

**BULB REPLACEMENT IMPROVING
GOVERNMENT WITH HIGH-EFFICIENCY
TECHNOLOGY ACT**

R E P O R T

OF THE

**COMMITTEE ON HOMELAND SECURITY AND
GOVERNMENTAL AFFAIRS
UNITED STATES SENATE**

TO ACCOMPANY

S. 442

TO AMEND TITLE 40, UNITED STATES CODE, TO REQUIRE THE ADMINISTRATOR OF GENERAL SERVICES TO PROCURE THE MOST LIFE-CYCLE COST EFFECTIVE AND ENERGY EFFICIENT LIGHTING PRODUCTS AND TO ISSUE GUIDANCE ON THE EFFICIENCY, EFFECTIVENESS, AND ECONOMY OF THOSE PRODUCTS, AND FOR OTHER PURPOSES



FEBRUARY 16, 2022.—Ordered to be printed

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**BULB REPLACEMENT IMPROVING GOVERNMENT WITH
HIGH-EFFICIENCY TECHNOLOGY ACT**

FEBRUARY 16, 2022.—Ordered to be printed

Mr. PETERS, from the Committee on Homeland Security and
Governmental Affairs, submitted the following

R E P O R T

[To accompany S. 442]

[Including cost estimate of the Congressional Budget Office]

The Committee on Homeland Security and Governmental Affairs, to which was referred the bill (S. 442), to amend title 40, United States Code, to require the Administrator of the General Services to procure the most life-cycle cost effective and energy efficient lighting products and to issue guidance on the efficiency, effectiveness, and economy of those products, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

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I. PURPOSE AND SUMMARY

The purpose of S. 442, the Bulb Replacement Improving Government with High-efficiency Technology Act (BRIGHT Act), is to maximize cost savings and energy efficiency in lighting across government by directing the General Services Administration (GSA) to procure and use the most life-cycle cost effective and energy efficient lighting systems in public buildings, to the extent practicable.

S. 442 also requires GSA to provide guidance on best lighting system practices to federal agencies and state, local, and tribal entities to maximize efficiency across government.

II. BACKGROUND AND THE NEED FOR LEGISLATION

Since 2007, the Energy Independence and Security Act of 2007 (EISA)¹ has directed the GSA Administrator to procure and use energy efficient lightbulbs to the extent feasible. All ENERGY STAR light bulbs satisfy this requirement, using at least two-thirds less energy than a standard incandescent bulb.² However, since ENERGY STAR guidance was established, technology has improved significantly, resulting in substantial opportunities for lighting procurement savings.³

Between 2012 and 2018, GSA released a series of reports evaluating the cost and energy-savings potential of utilizing more efficient light bulbs, fixtures, and controls.⁴ These reports found that the government could achieve substantial energy savings by replacing expended compact fluorescent lamp (CFL)⁵ and linear fluorescent lamp (LFL) bulbs⁶—both ENERGY STAR certified bulbs—with more efficient light-emitting diodes (LED) bulbs. GSA found that LED bulbs were up to 50 percent more efficient than CFL bulbs, could last twice as long, and could generate annual cost savings of up to \$15.6 million when fully implemented.⁷ GSA also found significant savings opportunities with advanced lighting controls, integrated daylighting, integrated advanced lighting controls, occupant responsive lighting, and wireless advanced lighting controls. Despite this potential, GSA and its facilities managers are not incentivized to maximize cost efficiency across lighting procurement.⁸

The BRIGHT Act would require the GSA Administrator to acquire and use the most life-cycle cost effective and energy efficient lighting systems to the extent feasible. While GSA is already required by law to use ENERGY STAR certified lightbulbs whenever feasible, GSA often relies on older, less energy and cost-efficient technology given the wide range of products certified under this program.⁹ Additionally, existing code language narrowly focuses on lightbulbs rather than complete lighting systems (encompassing all

¹Pub. L. No. 110–140.

² Environmental Protection Agency, *What Makes a Product ENERGY STAR?* (https://www.energystar.gov/products/what_makes_product_energy_star) (accessed Dec. 1, 2021).

³ Environmental Protection Agency, *LED Lighting* (www.energy.gov/energysaver/led-lighting) (accessed Dec. 1, 2021).

⁴ U.S. General Services Administration, *Lighting* (www.gsa.gov/governmentwide-initiatives/sustainability/emerging-building-technologies/published-findings/lighting) (accessed June 11, 2019).

