

**AMENDMENT TO COMMITTEE PRINT #1**  
**OFFERED BY MR. DOYLE OF PENNSYLVANIA, MR.**  
**MARKEY OF MASSACHUSETTS, MR. MATHE-**  
**SON OF UTAH, AND MS. ESHOO OF CALI-**  
**FORNIA**

Page 52, line 10, through page 92, line 6, amend  
subtitle D to read as follows:

1           **Subtitle D—Commercial and**  
2           **Federal Building Efficiency**

3   **SEC. 141. DEFINITIONS.**

4       In this subtitle:

5           (1) **CONSORTIUM.**—The term “Consortium”  
6       means the Green Building Partnership Consortium  
7       created in response to section 142(c)(1) to represent  
8       the private sector in a Public-Private Partnership to  
9       promote high-performance green buildings and zero-  
10       net-energy commercial buildings.

11          (2) **DIRECTOR.**—The term “Director” means  
12       the individual appointed to the position established  
13       under section 142(b).

14          (3) **FEDERAL FACILITY.**—

15                (A) **IN GENERAL.**—The term “Federal fa-  
16       cility” means any building or facility the in-

1 tended use of which requires the building or fa-  
2 cility to be—

3 (i) accessible to the public; and

4 (ii) constructed or altered by or on be-  
5 half of the United States.

6 (B) EXCLUSIONS.—The term “Federal fa-  
7 cility” does not include a privately-owned resi-  
8 dential or commercial structure that is not  
9 leased by the Federal Government.

10 (4) HIGH-PERFORMANCE GREEN BUILDING.—

11 The term “high-performance green building” means  
12 a building that, during its life-cycle—

13 (A) reduces energy, water, and material re-  
14 source use, and in the case of a new or ren-  
15 ovated Federal building, meets or exceeds the  
16 standards under section 305(a)(3) of the En-  
17 ergy Conservation and Production Act (42  
18 U.S.C. 6834(a)(3));

19 (B) improves indoor environmental quality  
20 including, reducing indoor pollution, improving  
21 thermal comfort, and improving lighting and  
22 acoustic environments that affect occupant  
23 health and productivity;

24 (C) reduces negative impacts on the envi-  
25 ronment throughout the life-cycle of the build-

1 ing, including air and water pollution and waste  
2 generation;

3 (D) increases the use of environmentally  
4 preferable products, including biobased, recycled  
5 content, and nontoxic products with lower life-  
6 cycle impacts;

7 (E) increases reuse and recycling opportu-  
8 nities;

9 (F) integrates systems in the building;

10 (G) reduces the environmental and energy  
11 impacts of transportation through building loca-  
12 tion and site design that support a full range  
13 of transportation choices for users of the build-  
14 ing; and

15 (H) considers indoor and outdoor effects of  
16 the building on human health and the environ-  
17 ment, including—

18 (i) improvements in worker produc-  
19 tivity;

20 (ii) the life-cycle impacts of building  
21 materials and operations; and

22 (iii) other factors that the Office con-  
23 siders to be appropriate.

24 (5) LIFE-CYCLE.—The term “life-cycle”, with  
25 respect to a high-performance green building, means

1 all stages of the useful life of the building (including  
2 components, equipment, systems, and controls of the  
3 building) beginning at conception of a green building  
4 project and continuing through site selection, design,  
5 construction, landscaping, commissioning, operation,  
6 maintenance, renovation, deconstruction or demoli-  
7 tion, removal, and recycling of the green building.

8 (6) LIFE-CYCLE ASSESSMENT.—The term “life-  
9 cycle assessment” means a comprehensive system  
10 approach for measuring the environmental perform-  
11 ance of a product or service over the life of the prod-  
12 uct or service, beginning at raw materials acquisition  
13 and continuing through manufacturing, transpor-  
14 tation, installation, use, reuse, and end-of-life waste  
15 management.

16 (7) LIFE-CYCLE COSTING.—The term “life-cycle  
17 costing”, with respect to a high-performance green  
18 building, means a technique of economic evaluation  
19 that—

20 (A) sums, over a given study period, the  
21 costs of initial investment (less resale value), re-  
22 placements, operations (including energy use),  
23 and maintenance and repair of an investment  
24 decision; and

25 (B) is expressed—

1 (i) in present value terms, in the case  
2 of a study period equivalent to the longest  
3 useful life of the building, determined by  
4 taking into consideration the typical life of  
5 such a building in the area in which the  
6 building is to be located; or

7 (ii) in annual value terms, in the case  
8 of any other study period.

9 (8) OFFICE.—The term “Office” means the Of-  
10 fice of High-Performance Green Buildings estab-  
11 lished under section 142(a).

12 (9) PRACTICES.—The term “practices” mean  
13 design, financing, permitting, construction, commis-  
14 sioning, operation and maintenance, and other prac-  
15 tices that contribute to achieving zero-net-energy  
16 commercial buildings.

17 (10) SECRETARY.—The term “Secretary”  
18 means the Secretary of Energy.

19 (11) ZERO-NET-ENERGY.—The term “zero-net-  
20 energy commercial building” means a commercial  
21 building that is designed, constructed, and operated  
22 to—

23 (A) require a greatly reduced quantity of  
24 energy to operate;

1 (B) meet the balance of energy needs from  
2 sources of energy that do not produce green-  
3 house gases;

4 (C) therefore result in no net emissions of  
5 greenhouse gases; and

6 (D) be economically viable.

7 **SEC. 142. HIGH-PERFORMANCE GREEN BUILDINGS.**

8 (a) **ESTABLISHMENT OF OFFICE.**—Not later than 60  
9 days after the date of enactment of this Act, the Secretary  
10 shall establish within the Office of Energy Efficiency and  
11 Renewable Energy an Office of High-Performance Green  
12 Buildings.

13 (b) **DIRECTOR.**—

14 (1) **APPOINTMENT.**—The Secretary shall ap-  
15 point an individual to serve as Director, a position  
16 in the career-reserved Senior Executive service, to  
17 carry out duties as required under this subtitle.

18 (2) **COMPENSATION.**—The compensation of the  
19 Director shall not exceed the maximum rate of basic  
20 pay for the Senior Executive Service under section  
21 5382 of title 5, United States Code, including any  
22 applicable locality-based comparability payment that  
23 may be authorized under section 5304(h)(2)(C) of  
24 that title.

