

109<sup>TH</sup> CONGRESS  
1<sup>ST</sup> SESSION

# S. 957

To establish a clean coal power initiative, and for other purposes.

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IN THE SENATE OF THE UNITED STATES

APRIL 28, 2005

Mr. BUNNING (for himself and Ms. LANDRIEU) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

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## A BILL

To establish a clean coal power initiative, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Clean Coal Power Ini-  
5 tiative Act of 2005”.

6 **SEC. 2. CLEAN COAL POWER INITIATIVE.**

7 (a) IN GENERAL.—

8 (1) ESTABLISHMENT.—The Secretary of En-  
9 ergy (referred to in this Act as the “Secretary”)  
10 shall establish a clean coal power initiative under

1 which the Secretary shall provide assistance under  
2 this Act for projects described in paragraph (2).

3 (2) PROJECTS.—To be eligible to receive assist-  
4 ance under this Act, a project shall advance effi-  
5 ciency, reliability, environmental performance, and  
6 cost competitiveness significantly more than the level  
7 of technologies that are in commercial service or  
8 have been demonstrated on a scale that the Sec-  
9 retary determines is sufficient to demonstrate that  
10 commercial service is viable, as determined by the  
11 Secretary.

12 (b) TECHNICAL CRITERIA.—

13 (1) GASIFICATION PROJECTS.—

14 (A) ALLOCATION OF FUNDS.—In allocating  
15 the funds made available under section 5(a),  
16 the Secretary shall ensure that at least 60 per-  
17 cent of the funds are used to fund projects  
18 using coal-based gasification technologies, in-  
19 cluding—

- 20 (i) gasification combined cycle;  
21 (ii) gasification fuel cells;  
22 (iii) gasification coproduction; and  
23 (iv) hybrid gasification or combustion.

24 (B) TECHNICAL MILESTONES.—

25 (i) PERIODIC DETERMINATION.—

1 (I) IN GENERAL.—The Secretary  
2 shall periodically establish technical  
3 milestones specifying the emission and  
4 thermal efficiency levels that coal gas-  
5 ification projects under this Act shall  
6 be designed, and reasonably expected,  
7 to achieve.

8 (II) RESTRICTIVE MILE-  
9 STONES.—The technical milestones  
10 shall become more restrictive during  
11 the period of the clean coal power ini-  
12 tiative.

13 (ii) 2021 GOALS.—The Secretary shall  
14 establish the periodic milestones so as to  
15 achieve by the year 2021 coal gasification  
16 projects able—

17 (I) to remove at least 99 percent  
18 of the sulfur compounds;

19 (II) to emit not more than .05  
20 lbs of NO<sub>x</sub> per million Btu;

21 (III) to achieve at least 90 per-  
22 cent reductions in mercury emissions;  
23 and

24 (IV) to achieve a thermal effi-  
25 ciency of at least—

1 (aa) 50 percent for coal of  
2 more than 9,000 Btu;

3 (bb) 48 percent for coal of  
4 7,000 to 9,000 Btu; and

5 (cc) 46 percent for coal of  
6 less than 7,000 Btu.

7 (2) OTHER PROJECTS.—

8 (A) ALLOCATION OF FUNDS.—The Sec-  
9 retary shall ensure that not more than 40 per-  
10 cent of the funds made available under section  
11 5(a) are used to fund projects other than those  
12 described in paragraph (1)(A).

13 (B) TECHNICAL MILESTONES.—

14 (i) PERIODIC DETERMINATION.—

15 (I) IN GENERAL.—The Secretary  
16 shall periodically establish technical  
17 milestones specifying the emission and  
18 thermal efficiency levels that projects  
19 other than those described in para-  
20 graph (1)(A) shall be designed, and  
21 reasonably expected, to achieve.

22 (II) RESTRICTIVE MILE-  
23 STONES.—The technical milestones  
24 shall become more restrictive during

1 the period of the clean coal power ini-  
2 tiative.

3 (ii) 2015 GOALS.—The Secretary shall  
4 establish the periodic milestones so as to  
5 achieve by the year 2015 projects able—

6 (I) to remove at least 97 percent  
7 of sulfur dioxide;

8 (II) to emit not more than .08  
9 lbs of NO<sub>x</sub> per million Btu;

10 (III) to achieve at least 70 per-  
11 cent reductions in mercury emissions;  
12 and

13 (IV) to achieve a thermal effi-  
14 ciency of at least—

15 (aa) 43 percent for coal of  
16 more than 9,000 Btu;

17 (bb) 41 percent for coal of  
18 7,000 to 9,000 Btu; and

19 (cc) 39 percent for coal of  
20 less than 7,000 Btu.