⁵ U.S. General Services Administration, *Downlight LED Lighting Form Factor Assessment* (Apr. 2016) (www.gsa.gov/cdnstatic/GSA_GPG_Downlight_LED_Form_Factor_Assessment_508.pdf).

⁶ U.S. General Services Administration, *Linear LED Lighting Retrofit Assessment* (Sep. 2016) (www.gsa.gov/cdnstatic/GSA_GPG_Linear_LED_Retrofit_Assessment-508.pdf).

⁷ U.S. General Services Administration, *LED Downlight Lamps for CFL Fixtures* (Apr. 2016) (www.gsa.gov/cdnstatic/GPG_Findings_026-LED_Downlight_Lamps.pdf); U.S. General Services Administration, *TLED Lighting Retrofits with Dedicated Drivers* (Aug. 8, 2018) (www.gsa.gov/cdnstatic/GPG_Findings_030-Linear_LED_Retrofits_1535394309.pdf).

⁸ *LED Lighting*, *supra* note 3.

⁹ U.S. General Services Administration, *LED Downlight Lamps for CFL Fixtures* (Apr. 2016) (www.gsa.gov/cdnstatic/GPG_Findings_026-LED_Downlight_Lamps.pdf); U.S. General Services Administration, *TLED Lighting Retrofits with Dedicated Drivers* (Aug. 8, 2018) (www.gsa.gov/cdnstatic/GPG_Findings_030-Linear_LED_Retrofits_1535394309.pdf).

relevant fixtures and controls), limiting savings potential.¹⁰ This bill therefore directs GSA to pursue the most effective technologies wherever possible across the full range of lighting products using existing procurement authorities, thereby enhancing the original intent of EISA: that Federal buildings be as energy and cost efficient as possible.

The BRIGHT Act also directs GSA to provide Federal agencies and state, local, and tribal governments with guidance on the best lighting system procurement and implementation practices to maximize efficiency, effectiveness, and economy objectives across government.

III. LEGISLATIVE HISTORY

Chairman Gary Peters (D–MI) introduced S. 442, the Bulb Replacement Improving Government with High-Efficiency Technology (BRIGHT) Act, on February 25, 2021, with Senator Johnson (R–WI). The bill was referred to the Committee on Homeland Security and Governmental Affairs.

The Committee considered S. 442 at a business meeting on November 3, 2021. The bill was approved by voice vote *en bloc* with Senators Peters, Hassan, Sinema, Rosen, Padilla, Ossoff, Portman, Johnson, Lankford, Romney, Scott, and Hawley present.

IV. SECTION-BY-SECTION ANALYSIS OF THE BILL, AS REPORTED

Section 1. Short title

This section provides that the Act may be cited as the “Bulb Replacement Improving Government with High-Efficiency Technology (BRIGHT) Act.”

Section 2. Guidance

This section directs the Administrator of the General Services Administration (GSA) to issue guidance to federal agencies for the procurement and use of the most life-cycle cost effective and energy efficient lighting systems to increase the efficiency, effectiveness, and economy of the federal government. This section also requires the Administrator to provide this guidance to state, local, and tribal entities and publish it on the Internet.

Section 3. Use of life-cycle cost effective and energy efficient lighting systems

This section redesignates subsections (d) through (g) of United States Code title 40, Section 3313 as subsections (f) through (i) and amends the section designation heading and all that follows through the end of subsection (c). It changes the title of the heading from “energy efficient lighting fixtures and bulbs” to “procurement of life-cycle cost effective and energy efficient lighting systems.” It also defines the terms “Administrator” and “lighting system” referred to throughout the bill.

This section directs the Administrator to procure the most life-cycle cost effective and energy efficient lighting systems to the extent practicable after the date of enactment. The Administrator must use the most life-cycle cost effective and energy efficient light-

¹⁰ 40 U.S. Code § 3313.

ing systems in each public building constructed, altered, acquired, or leased, to the extent practicable. The Administrator must also replace individual components of a lighting system in the normal course of maintenance with the most life-cycle cost effective and energy efficient lighting systems to the extent practicable.

This section amends subsection (d) of section 3313 of title 40 of the U.S. Code to require the Administrator to take contracting options and other specific procurement considerations into account when carrying out this section. It additionally requires the Administrator to consider cost-effective retrofits when evaluating compatibility with existing equipment.

The redesignated subsection (e) of section 3313 requires the Administrator to use the procedures and methods established under section 544(a) of the National Energy Conservation Policy Act (42 U.S.C. 8254(a)) in determining whether a lighting system is life-cycle cost effective.