1           (3) DUTIES.—The Director shall, with respect  
2 to Federal facilities—

3           (A) identify and biennially reassess im-  
4 proved or higher rating standards;

5           (B) identify and develop green building  
6 standards that could be used for all types of  
7 Federal facilities;

8           (C) establish green practices that can be  
9 used throughout the life of a Federal facility;

10          (D) review and analyze current Federal  
11 budget practices and life-cycle costing issues,  
12 and make recommendations to Congress, in ac-  
13 cordance with section 145;

14          (E) identify within the planning, budg-  
15 eting, and construction process all types of Fed-  
16 eral facility procedures that inhibit new and ex-  
17 isting Federal facilities from becoming high-per-  
18 formance green buildings;

19          (F) identify inconsistencies in Federal law  
20 with respect to product acquisition guidelines  
21 for energy efficient and environmentally pref-  
22 erable products;

23          (G) recommend actions to improve compli-  
24 ance by Federal agencies with standards for en-  
25 vironmentally responsible acquisition;

1 (H) in coordination with the Office of  
2 Management and Budget, review the budget  
3 process for capital programs with respect to al-  
4 ternatives for—

5 (i) restructuring of budgets to require  
6 the use of complete energy- and environ-  
7 mental-cost accounting;

8 (ii) using operations expenditures in  
9 budget-related decisions while simulta-  
10 neously incorporating productivity and  
11 health measures (as those measures can be  
12 quantified by the Office, with the assist-  
13 ance of universities and national labora-  
14 tories);

15 (iii) permitting Federal agencies to re-  
16 tain all identified savings accrued as a re-  
17 sult of the use of life-cycle costing for fu-  
18 ture high-performance green building ini-  
19 tiatives; and

20 (iv) identifying short-term and long-  
21 term cost savings that accrue from high-  
22 performance green buildings, including  
23 those relating to health and productivity;

24 (I) identify green, self-sustaining tech-  
25 nologies to address the operational needs of

1 Federal facilities in times of national security  
2 emergencies, natural disasters, or other dire  
3 emergencies;

4 (J) in consultation with the Environmental  
5 Protection Agency, develop and implement a  
6 comprehensive indoor air quality program for  
7 all Federal facilities to ensure the safety of  
8 Federal workers and facility occupants—

9 (i) during new construction and ren-  
10 ovation of facilities; and

11 (ii) in existing facilities;

12 (K) implement the zero-energy commercial  
13 buildings initiative under section 143; and

14 (L) perform such other functions as are  
15 assigned under this subtitle.

16 (4) DUTIES.—The Director shall, with respect  
17 to development of high performance green buildings  
18 and zero-energy commercial buildings throughout  
19 the economy—

20 (A) develop the legal predicates and agree-  
21 ments for, negotiate, and establish one or more  
22 public-private partnerships with the Consor-  
23 tium, members of the Consortium, and other  
24 capable counterparties meeting the qualifica-

1           tions of the Consortium, to further such devel-  
2           opment;

3           (B) represent the public and the Depart-  
4           ment of Energy in negotiating and performing  
5           in accord with such public-private partnerships;  
6           and

7           (C) use appropriated funds in an effective  
8           manner to encourage the maximum investment  
9           of private funds to achieve such development.

10          (5) REPORTING.—The Director shall report di-  
11         rectly to the Assistant Secretary for Energy Effi-  
12         ciency and Renewable Energy, or to other senior of-  
13         ficials in a way that facilitates the integrated pro-  
14         gram of this subtitle for both energy efficiency and  
15         renewable energy and both technology development  
16         and technology deployment.

17          (6) COORDINATION.—The Director shall ensure  
18         full coordination of high-performance green building  
19         information and activities, including activities under  
20         this subtitle, within the Federal Government by  
21         working with the General Services Administration  
22         and all relevant agencies, including, at a minimum—

23                 (A) the Environmental Protection Agency;

24                 (B) the Office of the Federal Environ-  
25                 mental Executive;

1 (C) the Office of Federal Procurement Pol-  
2 icy;

3 (D) the Department of Energy, particu-  
4 larly the Federal Energy Management Pro-  
5 gram;

6 (E) the Department of Health and Human  
7 Services;

8 (F) the Department of Housing and Urban  
9 Development;

10 (G) the Department of Defense;

11 (H) such other Federal agencies as the Di-  
12 rector considers to be appropriate; and

13 (I) such nonprofit green building rating  
14 and analysis entities as the Director determines  
15 can offer support, expertise, and review serv-  
16 ices.

17 (c) GREEN BUILDING PARTNERSHIP CONSORTIUM.—

18 (1) RECOGNITION.—Not later than 90 days  
19 after the date of enactment of this Act, the Director  
20 shall formally recognize one or more groups that  
21 qualify as a green building partnership consortium.

22 (2) REPRESENTATION TO QUALIFY.—To qualify  
23 under this section, any consortium shall include rep-  
24 resentation from—

1 (A) the design professions, including na-  
2 tional associations of architects and of profes-  
3 sional engineers;

4 (B) the development, construction, finan-  
5 cial, and real estate industries;

6 (C) building owners and operators from  
7 the public and private sectors;

8 (D) academic and research organizations,  
9 including at least one national laboratory with  
10 extensive commercial building energy expertise;

11 (E) building code agencies and organiza-  
12 tions, including a model energy code-setting or-  
13 ganization;

14 (F) independent green building associa-  
15 tions or councils;

16 (G) experts in indoor air quality and envi-  
17 ronmental factors;

18 (H) experts in intelligent buildings and in-  
19 tegrated building information systems;

20 (I) utility energy efficiency programs; and

21 (J) nongovernmental energy efficiency or-  
22 ganizations.

23 (3) FUNDING.—The Secretary may make pay-  
24 ments to the Consortium pursuant to the terms of  
25 a public-private partnership for such activities of the

1 Consortium undertaken under such a partnership as  
2 described in this Subtitle directly to the Consortium  
3 or through one or more of its members.

