

"(C) $240,000,000 for fiscal year 2010; and

"(D) $240,000,000 for fiscal year 2011.

"(2) CARBON CAPTURE.—There are authorized to be appropriated to the Secretary for carrying out subsection (c)(4)—

"(A) $180,000,000 for fiscal year 2009;

"(B) $180,000,000 for fiscal year 2010;

"(C) $180,000,000 for fiscal year 2011; and

"(D) $180,000,000 for fiscal year 2012.".

At the end of the bill, add the following new sections:

SEC. 3. REVIEW OF LARGE-SCALE PROGRAMS.

The Secretary of Energy shall enter into an arrangement with the National Academy of Sciences for an independent review and oversight, beginning in 2011, of the programs under section 963(c)(3) and (4) of the Energy Policy Act of 2005, as added by section 2 of this Act, to

ensure that the benefits of such programs are maximized. Not later than January 1, 2012, the Secretary shall transmit to the Congress a report on the results of such review and oversight.

SEC. 4. SAFETY RESEARCH.

(a) PROGRAM.—The Assistant Administrator for Research and Development of the Environmental Protection Agency shall conduct a research program to determine procedures necessary to protect public health, safety, and the environment from impacts that may be associated with capture, injection, and sequestration of greenhouse gases in subterranean reservoirs.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated for carrying out this section $5,000,000 for each fiscal year.

AMENDMENT TO H.R. 1933

OFFERED BY MR. COSTELLO OF ILLINOIS

At the end of the bill, insert the following new section:

SEC. 3. GEOLOGICAL SEQUESTRATION TRAINING AND RESEARCH.

(a) STUDY.—

(1) IN GENERAL.—The Secretary of Energy shall enter into an arrangement with the National Academy of Sciences to undertake a study that—

(A) defines an interdisciplinary program in geology, engineering, hydrology, environmental science, and related disciplines that will support the Nation's capability to capture and sequester carbon dioxide from anthropogenic sources;

(B) addresses undergraduate and graduate education, especially to help develop graduate level programs of research and instruction that lead to advanced degrees with emphasis on geological sequestration science;

(C) develops guidelines for proposals from colleges and universities with substantial capabilities in the required disciplines that wish to

implement geological sequestration science programs that advance the Nation's capacity to address carbon management through geological sequestration science; and

(D) outlines a budget and recommendations for how much funding will be necessary to establish and carry out the grant program under subsection (b).

(2) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary of Energy shall transmit to the Congress a copy of the results of the study provided by the National Academy of Sciences under paragraph (1).

(3) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for carrying out this subsection $1,000,000 for fiscal year 2008.

(b) GRANT PROGRAM.—

(1) ESTABLISHMENT.—The Secretary of Energy, through the National Energy Technology Laboratory, shall establish a competitive grant program through which colleges and universities may apply for and receive 4-year grants for—

(A) salary and startup costs for newly designated faculty positions in an integrated geo-

logical carbon sequestration science program; and

(B) internships for graduate students in geological sequestration science.

(2) RENEWAL.—Grants under this subsection shall be renewable for up to 2 additional 3-year terms, based on performance criteria, established by the National Academy of Sciences study conducted under subsection (a), that include the number of graduates of such programs.

(3) INTERFACE WITH REGIONAL GEOLOGICAL CARBON SEQUESTRATION PARTNERSHIPS.—To the greatest extent possible, geological carbon sequestration science programs supported under this subsection shall interface with the research of the Regional Carbon Sequestration Partnerships operated by the Department of Energy to provide internships and practical training in carbon capture and geological sequestration.

(4) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary for carrying out this subsection such sums as may be necessary.