The redesignated subsection (f) of section 3313 strikes “lighting fixture” and references to “bulbs” and replaces it with “lighting system” or the “lighting system or the individual components of the lighting system.”

The redesignated subsections (g) and (h) of section 3313 add “procurement” in addition to “use” of lighting systems in the context of prioritization and guideline requirements.

V. EVALUATION OF REGULATORY IMPACT

Pursuant to the requirements of paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee has considered the regulatory impact of this bill and determined that the bill will have no regulatory impact within the meaning of the rules. The Committee agrees with the Congressional Budget Office’s statement that the bill contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

VI. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, February 10, 2022.

Hon. GARY PETERS,
Chairman, Committee on Homeland Security and Governmental Affairs, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 442, the BRIGHT Act.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Matthew Pickford.

Sincerely,

PHILLIP L. SWAGEL,
Director.

Enclosure.

S. 442, BRIGHT Act			
As ordered reported by the Senate Committee on Homeland Security and Governmental Affairs on November 3, 2021			
By Fiscal Year, Millions of Dollars	2022	2022-2026	2022-2031
Direct Spending (Outlays)	*	*	*
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	*	*	*
Spending Subject to Appropriation (Outlays)	*	2	not estimated
Statutory pay-as-you-go procedures apply?	Yes	Mandate Effects	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2032?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No
* = between zero and \$500,000.			

S. 442 would require the General Services Administration (GSA) to procure lighting systems for use in federal buildings that are the most cost effective and energy efficient when measured over the systems' expected lifetime. (Life cycle costs include all capital and operating expenses associated with a system over its life expectancy of up to 40 years, including fuel costs.) The bill also would require GSA to issue guidance about the efficiency of new lighting products.

A variety of statutory provisions and executive orders direct federal agencies to meet certain goals to reduce the amount of energy used in federal facilities, increase the consumption of electricity that is generated from renewable sources, reduce emissions of greenhouse gases, and ensure that federal facilities meet certain standards related to the use of sustainable resources. In addition, the federal government uses life cycle costs to evaluate investments in owned and leased buildings. S. 442 could marginally accelerate meeting energy efficiency goals by encouraging the use of lighting systems that would have higher initial costs but longer-term energy savings. Using information from GSA, CBO estimates that any such costs would be less than \$500,000 annually and would total about \$2 million over the 2022–2026 period. Any additional savings from reduced energy costs would not be significant over the next five years. All of those effects, both costs and savings, would be subject to future appropriation actions consistent with the bill.

Enacting S. 442 could affect direct spending by some agencies that are allowed to use fees, receipts from the sale of goods, and other collections to cover operating costs. CBO estimates that any net changes in direct spending by those agencies would be negligible because most of them can adjust amounts collected to reflect changes in operating costs.

S. 442 also could affect direct spending if, under the bill, GSA procures more lighting systems using long-term contracts known as

Energy Savings Performance Contracts (ESPCs).¹¹ However, because S. 442 would not change those contracts' scope or the ability of GSA to enter into them, CBO estimates that any increase in direct spending stemming from increased use of such contracts under the bill would not be significant.

The CBO staff contact for this estimate is Matthew Pickford. The estimate was reviewed by H. Samuel Papenfuss, Deputy Assistant Director for Budget Analysis.

VII. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows: (existing law proposed to be omitted is enclosed in brackets, new matter is printed in italic, and existing law in which no change is proposed is shown in roman):

UNITED STATES CODE

* * * * *

TITLE 40—PUBLIC BUILDINGS, PROPERTY, AND WORKS

* * * * *

SUBTITLE II—PUBLIC BUILDINGS AND WORKS

PART A—GENERAL

* * * * *

CHAPTER 33—ACQUISITION, CONSTRUCTION, AND ALTERATION

* * * * *

[SEC. 3313. Use of Energy Efficient Lighting Fixtures and Bulbs

- (a) * * *
- (b) * * *
- (c) * * *
 - (1) * * *
 - (2) * * *
 - (3) * * *
 - (4) * * *
 - (5) * * *]

SEC. 3313. PROCUREMENT OF LIFE CYCLE COST EFFECTIVE AND ENERGY EFFICIENT LIGHTING SYSTEMS.