4 (d) REPORT.—Not later than 2 years after the date  
5 of enactment of this Act, and biennially thereafter, the Di-  
6 rector, in consultation with the Consortium, shall submit  
7 to Congress a report that—

8 (1) describes the status of the green building  
9 initiatives under this subtitle and other federal pro-  
10 grams in effect as of the date of the report, includ-  
11 ing—

12 (A) the extent to which the programs are  
13 being carried out in accordance with this sub-  
14 title; and

15 (B) the status of funding requests and ap-  
16 propriations for those programs;

17 (2) summarizes and highlights development, at  
18 the State and local level, of green building initia-  
19 tives, including executive orders, policies, or laws  
20 adopted promoting green building (including the sta-  
21 tus of implementation of those initiatives); and

22 (3) includes, for the 2-year period covered by  
23 the report, recommendations to address each of the  
24 matters, and a plan for implementation of each rec-  
25 ommendation, described in paragraph (1) of this

1 subsection and subparagraphs (E) through (I) of  
2 subsection (b)(3).

3 **SEC. 143. ZERO-ENERGY COMMERCIAL BUILDINGS INITIA-**  
4 **TIVE.**

5 (a) **GOAL.**—The Director, in partnership with the  
6 Consortium, shall periodically study and refine a national  
7 goal to reduce commercial building energy use and achieve  
8 zero-net-energy commercial buildings. Unless the Director  
9 concludes that such targets are unachievable or unreal-  
10 istic, the goal shall include objectives that—

11 (1) all new commercial buildings constructed  
12 after the beginning of 2025 are zero-net-energy com-  
13 mercial buildings;

14 (2) by 2035, 50 percent of the then existing  
15 stock of commercial buildings that were constructed  
16 before 2025 are zero-net-energy commercial build-  
17 ings; and

18 (3) by 2050, all commercial buildings are zero-  
19 net-energy commercial buildings.

20 (b) **STRATEGY.**—

21 (1) **IN GENERAL.**—The Director, in partnership  
22 with the Consortium, shall develop a market trans-  
23 formation strategy intended to achieve the adopted  
24 goal by significantly accelerating the development  
25 and widespread deployment of energy efficiency tech-

1 nologies, practices, and policies in both new and ex-  
2 isting commercial buildings, and by leveraging state,  
3 utility, and private sector commercial building en-  
4 ergy efficiency programs.

5 (2) FEDERAL COMPLIANCE WITH GOAL.—The  
6 Director, in partnership with the Consortium, shall  
7 further identify and adopt a strategy leading to zero-  
8 net-energy performance for all Federal buildings in  
9 accordance with the adopted goal.

10 (c) INITIATIVE.—The Director, in partnership with  
11 the Consortium, shall implement an initiative to carry out  
12 the strategy that may include—

13 (1) support for industry efforts to develop ad-  
14 vanced materials, equipment, controls, practices, and  
15 integrated building systems aimed at achieving zero-  
16 net-energy commercial buildings and monitoring and  
17 benchmarking commercial building energy use;

18 (2) training, education, and awareness pro-  
19 grams, including—

20 (A) programs in cooperation with industry  
21 and professional associations and educational  
22 institutions to provide education on achieving  
23 sustainable and energy-efficient performance  
24 through proper system and structure design,  
25 construction, and operation to—

- 1 (i) architects;
- 2 (ii) mechanical, electrical, and plumb-
- 3 ing engineers;
- 4 (iii) contractors; and
- 5 (iv) construction managers and facil-
- 6 ity managers;
- 7 (B) programs to incorporate energy effi-
- 8 ciency and sustainability elements into architec-
- 9 ture, engineering, and vocational training and
- 10 certification curricula, including professional
- 11 certification and continuing education pro-
- 12 grams; and
- 13 (C) regional and national public education
- 14 campaigns to educate real estate, finance, and
- 15 other commercial buildings professionals and
- 16 the general public about the opportunities for
- 17 energy and cost savings and associated environ-
- 18 mental and health benefits associated with high
- 19 performance green buildings;
- 20 (3) pilot projects to demonstrate and document
- 21 the performance of scalable and replicable tech-
- 22 nologies, practices, and policies to achieve high-per-
- 23 formance green buildings and zero-net-energy com-
- 24 mercial buildings, including—

1 (A) pilot projects representing each market  
2 segment or building type in each climate region  
3 that include current best practice in integrated  
4 design, technology and systems, construction,  
5 commissioning, operation, and building infor-  
6 mation management;

7 (B) pilot projects, in cooperation with state  
8 and local governments, in public buildings; and

9 (C) pilot projects, in cooperation with pub-  
10 lic school districts and colleges and universities,  
11 to—

12 (i) demonstrate such technologies and  
13 practices in new and existing facilities;

14 (ii) involve students and faculty mem-  
15 bers in integrating energy efficiency and  
16 green building concepts and measures  
17 within the educational curriculum; and

18 (iii) use education facilities as show-  
19 cases to communicate these concepts to the  
20 community;

21 (4) technical assistance and funding of pilot  
22 projects for the development and use of new building  
23 energy design standards, model designs, model en-  
24 ergy codes, and incentives and other policies, to be  
25 provided to designers, builders, developers, commer-

1       cial building owners, and utility and government en-  
2       ergy efficiency programs, including—

3               (A) support for code and standards organi-  
4               zations to develop aggressive model energy  
5               codes, beyond-code guidelines, and code compli-  
6               ance programs for new and existing buildings;

7               (B) assistance to utilities, builders, and  
8               state and local officials in developing, imple-  
9               menting, and evaluating pilot programs to  
10              achieve building design and actual energy per-  
11              formance that meet and exceed performance  
12              levels in the model energy codes; and

13              (C) support for development and dissemi-  
14              nation of model programs and policies that pro-  
15              vide incentives for high performance green  
16              buildings, such as accelerated zoning and con-  
17              struction permitting and inspections, density  
18              bonuses, and state and local tax incentives;

19              (5) technical assistance and funding of pilot  
20              projects for innovative market-based initiatives to  
21              advance energy-efficient technologies and practices  
22              in new and existing commercial buildings, provided  
23              to state agencies, utilities and other entities, includ-  
24              ing—

1 (A) design assistance and incentives for in-  
2 corporating sustainability and energy efficiency  
3 beginning with the first stages of building de-  
4 sign and continuing through start-up commis-  
5 sioning and long-term operation;

6 (B) performance-based design and con-  
7 struction fees for high performance green con-  
8 struction and renovation;

9 (C) equipment leasing and financing strat-  
10 egies for energy efficiency upgrades of new and  
11 replacement commercial building equipment;

12 (D) trade-in programs for early retirement  
13 of low-efficiency commercial building equipment  
14 and system components, such as motors, air  
15 conditioners, boilers, lighting, and windows;