21 (3) CONSULTATION.—Before establishing the  
22 technical milestones under paragraphs (1)(B)(i)(I)  
23 and (2)(B)(i)(I), the Secretary shall consult with—

24 (A) the Administrator of the Environ-  
25 mental Protection Agency; and

- 1 (B) interested persons, including—  
2 (i) coal producers;  
3 (ii) industries using coal;  
4 (iii) organizations that promote coal  
5 or advanced coal technologies;  
6 (iv) environmental organizations; and  
7 (v) organizations representing work-  
8 ers.

9 (4) EXISTING UNITS.—In the case of projects  
10 at units in existence on the date of enactment of this  
11 Act, in lieu of the thermal efficiency requirements  
12 described in paragraphs (1)(B)(ii) and (2)(B)(ii),  
13 the milestones shall be designed to achieve an overall  
14 thermal design efficiency improvement, compared to  
15 the efficiency of the unit as operated, of not less  
16 than—

17 (A) 7 percentage points for coal of more  
18 than 9,000 Btu;

19 (B) 6 percentage points for coal of 7,000  
20 to 9,000 Btu; or

21 (C) 4 percentage points for coal of less  
22 than 7,000 Btu.

23 (5) PROJECT SELECTION.—

24 (A) IN GENERAL.—In evaluating project  
25 proposals, the Secretary shall select those

1 projects that are expected to demonstrate  
2 progress toward achieving the milestones de-  
3 scribed in paragraphs (1)(B)(i) and (2)(B)(i).

4 (B) SITE ELEVATION AND RANK OF  
5 COAL.—In evaluating project proposals to  
6 achieve the milestones described in paragraphs  
7 (1)(B)(i), (2)(B)(i), and (4) and in determining  
8 progress toward achieving the milestones de-  
9 scribed in paragraphs (1)(B)(ii), (2)(B)(ii), and  
10 (4), the Secretary shall consider and make ad-  
11 justments for the Btu value of various coals  
12 and the elevation of the site at which a project  
13 is proposed to be constructed.

14 (C) EVALUATION.—The Secretary shall  
15 base project selection on an evaluation of  
16 whether the construction and operation of the  
17 proposed project will progress toward achieving  
18 the milestones described in paragraphs  
19 (1)(B)(ii) and (2)(B)(ii) through subsequent  
20 replications of the technology.

21 (6) PERMITTED USES.—

22 (A) IN GENERAL.—In carrying out this  
23 Act, the Secretary shall give high priority to  
24 projects that include, as part of the project—

- 1 (i) the reduction of the demand for  
2 natural gas if deployed; or  
3 (ii) the separation or capture of car-  
4 bon dioxide.

5 (B) THERMAL EFFICIENCY LIMITATION.—  
6 For purposes of subparagraph (A)(ii), the ther-  
7 mal efficiency goals of paragraphs (1), (2), and  
8 (4) shall not apply to projects that separate and  
9 capture at least 50 percent of the potential  
10 emissions of carbon dioxide by a facility.

11 (c) FINANCIAL CRITERIA.—The Secretary shall not  
12 provide financial assistance under this Act for a project  
13 unless the recipient documents to the satisfaction of the  
14 Secretary that—

15 (1) the recipient is financially viable without the  
16 receipt of additional Federal assistance;

17 (2) the recipient will provide sufficient informa-  
18 tion to the Secretary to enable the Secretary to en-  
19 sure that the funds are spent efficiently and effec-  
20 tively; and

21 (3) a market exists for the technology being  
22 demonstrated or applied, as evidenced by statements  
23 of interest in writing from potential purchasers of  
24 the technology.



1 (d) FINANCIAL ASSISTANCE.—The Secretary shall  
2 provide assistance to projects that, as determined by the  
3 Secretary—

4 (1) meet the requirements of subsections (a),  
5 (b), and (c); and

6 (2) are likely—

7 (A) to achieve overall cost reductions in  
8 the use of coal to generate useful forms of en-  
9 ergy; and

10 (B) to improve the competitiveness of coal  
11 among various forms of energy in order to  
12 maintain a diversity of fuel choices in the  
13 United States to meet electricity generation or  
14 chemical feedstock requirements.