(a) *DEFINITIONS.*—*In this section:*

¹¹In CBO's judgment, agencies that enter into ESPCs make an obligation—a commitment of federal resources—on behalf of the government to cover the full cost of the equipment to be acquired, but without the necessary appropriations. Therefore, legislation authorizing ESPCs creates the authority to make such obligations, and in the absence of appropriations sufficient to cover the contractual costs, that authority is a form of mandatory rather than discretionary spending. See Congressional Budget Office, *Using ESPCs to Finance Federal Investments in Energy-Efficient Equipment* (February 2015), www.cbo.gov/publication/49869.

(1) *ADMINISTRATOR.*—The term “Administrator” means the Administrator of General Services.

(2) *LIGHTING SYSTEM.*—The term “lighting system” means the elements required to maintain a desired light level, including lamps, light fixtures, fixture distribution, sensors and control technologies, interior design elements, and daylighting sources.

(b) *PROCUREMENT.*—

(1) *IN GENERAL.*—To the maximum extent practicable, the Administrator shall—

(A) procure the most life-cycle cost effective and energy efficient lighting systems; and

(B) ensure that procurements after the date of enactment of the BRIGHT Act of lighting systems or the individual components of lighting systems maximize life-cycle cost effectiveness and energy efficiency.

(2) *USE.*—Each public building constructed, altered, acquired, or leased by the Administrator shall be equipped, to the maximum extent practicable as determined by the Administrator, with the most life-cycle cost effective and energy efficient lighting systems for each application.

(c) *MAINTENANCE OF PUBLIC BUILDINGS.*—Each individual component of a lighting system, including a lamp or fixture, that is replaced by the Administrator in the normal course of maintenance of public buildings shall be replaced, to the maximum extent practicable, with the most life-cycle cost effective and energy efficient lighting system possible for the application.

(d) *CONSIDERATIONS.*—

(1) *CONTRACTING OPTIONS.*—In carrying out this section, the Administrator shall consider appropriate contracting options for the procurement of the most life-cycle cost effective and energy efficient lighting systems.

(2) *PROCUREMENT AND USE.*—In making a determination under this section concerning the practicability of procuring and installing the most life-cycle cost effective and energy efficient lighting system, the Administrator shall consider—

(A) the compatibility of the lighting system with existing equipment, including consideration of a cost effective retrofit;

(B) whether procurement and use of the lighting system could result in interference with productivity;

(C) the aesthetics relating to the use of the lighting system; and (D) such other factors as the Administrator determines to be appropriate.

(e) *LIFE CYCLE COST EFFECTIVE.*—The Administrator shall use the procedures and methods established under section 544(a) of the National Energy Conservation Policy Act (42 U.S.C. 8254(a)) in determining whether a lighting system is life-cycle cost effective.

[(d)](f) *ENERGY STAR.*—A [lighting fixture or bulb] lighting system shall be treated as being energy efficient for purposes of this section if—

(1) [the fixture or bulb is] the lighting system or the individual components of the lighting system are certified under the Energy Star program established by section 324A of the Energy Policy and Conservation Act (42 U.S.C. 6294a);

(2) in the case of all light-emitting diode (LED) luminaires, lamps, and systems whose efficacy (lumens per watt) and Color Rendering Index (CRI) meet the Department of Energy requirements for minimum luminaire efficacy and CRI for the Energy Star certification, as verified by an independent third-party testing laboratory that the Administrator and the Secretary of Energy determine conducts its tests according to the procedures and recommendations of the Illuminating Engineering Society of North America, even if the luminaires, lamps, and systems have not received such certification; or

(3) the Administrator and the Secretary of Energy have otherwise determined that the [fixture or bulb] *lighting system* is energy efficient.

[(e)](g) ADDITIONAL ENERGY EFFICIENT LIGHTING DESIGNATIONS.—The Administrator of the Environmental Protection Agency and the Secretary of Energy shall give priority to establishing Energy Star performance criteria or Federal Energy Management Program designations for additional lighting product categories that are appropriate for *procurement and* use in public buildings.

[(f)](h) GUIDELINES.—The Administrator shall develop guidelines for the *procurement and* use of energy efficient lighting technologies that contain mercury in child care centers in public buildings.

[(g)](i) APPLICABILITY OF BUY AMERICAN ACT.—Acquisitions carried out pursuant to this section shall be subject to the requirements of the Buy American Act (41 U.S.C. 10c et seq.).

[(h) EFFECTIVE DATE.—The requirements of subsections (a) and (b) shall take effect 1 year after the date of enactment of this subsection.]