16 (E) improved methods of energy perform-  
17 ance contracting to reduce transaction costs  
18 and encourage the use of third-party funding  
19 and expertise for energy-efficient retrofitting of  
20 existing commercial buildings;

21 (F) improved model protocols for commer-  
22 cial building energy audits, energy performance  
23 measurement and verification, continuous com-  
24 missioning, and ongoing performance moni-  
25 toring and diagnostics; and

1 (G) strategies to reduce barriers to energy  
2 efficiency investment by addressing split incen-  
3 tives between commercial building owners and  
4 tenants;

5 (6) development, dissemination, technical assist-  
6 ance, and pilot project activities to improve the prac-  
7 tice of monitoring, benchmarking, and disclosure of  
8 actual commercial building energy performance and  
9 operating costs, including—

10 (A) improved methods of measuring and  
11 compiling energy performance data on a statis-  
12 tically significant share of commercial new con-  
13 struction, renovation, and energy retrofit  
14 projects;

15 (B) development and dissemination of en-  
16 ergy performance metrics for the commercial  
17 building stock and for important sub-categories  
18 of commercial buildings;

19 (C) improved methods of providing energy  
20 performance feedback to commercial building  
21 owners, operators, and occupants, including  
22 real-time feedback and comparisons to perform-  
23 ance goals, past performance, and similar build-  
24 ings;

1 (D) voluntary programs at the national, re-  
2 gional, and sectoral levels to recognize and re-  
3 ward commercial buildings with exceptional per-  
4 formance or performance improvement;

5 (E) increased availability and use of tools  
6 for post occupancy assessment of energy effi-  
7 ciency and occupant satisfaction with commer-  
8 cial high performance green buildings, and for  
9 measuring and documenting non-energy finan-  
10 cial and other benefits of such buildings;

11 (7) in cooperation with the Energy Information  
12 Administration and with utility, state, and private  
13 sector organizations, development and application of  
14 improved methods for assessing trends in the energy  
15 performance of the commercial buildings stock, new  
16 construction, and building renovations, by building  
17 type and region, in order to track progress toward  
18 the goals adopted under section (a); and

19 (8) such otherwise authorized activities that the  
20 Secretary and the Director determine are necessary  
21 to the success of the initiative.

22 **SEC. 144. PUBLIC OUTREACH.**

23 The Director, in coordination with the Consortium,  
24 shall carry out public outreach to inform individuals and

1 entities of the information and services available Govern-  
2 ment-wide by—

3 (1) establishing and maintaining a national  
4 high-performance green building clearinghouse, in-  
5 cluding on the internet, that—

6 (A) identifies existing similar efforts and  
7 coordinates activities of common interest; and

8 (B) provides information relating to high-  
9 performance green buildings, including  
10 hyperlinks to internet sites that describe the ac-  
11 tivities, information, and resources of—

12 (i) the Federal Government;

13 (ii) State and local governments;

14 (iii) the private sector (including non-  
15 governmental and nonprofit entities and  
16 organizations); and

17 (iv) international organizations;

18 (2) identifying and recommending educational  
19 resources for implementing high-performance green  
20 building practices, including security and emergency  
21 benefits and practices;

22 (3) providing access to technical assistance on  
23 using tools and resources to make more cost-effec-  
24 tive, energy-efficient, health-protective, and environ-  
25 mentally beneficial decisions for constructing high-

1 performance green buildings, particularly tools avail-  
2 able to conduct life-cycle costing and life-cycle as-  
3 sessment;

4 (4) providing information on application proc-  
5 esses for certifying a high-performance green build-  
6 ing, including certification and commissioning;

7 (5) providing technical information, market re-  
8 search, or other forms of assistance or advice that  
9 would be useful in planning and constructing high-  
10 performance green buildings;

11 (6) using such other methods as are determined  
12 by the Director to be appropriate;

13 (7) surveying existing research and studies re-  
14 lating to high-performance green buildings;

15 (8) coordinating activities of common interest;

16 (9) developing and recommending a high-per-  
17 formance green building practices that—

18 (A) identify information and research  
19 needs, including the relationships between  
20 health, occupant productivity, and each of—

21 (i) pollutant emissions from materials  
22 and products in the building;

23 (ii) natural day lighting;

24 (iii) ventilation choices and tech-  
25 nologies;

- 1 (iv) heating, cooling, and system con-  
2 trol choices and technologies;
- 3 (v) moisture control and mold;
- 4 (vi) maintenance, cleaning, and pest  
5 control activities;
- 6 (vii) acoustics; and
- 7 (viii) other issues relating to the  
8 health, comfort, productivity, and perform-  
9 ance of occupants of the building; and
- 10 (B) promote the development and dissemi-  
11 nation of high-performance green building  
12 measurement tools that, at a minimum, may be  
13 used—
- 14 (i) to monitor and assess the life-cycle  
15 performance of facilities (including dem-  
16 onstration projects) built as high-perform-  
17 ance green buildings; and
- 18 (ii) to perform life-cycle assessments;
- 19 (10) assisting the budget and life-cycle costing  
20 functions of the Office under section 145;
- 21 (11) studying and identifying potential benefits  
22 of green buildings relating to security, natural dis-  
23 aster, and emergency needs of the Federal Govern-  
24 ment; and

1           (12) supporting other research initiatives deter-  
2           mined by the Office.

3 **SEC. 145. BUDGET AND LIFE-CYCLE COSTING AND CON-**  
4 **TRACTING.**

5           The Director, in coordination with the Consortium,  
6 shall—

7           (1) identify, review, and analyze current budget  
8           and contracting practices that affect achievement of  
9           high-performance green buildings, including the  
10          identification of barriers to green building life-cycle  
11          costing and budgetary issues;

12          (2) develop guidance and conduct training ses-  
13          sions with budget specialists and contracting per-  
14          sonnel from Federal agencies and budget examiners  
15          to apply life-cycle cost criteria to actual projects;

16          (3) identify tools to aid life-cycle cost decision-  
17          making; and

18          (4) explore the feasibility of incorporating the  
19          benefits of green buildings, such as security benefits,  
20          into a cost-budget analysis to aid in life-cycle costing  
21          for budget and decision making processes.