15 (e) FEDERAL SHARE.—The Federal share of the cost  
16 of a coal or related technology project carried out using  
17 funds made available under this Act shall not exceed 50  
18 percent, as determined by the Secretary.

19 (f) APPLICABILITY.—No technology, or level of emis-  
20 sion reduction, solely by reason of the use of the tech-  
21 nology, or the achievement of the emission reduction, by  
22 1 or more facilities receiving assistance under this Act,  
23 shall be considered to be—

24 (1) adequately demonstrated for purposes of  
25 section 111 of the Clean Air Act (42 U.S. C. 7411);

1           (2) achievable for purposes of section 169 of  
2 that Act (42 U.S. C. 7479); or

3           (3) achievable in practice for purposes of sec-  
4 tion 171 of that Act (42 U.S. C. 7501).

5       (g) REPORT.—Not later than 1 year after the date  
6 of enactment of this Act, and once every 2 years thereafter  
7 through 2013, the Secretary, in consultation with other  
8 appropriate Federal agencies, shall submit to Congress a  
9 report describing—

10           (1)(A) the technical milestones described in this  
11 section; and

12           (B) how those milestones ensure progress to-  
13 ward meeting the requirements of paragraphs  
14 (1)(B)(ii) and (2)(B)(ii) of subsection (b);

15           (2) how the technologies being demonstrated  
16 under the clean coal power initiative demonstrate  
17 methods and equipment that can be used in broader  
18 commercial applications in addition to electric power  
19 generation; and

20           (3) the status of projects that receive assistance  
21 under this Act.

22       (h) CONSIDERATION OF APPLICATIONS.—Not later  
23 than 90 days after the date of enactment of this Act, the  
24 Secretary shall issue rules providing that any application  
25 for funding for a project under this section shall be ap-

1 proved or rejected not later than 180 days after the date  
2 on which the application was submitted, unless otherwise  
3 agreed to by the applicant.

4 **SEC. 3. CLEAN COAL CENTERS OF EXCELLENCE.**

5 (a) IN GENERAL.—The Secretary shall award com-  
6 petitive, merit-based grants to institutions of higher edu-  
7 cation (as defined in section 102 of the Higher Education  
8 Act of 1965 (20 U.S.C. 1002)) for the establishment of  
9 centers of excellence for energy systems of the future, in-  
10 cluding clean coal technology.

11 (b) BASIS FOR GRANTS.—The Secretary shall award  
12 grants under this section to such institutions of higher  
13 education that show the greatest potential for advancing  
14 new clean coal technologies.

15 **SEC. 4. RESEARCH PROGRAMS.**

16 (a) OBJECTIVES.—The Secretary shall conduct a pro-  
17 gram of technology research, development, demonstration,  
18 and commercial application for coal and power systems,  
19 including programs to facilitate production and generation  
20 of coal-based power through—

- 21 (1) innovations for existing plants;
- 22 (2) integrated gasification combined cycle;
- 23 (3) advanced combustion systems;
- 24 (4) turbines for synthesis gas derived from coal;

- 1           (5) carbon capture and sequestration research  
2           and development;
- 3           (6) coal-derived transportation fuels and chemi-  
4           cals;
- 5           (7) solid fuels and feedstocks;
- 6           (8) advanced coal-related research;
- 7           (9) advanced separation technologies; and
- 8           (10) a joint project for permeability enhance-  
9           ment in coals for natural gas production and carbon  
10          dioxide sequestration.

11          (b) PROGRAM.—

12           (1) IN GENERAL.—The Secretary shall establish  
13          a program of research and development to develop  
14          cost effective carbon dioxide capture technologies  
15          that could be—

16                   (A) applicable to the existing fleet of coal  
17                   fired units; or

18                   (B) used in new coal combustion systems.

19           (2) OBJECTIVES.—The program objectives shall  
20          be—

21                   (A) to develop add-on carbon dioxide cap-  
22                   ture technologies, including adsorption and ab-  
23                   sorption techniques and chemical processes, to  
24                   remove the carbon dioxide from flue gas, pro-

1           ducing concentrated streams of carbon dioxide  
2           potentially amenable to sequestration;

3           (B) to develop technologies for the existing  
4           fleet of coal units that would directly produce  
5           concentrated streams of carbon dioxide poten-  
6           tially amenable to sequestration; and

7           (C) to increase the efficiency of the overall  
8           combustion system to reduce the quantity of  
9           carbon dioxide emissions released from the sys-  
10          tem per megawatt generated.