22 **SEC. 146. INCENTIVES.**

23          As soon as practicable after the date of enactment  
24 of this Act, the Director shall identify incentives to encour-  
25 age the use of green buildings and related technology in

1 the operations of the Federal Government, including  
2 through—

3 (1) the provision of recognition awards; and

4 (2) the maximum feasible retention of financial  
5 savings in the annual budgets of Federal agencies  
6 for use in reinvesting in future green building initia-  
7 tives.

8 **SEC. 147. FEDERAL PROCUREMENT.**

9 (a) IN GENERAL.—Not later than 2 years after the  
10 date of enactment of this Act, the Director of the Office  
11 of Federal Procurement Policy, in consultation with the  
12 Director and the Under Secretary of Defense for Acquisi-  
13 tion, Technology, and Logistics, shall promulgate revisions  
14 of the applicable acquisition regulations, to take effect as  
15 of the date of promulgation of the revisions—

16 (1) to direct any Federal procurement execu-  
17 tives involved in the acquisition, construction, or  
18 major renovation (including contracting for the con-  
19 struction or major renovation) of any facility—

20 (A) to employ integrated design principles;

21 (B) to improve site selection for environ-  
22 mental and community benefits;

23 (C) to optimize building and systems en-  
24 ergy performance;

25 (D) to protect and conserve water;

1 (E) to enhance indoor environmental qual-  
2 ity; and

3 (F) to reduce environmental impacts of  
4 materials and waste flows; and

5 (2) to direct Federal procurement executives in-  
6 volved in leasing buildings, to give preference to the  
7 lease of facilities that—

8 (A) are energy-efficient; and

9 (B) to the maximum extent practicable,  
10 have applied contemporary high-performance  
11 and sustainable design principles during con-  
12 struction or renovation.

13 (b) GUIDANCE.—Not later than 90 days after the  
14 date of promulgation of the revised regulations under sub-  
15 section (a), the Director of the Office of Procurement Pol-  
16 icy shall issue guidance to all Federal procurement execu-  
17 tives providing direction and instructions to renegotiate  
18 the design of proposed facilities, renovations for existing  
19 facilities, and leased facilities to incorporate improvements  
20 that are consistent with this section.

21 **SEC. 148. USE OF ENERGY AND WATER EFFICIENCY MEAS-**  
22 **URES IN FEDERAL BUILDINGS.**

23 Section 543 of the National Energy Conservation  
24 Policy Act (42 U.S.C. 8253) is amended by adding at the  
25 end the following:

1           “(f) USE OF ENERGY AND WATER EFFICIENCY  
2 MEASURES IN FEDERAL BUILDINGS.—

3           “(1) FACILITY ENERGY MANAGERS.—

4           “(A) IN GENERAL.—Each federal agency  
5 shall designate a manager responsible for imple-  
6 menting this subsection and reducing energy  
7 use at each building or facility that meets cri-  
8 teria under subparagraph (B).

9           “(B) COVERED FACILITIES.—The Sec-  
10 retary shall develop criteria, after consultation  
11 with affected agencies, energy efficiency advo-  
12 cates, and energy and utility service providers,  
13 that cover buildings and facilities, including  
14 central utility plants and distribution systems  
15 and other energy intensive operations, com-  
16 prising at least two-thirds of total federal build-  
17 ing and facility energy use.

18           “(2) ENERGY AND WATER EVALUATIONS AND  
19 COMMISSIONING.—

20           “(A) EVALUATIONS.—Not later than 18  
21 months after the date of enactment of this sub-  
22 section, and every 5 years thereafter, each en-  
23 ergy manager shall complete a comprehensive  
24 energy and water evaluation for each building

1 or facility that meets criteria under paragraph  
2 (1)(B).

3 “(B) RECOMMISSIONING AND RETRO-  
4 FITTING.—As part of the evaluation under sub-  
5 paragraph (A) or on the same schedule the en-  
6 ergy manager shall recommission and retrofit  
7 each such building and facility if applicable.

8 “(3) IMPLEMENTATION OF IDENTIFIED ENERGY  
9 AND WATER EFFICIENCY MEASURES.—

10 “(A) IN GENERAL.—Not later than 2 years  
11 after the completion of each evaluation under  
12 paragraph (1), each energy manager—

13 “(i) shall fully implement each energy  
14 and water-saving measure identified in the  
15 evaluation conducted under paragraph (2)  
16 that is life-cycle cost-effective and has a  
17 12-year or shorter simple payback period;

18 “(ii) may implement any energy or  
19 water-saving measure that the Federal  
20 agency identified in the evaluation con-  
21 ducted under paragraph (1) that is life-  
22 cycle cost-effective and has longer than a  
23 12-year simple payback period; and

1                   “(iii) may bundle individual measures  
2                   of varying paybacks together into combined  
3                   projects.

4                   “(B) PAYBACK PERIOD.—For the purpose  
5                   of subparagraph (A), the simple payback period  
6                   of a measure shall be obtained by dividing—

7                   “(i) the estimated initial implementa-  
8                   tion cost of the measure (other than fi-  
9                   nancing costs); by

10                   “(ii) the annual cost savings from the  
11                   measure.

12                   “(C) COST SAVINGS.—For the purpose of  
13                   subparagraph (B), cost savings shall include net  
14                   savings in estimated—

15                   “(i) energy and water costs; and

16                   “(ii) operations, maintenance, repair,  
17                   replacement, and other direct costs.

18                   “(D) EXCEPTIONS.—The Secretary may  
19                   modify or make exceptions to the calculation of  
20                   a 12-year simple payback under this paragraph  
21                   in the guidelines issued by the Secretary under  
22                   paragraph (5).

23                   “(E) LIFE-CYCLE COST-EFFECTIVE.—For  
24                   the purpose of subparagraph (a), determination  
25                   of whether a measure is life-cycle cost-effective

1 shall use methods and procedures developed  
2 pursuant to section 544.

3 “(4) FOLLOW-UP ON IMPLEMENTED MEAS-  
4 URES.—For each measure implemented under para-  
5 graph (3), each energy manager shall ensure that—

6 “(A) equipment, including building and  
7 equipment controls, is fully commissioned at ac-  
8 ceptance to be operating at design specifica-  
9 tions;

10 “(B) a plan for appropriate operations,  
11 maintenance, and repair of the equipment is in  
12 place at acceptance and is followed;

13 “(C) equipment and system performance is  
14 measured during its entire life to ensure proper  
15 operations, maintenance, and repair; and

16 “(D) energy and water savings are meas-  
17 ured and verified.