11          (3) CARBON SEQUESTRATION.—In conjunction  
12          with the program under paragraph (1), the Sec-  
13          retary shall continue to pursue a robust carbon se-  
14          questration program in conjunction with the private  
15          sector, through regional carbon sequestration part-  
16          nerships.

17          (c) COST AND PERFORMANCE GOALS.—

18           (1) IN GENERAL.—In carrying out programs  
19           under subsections (a) and (b), in each of fiscal years  
20           2008 and 2016 and in each year following fiscal  
21           year 2021, the Secretary shall identify cost and per-  
22           formance goals for coal-based technologies that  
23           would permit the continued cost-competitive use of  
24           coal for electricity generation, as chemical feed-  
25           stocks, and as transportation fuel.

1           (2) ESTABLISHING GOALS.—In identifying cost  
2 and performance goals under paragraph (1), the  
3 Secretary shall—

4           (A) consider activities and studies under-  
5 taken as of the date of enactment of this Act  
6 by industry in cooperation with the Department  
7 of Energy in support of the goals;

8           (B) consult with interested persons, includ-  
9 ing—

10           (i) coal producers;

11           (ii) industries using coal;

12           (iii) organizations that promote coal  
13 and advanced coal technologies;

14           (iv) environmental organizations; and

15           (v) organizations representing work-  
16 ers;

17           (C) not later than 120 days after the date  
18 of enactment of this Act, publish in the Federal  
19 Register proposed draft cost and performance  
20 goals for public comment; and

21           (D) not later than 180 days after the date  
22 of enactment of this Act and every 4 years  
23 thereafter, submit to Congress a report that—

1 (i) describes final cost and perform-  
2 ance goals for technologies described in  
3 paragraph (1);

4 (ii) includes a list of technical mile-  
5 stones; and

6 (iii) explains how programs authorized  
7 in subsection (a) will not duplicate activi-  
8 ties carried out under sections 2 and 3.

9 **SEC. 5. AUTHORIZATIONS OF APPROPRIATIONS.**

10 (a) CLEAN COAL POWER INITIATIVE.—

11 (1) IN GENERAL.—There is authorized to be  
12 appropriated to the Secretary to carry out sections  
13 2 and 3 \$200,000,000 for each of fiscal years 2006  
14 through 2013, to remain available until expended.

15 (2) REPORT.—Not later than March 31, 2007,  
16 the Secretary shall submit to Congress a report that  
17 includes a 10-year plan that includes—

18 (A) a detailed assessment of whether the  
19 aggregate assistance levels provided under para-  
20 graph (1) are the appropriate assistance levels  
21 for the clean coal power initiative;

22 (B) a detailed description of how proposals  
23 for assistance under the clean coal power initia-  
24 tive will be solicited and evaluated, including a  
25 list of all activities expected to be undertaken;

1 (C) a detailed list of technical milestones  
2 for each coal and related technology that will be  
3 pursued; and

4 (D) a detailed description of how the clean  
5 coal initiative will avoid problems enumerated in  
6 Government Accountability Office reports on  
7 the Clean Coal Technology Program of the De-  
8 partment of Energy, including problems that  
9 have resulted in unspent funds and projects  
10 that failed either financially or scientifically.

11 (b) RESEARCH PROGRAMS.—

12 (1) IN GENERAL.—There are authorized to be  
13 appropriated to the Secretary to carry out clean coal  
14 technology research, development, demonstration,  
15 and commercial application activities, including ac-  
16 tivities described in section 4(a)—

17 (A) \$259,000,000 for fiscal year 2006;

18 (B) \$272,000,000 for fiscal year 2007;

19 (C) \$285,000,000 for fiscal year 2008;

20 (D) \$298,000,000 for fiscal year 2009;

21 and

22 (E) \$308,000,000 for fiscal year 2010.

23 (2) PROGRAM.—There is authorized to be ap-  
24 propriated to the Secretary to carry out section 4(b)



- 1 \$40,000,000 for each of fiscal years 2006 through
- 2 2014, to remain available until expended.

○