18 “(5) GUIDELINES.—

19 “(A) IN GENERAL.—The Secretary shall  
20 issue guidelines and necessary criteria that each  
21 Federal agency shall follow for implementation  
22 of—

23 “(i) paragraphs (1) and (2) not later  
24 than 180 days after the date of enactment  
25 of this subsection; and

1                   “(ii) paragraphs (3) and (4) not later  
2                   than 1 year after the date of enactment of  
3                   this subsection.

4                   “(B) RELATIONSHIP TO FUNDING  
5                   SOURCE.—The guidelines issued by the Sec-  
6                   retary under subparagraph (A) shall be appro-  
7                   priate and uniform for measures funded with  
8                   each type of funding made available under  
9                   paragraph (9), but may distinguish between dif-  
10                  ferent types of measures project size, and other  
11                  criteria the Secretary determines are relevant.

12                  “(6) WEB-BASED CERTIFICATION.—

13                  “(A) IN GENERAL.—For each building or  
14                  facility that meets the criteria established by  
15                  the Secretary under paragraph (1), the energy  
16                  manager shall use the web-based tracking sys-  
17                  tem under subparagraph (B) to certify compli-  
18                  ance with the requirements for—

19                         “(i) energy and water evaluations and  
20                         recommissioning and retrofitting under  
21                         paragraph (2);

22                         “(ii) implementation of identified en-  
23                         ergy and water measures under paragraph  
24                         (3); and

1                   “(iii) follow-up on implemented meas-  
2                   ures under paragraph (4).

3                   “(B) DEPLOYMENT.—

4                   “(i) IN GENERAL.—Not later than 1  
5                   year after the date of enactment of this  
6                   subsection, the Secretary shall develop and  
7                   deploy the web-based tracking system re-  
8                   quired under this paragraph in a manner  
9                   that tracks, at a minimum—

10                   “(I) the covered buildings and fa-  
11                   cilities;

12                   “(II) the status of meeting the  
13                   requirements specified in subpara-  
14                   graph (A);

15                   “(III) the estimated cost and  
16                   savings for measures required to be  
17                   implemented in a building or facility;  
18                   and

19                   “(IV) the measured savings and  
20                   persistence of savings for implemented  
21                   measures.

22                   “(ii) EASE OF COMPLIANCE.—The  
23                   Secretary shall ensure that energy man-  
24                   ager compliance with the requirements in  
25                   this paragraph, to the greatest extent prac-

1            ticable, can be accomplished with the use  
2            of streamlined procedures, and templates  
3            that minimize the time demands on Fed-  
4            eral employees.

5            “(C) AVAILABILITY.—

6                    “(i) IN GENERAL.—Subject to clause  
7                    (ii), the Secretary shall make the web-  
8                    based tracking system required under this  
9                    paragraph available to Congress, other  
10                   Federal agencies, and the public through  
11                   the Internet.

12                   “(ii) EXEMPTIONS.—At the request of  
13                   a Federal agency, the Secretary may ex-  
14                   empt specific data for specific buildings  
15                   from disclosure under clause (i) for na-  
16                   tional security purposes.

17            “(7) BENCHMARKING OF FEDERAL FACILI-  
18            TIES.—

19                   “(A) IN GENERAL.—The energy manager  
20                   shall enter energy use data for each building or  
21                   facility that meets the criteria established by  
22                   the Secretary under paragraph (1) into a build-  
23                   ing energy use benchmarking system, such as  
24                   the Energy Star Portfolio Manager.

1           “(B) SYSTEM AND GUIDANCE.—Not later  
2 than 1 year after the date of enactment of this  
3 subsection, the Secretary shall—

4                   “(i) select or develop the building en-  
5 ergy use benchmarking system required  
6 under this paragraph for each type of  
7 building; and

8                   “(ii) issue guidance for use of the sys-  
9 tem.

10           “(8) FEDERAL AGENCY SCORECARDS.—

11                   “(A) IN GENERAL.—The Director of the  
12 Office of Management and Budget shall issue  
13 semiannual scorecards for energy management  
14 activities carried out by each Federal agency  
15 that includes—

16                   “(i) summaries of the status of imple-  
17 menting the various requirements of the  
18 agency and its energy managers under this  
19 subsection; and

20                   “(ii) any other means of measuring  
21 performance that the Director considers  
22 appropriate.

23                   “(B) AVAILABILITY.—The Director shall  
24 make the scorecards required under this para-

1 graph available to Congress, other Federal  
2 agencies, and the public through the Internet.

3 “(9) FUNDING AND IMPLEMENTATION.—

4 “(A) AUTHORIZATION OF APPROPRIA-  
5 TIONS.—There are authorized to be appro-  
6 priated such sums as are necessary to carry out  
7 this subsection.

8 “(B) FUNDING OPTIONS.—

9 “(i) IN GENERAL.—To carry out this  
10 subsection, a Federal agency may use any  
11 combination of—

12 “(I) appropriated funds made  
13 available under subparagraph (A);  
14 and

15 “(II) private financing, including  
16 financing available through energy  
17 savings performance contracts or util-  
18 ity energy service contracts.

19 “(ii) COMBINED FUNDING FOR SAME  
20 MEASURE.—A Federal agency may use any  
21 combination of appropriated funds and pri-  
22 vate financing described in clause (i) to  
23 carry out the same measure under this  
24 subsection, with proportional allocation for  
25 any energy and water savings.

1                   “(iii) LACK OF APPROPRIATED  
2 FUNDS.—Since measures may be carried  
3 out using private financing described in  
4 clause (i), a lack of available appropria-  
5 tions shall not be considered a sufficient  
6 reason for the failure of a Federal agency  
7 to comply with this subsection.

8                   “(C) IMPLEMENTATION.—Each Federal  
9 agency may implement the requirements under  
10 this subsection itself or may contract out per-  
11 formance of some or all of the requirements.

12                   “(10) RULE OF CONSTRUCTION.—This sub-  
13 section shall not be construed either to require or to  
14 obviate any contractor savings guarantees.”.

15 **SEC. 149. DEMONSTRATION PROJECT.**

16                   (a) IN GENERAL.—The Director shall establish  
17 guidelines to implement a demonstration project to con-  
18 tribute to the research goals of the Office.

19                   (b) PROJECTS.—In accordance with guidelines estab-  
20 lished by the Director under subsection (a) and the duties  
21 of the Director described in this subtitle, the Director shall  
22 carry out—

23                   (1) for each of fiscal years 2009 through 2014,  
24 1 demonstration project in a Federal building se-

1 lected by the Director in accordance with relevant  
2 agencies and described in subsection (c)(1), that—

3 (A) provides for the evaluation of the in-  
4 formation obtained through the conduct of  
5 projects and activities under this subtitle; and

6 (B) achieves a platinum rating, as defined  
7 by the Leadership in Energy and Environ-  
8 mental Design Building Rating System stand-  
9 ard established by the United States Green  
10 Building Council (or equivalent rating);

11 (2) no fewer than 4 demonstration projects at  
12 4 universities, that, as competitively selected by the  
13 director in accordance with subsection (c)(2), have—

14 (A) appropriate research resources and rel-  
15 evant projects to meet the goals of the dem-  
16 onstration project established by the Office; and

17 (B) the ability—

18 (i) to serve as a model for high-per-  
19 formance green building initiatives, includ-  
20 ing research and education;

21 (ii) to identify the most effective ways  
22 to use high-performance green building and  
23 landscape technologies to engage and edu-  
24 cate undergraduate and graduate students;

1 (iii) to effectively implement a high-  
2 performance green building education pro-  
3 gram for students and occupants;

4 (iv) to demonstrate the effectiveness  
5 of various high-performance technologies in  
6 each of the 4 climatic regions of the  
7 United States described in subsection  
8 (c)(2)(B); and

9 (v) to explore quantifiable and non-  
10 quantifiable beneficial impacts on public  
11 health and employee and student perform-  
12 ance;

13 (3) demonstration projects to evaluate  
14 replicable approaches to achieving various types of  
15 commercial buildings in various climates; and

16 (4) deployment activities to disseminate infor-  
17 mation on and encourage widespread adoption of  
18 technologies, practices, and policies to achieve zero-  
19 net-energy commercial buildings or low energy use  
20 and effective monitoring of energy use in commercial  
21 buildings.

22 (c) CRITERIA.—

23 (1) FEDERAL FACILITIES.—With respect to the  
24 existing or proposed Federal facility at which a dem-

1       onstration project under this section is conducted,  
2       the Federal facility shall—

3               (A) be an appropriate model for a project  
4       relating to—

5                   (i) the effectiveness of high-perform-  
6       ance technologies;

7                   (ii) analysis of materials, components,  
8       systems, and emergency operations in the  
9       building, and the impact of those mate-  
10      rials, components, and systems, including  
11      the impact on the health of building occu-  
12      pants;

13                  (iii) life-cycle costing and life-cycle as-  
14      sessment of building materials and sys-  
15      tems; and

16                  (iv) location and design that promote  
17      access to the Federal facility through walk-  
18      ing, biking, and mass transit; and

19               (B) possess sufficient technological and or-  
20      ganizational adaptability.

21               (2) UNIVERSITIES.—With respect to the 4 uni-  
22      versities at which a demonstration project under this  
23      section is conducted—

24                   (A) the universities should be selected,  
25      after careful review of all applications received

1 containing the required information, as deter-  
2 mined by the director, based on—

3 (i) successful and established public-  
4 private research and development partner-  
5 ships;

6 (ii) demonstrated capabilities to con-  
7 struct or renovate buildings that meet high  
8 indoor environmental quality standards;

9 (iii) organizational flexibility;

10 (iv) technological adaptability;

11 (v) the demonstrated capacity of at  
12 least 1 university to replicate lessons  
13 learned among nearby or sister univer-  
14 sities, preferably by participation in groups  
15 or consortia that promote sustainability;

16 (vi) the demonstrated capacity of at  
17 least 1 university to have officially-adopt-  
18 ed, institution-wide “green building” guide-  
19 lines for all campus building projects; and

20 (vii) the demonstrated capacity of at  
21 least 1 university to have been recognized  
22 by similar institutions as a national leader  
23 in sustainability education and curriculum  
24 for students of the university; and

1 (B) each university shall be located in a  
2 different climatic region of the united states,  
3 each of which regions shall have, as determined  
4 by the office—

5 (i) a hot, dry climate;

6 (ii) a hot, humid climate;

7 (iii) a cold climate; or

8 (iv) a temperate climate (including a  
9 climate with cold winters and humid sum-  
10 mers).

11 (d) REPORT.—Not later than 1 year after the date  
12 of enactment of this Act, and annually thereafter through  
13 September 30, 2014—

14 (1) the Director shall submit to the Secretary  
15 a report that describes the status of the demonstra-  
16 tion projects; and

17 (2) each University at which a demonstration  
18 project under this section is conducted shall submit  
19 to the Secretary a report that describes the status  
20 of the demonstration projects under this section.

21 **SEC. 150. ENERGY EFFICIENCY FOR DATA CENTER BUILD-**  
22 **INGS.**

23 (a) IN GENERAL.—

24 (1) Not later than 90 days after the date of en-  
25 actment of this Act, the Secretary of Energy and

1 Administrator of the Environmental Protection  
2 Agency shall jointly, after consulting with informa-  
3 tion technology industry and other interested par-  
4 ties, initiate a voluntary national information pro-  
5 gram for those types of data centers and data center  
6 equipment and facilities that are widely used and for  
7 which there is a potential for significant data center  
8 energy savings as a result of such program.

9 (2) Such program shall—

10 (A) consistent with the objectives of para-  
11 graph (1), determine the type of data center  
12 and data center equipment and facilities to be  
13 covered under such program; and

14 (B) include specifications, measurements,  
15 and benchmarks that will enable data center op-  
16 erators to make more informed decisions about  
17 the energy efficiency and costs of data centers,  
18 and that—

19 (i) reflect the total energy consump-  
20 tion of data centers, including both equip-  
21 ment and facilities, taking into account—

22 (I) the performance and utiliza-  
23 tion of servers, data storage devices,  
24 and other information technology  
25 equipment;

1 (II) the efficiency of heating,  
2 ventilation, and air conditioning, cool-  
3 ing, and power conditioning systems;

4 (III) energy savings from the  
5 adoption of software and data man-  
6 agement techniques; and

7 (IV) other factors determined by  
8 the organization described in sub-  
9 section (b);

10 (ii) allow for creation of separate  
11 specifications, measurements, and bench-  
12 marks based on data center size and func-  
13 tion, as well as other appropriate charac-  
14 teristics determined by the organization  
15 described in subsection (b);

16 (iii) advance the design and imple-  
17 mentation of efficiency technologies to the  
18 maximum extent economically practical;  
19 and

20 (iv) provide to data center operators  
21 in the private sector and the Federal Gov-  
22 ernment information about best practices  
23 and purchasing decisions that reduce the  
24 energy consumption of data centers;

1 (C) publish the information described in  
2 subparagraph (B), which may be disseminated  
3 through catalogs, trade publications, the Inter-  
4 net, or other mechanisms, that will allow data  
5 center operators to assess the energy consump-  
6 tion and potential cost savings of alternative  
7 data centers and data center equipment and fa-  
8 cilities; and

9 (D) not later than 1 year after the date of  
10 enactment of this Act, and thereafter on an on-  
11 going basis, transmit the information described  
12 in subparagraph (B) to the Secretary and the  
13 Administrator.

14 (3) Such program shall be developed and co-  
15 ordinated by the data center efficiency organization  
16 described in subsection (b) according to commonly  
17 accepted procedures for the development of specifica-  
18 tions, measurements, and benchmarks.

19 (b) DATA CENTER EFFICIENCY ORGANIZATION.—  
20 Upon creation of the program under subsection (a), the  
21 Secretary and the Administrator shall jointly designate an  
22 information technology industry organization to coordi-  
23 nate the program. Such organization, whether preexisting  
24 or formed specifically for the purposes of subsection (a),  
25 shall—

1           (1) consist of interested parties that have exper-  
2           tise in energy efficiency and in the development, op-  
3           eration, and functionality of computer data centers,  
4           information technology equipment, and software, as  
5           well as representatives of hardware manufacturers,  
6           data center operators, and facility managers;

7           (2) obtain and address input from Department  
8           of Energy National Laboratories or any college, uni-  
9           versity, research institution, industry association,  
10          company, or public interest group with applicable ex-  
11          pertise in any of the areas listed in paragraph (1)  
12          of this subsection;

13          (3) follow commonly accepted procedures for  
14          the development of specifications and accredited  
15          standards development processes;

16          (4) have a mission to develop and promote en-  
17          ergy efficiency for data centers and information  
18          technology; and

19          (5) have the primary responsibility to oversee  
20          the development and publishing of the information,  
21          measurements, and benchmarks described in sub-  
22          section (a) and transmission of such information to  
23          the Secretary and the Administrator for their adop-  
24          tion under subsection (c).

1           (c) ADOPTION OF SPECIFICATIONS.—The Secretary  
2 and the Administrator shall jointly, in accordance with the  
3 requirements of section 12(d) of the National Technology  
4 Transfer Advancement Act of 1995, adopt and publish the  
5 specifications, measurements, and benchmarks described  
6 in subsection (a) for use by the Federal Energy Manage-  
7 ment Program and the Energy Star program as energy  
8 efficiency requirements for the purposes of those pro-  
9 grams.

10          (d) MONITORING.—The Secretary and the Adminis-  
11 trator shall jointly monitor and evaluate the efforts to de-  
12 velop the program described in subsection (a) and, not  
13 later than 3 years after the date of enactment of this Act,  
14 shall make a determination as to whether such program  
15 is consistent with the objectives of subsection (a).

16          (e) ALTERNATIVE SYSTEM.—If the Secretary and the  
17 Administrator make a determination under subsection (d)  
18 that a voluntary national information program for data  
19 centers consistent with the objectives of subsection (a) has  
20 not been developed, the Secretary and the Administrator  
21 shall jointly, after consultation with the National Institute  
22 of Standards and Technology, develop, not later than 2  
23 years after such determination, and implement the pro-  
24 gram under subsection (a).

1 (f) PROTECTION OF PROPRIETARY INFORMATION.—

2 The Secretary, the Administrator, or the data center effi-  
3 ciency organization shall not disclose any proprietary in-  
4 formation or trade secrets provided by any individual or  
5 company for the purposes of carrying out this program.

6 (g) DEFINITIONS.—For purposes of this section:

7 (1) The term “data center” means any facility  
8 that primarily contains electronic equipment used to  
9 process, store, and transmit digital information,  
10 which may be—

11 (A) a free-standing structure; or

12 (B) a facility within a larger structure,  
13 that utilizes environmental control equipment to  
14 maintain the proper conditions for the oper-  
15 ation of electronic equipment.

16 (2) The term “data center operator” means any  
17 person or government entity that builds or operates  
18 a data center or purchases data center services,  
19 equipment, and facilities.

20 **SEC. 151. AUTHORIZATION OF APPROPRIATIONS.**

21 (a) IN GENERAL.—In addition to amounts authorized  
22 under subsections (b), (c), and (d), there are authorized  
23 to be appropriated to carry out this subtitle—

24 (1) \$10,000,000 for fiscal year 2008; and

1           (2) \$20,000,000 for each of the fiscal years  
2           2009 through 2014, to remain available until ex-  
3           pended.

4           (b) ZERO-ENERGY COMMERCIAL BUILDINGS INITIA-  
5           TIVE.—There are authorized to be appropriated to carry  
6           out the initiative described in section 143—

7           (1) \$20,000,000 for fiscal year 2008;

8           (2) \$50,000,000 for each of fiscal years 2009  
9           and 2010;

10          (3) \$100,000,000 for each of fiscal years 2011  
11          and 2012;

12          (4) \$200,000,000 for each of fiscal years 2013  
13          through 2050.

14          (c) DEMONSTRATION PROJECTS.—

15          (1) FEDERAL DEMONSTRATION PROJECT.—

16          There are authorized to be appropriated to carry out  
17          the Federal demonstration project described in sec-  
18          tion 149(b)(1) \$10,000,000 for the period of fiscal  
19          years 2009 through 2014, to remain available until  
20          expended.

21          (2) UNIVERSITY DEMONSTRATION PROJECTS.—

22          There are authorized to be appropriated to carry out  
23          the university demonstration projects described in  
24          section 149(b)(2) \$10,000,000 for the period of fis-

1 cal years 2009 through 2014, to remain available  
2 until expended.

3 (d) ENERGY EFFICIENCY FOR DATA CENTER BUILD-  
4 INGS.—There are authorized to be appropriated to each  
5 of the Secretary and the Administrator for carrying out  
6 section 150 \$250,000 for each of the fiscal years 2008  
7 through 2012.