

116TH CONGRESS }  
*1st Session* }

SENATE

{ REPORT  
116-157

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. 1874

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 EFFI-  
CIENCY, EFFECTIVENESS, AND ECONOMY OF THOSE PRODUCTS,  
AND FOR OTHER PURPOSES



NOVEMBER 6, 2019.—Ordered to be printed

—  
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**Calendar No. 292**

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

NOVEMBER 6, 2019.—Ordered to be printed

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

**R E P O R T**

[To accompany S. 1874]

[Including cost estimate of the Congressional Budget Office]

The Committee on Homeland Security and Governmental Affairs, to which was referred the bill (S. 1874), 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, having considered the same, reports favorably thereon with an amendment (in the nature of a substitute) and recommends that the bill, as amended, do pass.

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**I. PURPOSE AND SUMMARY**

The purpose of S. 1874, the Bulb Replacement Improving Government with High-efficiency Technology Act of 2019 (BRIGHT Act), is to maximize cost effectiveness 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. 1874 also requires that GSA provide guidance

on lighting system efficiency best practices to Federal agencies, state, local, and tribal entities.

## II. BACKGROUND AND THE NEED FOR LEGISLATION

In the Energy Independence and Security Act of 2007 (EISA), the GSA Administrator was directed to use energy efficient options for lighting to the extent feasible, a requirement satisfied by use of light bulbs certified by the ENERGY STAR program.<sup>1</sup> This program, established by the Energy Policy and Conservation Act, allows the Environmental Protection Agency and the Department of Energy to certify energy efficient products and buildings.<sup>2</sup> Light bulbs certified by the ENERGY STAR program use less energy than a standard incandescent bulb.<sup>3</sup> However, since ENERGY STAR guidance was established and EISA became law, lighting technology has improved significantly, creating opportunities for the Federal Government to achieve greater energy efficiency through upgrades of its lighting systems.<sup>4</sup>

From 2012 to 2018, GSA released a series of reports evaluating the cost and energy-saving potential of upgrading lighting systems with more efficient light bulbs, fixtures, and controls.<sup>5</sup> These reports found that the government could achieve substantial energy savings by replacing two ENERGY STAR certified bulbs, expended compact fluorescent lamp (CFL)<sup>6</sup> and linear fluorescent lamp (LFL) bulbs,<sup>7</sup> with light-emitting diodes (LED) bulbs. GSA calculated that LED bulbs would be 40 to 50 percent more efficient than CFL bulbs and could generate annual cost savings of up to \$15.6 million.<sup>8</sup>

The BRIGHT Act would update current U.S. Code and establish that the Administrator of GSA should acquire and use the most life-cycle cost effective and energy efficient lighting systems available to the extent feasible. While current law already requires that GSA must use ENERGY STAR certified lighting when feasible, the range of products certified under this program results in GSA relying on older, less energy and cost efficient technology. This bill directs GSA to continue to pursue new technologies using existing procurement authorities and, in keeping with 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, state, local, and tribal governments with guidance for best practices on procuring and using the most life-cycle cost effective and energy efficient lighting systems, sharing expertise that can be of cost-sav-

<sup>1</sup>Pub. L. No. 110–140.

<sup>2</sup>42 U.S.C. § 6294a.

<sup>3</sup>Environmental Protection Agency, *How a Product Earns the ENERGY STAR Label*, available at <https://www.energystar.gov/products/how-product-earns-energy-star-label>.

<sup>4</sup>Environmental Protection Agency, *LED Lighting*, available at <https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting>.

<sup>5</sup>General Services Administration, *Lighting* (Nov. 14, 2018), available at <https://www.gsa.gov/governmentwide-initiatives/sustainability/emerging-building-technologies/published-findings/lighting>.

<sup>6</sup>General Services Administration, *LED Downlight Lamps for CFL Fixtures* (Apr. 2016), available at [https://www.gsa.gov/cdnstatic/GSA\\_GPG\\_Downlight\\_LED\\_Form\\_Factor\\_Assessment\\_508.pdf](https://www.gsa.gov/cdnstatic/GSA_GPG_Downlight_LED_Form_Factor_Assessment_508.pdf) [hereinafter “LED”].

<sup>7</sup>General Services Administration, *TLED Lighting Retrofits with Dedicated Drivers* (Sep. 2016), available at [https://www.gsa.gov/cdnstatic/GSA\\_GPG\\_Linear\\_LED\\_Retrofit\\_Assessment\\_508.pdf](https://www.gsa.gov/cdnstatic/GSA_GPG_Linear_LED_Retrofit_Assessment_508.pdf).

<sup>8</sup>LED at 12.

ing value and ensuring that efficiency, effectiveness, and economy objectives are maximized across all levels of government.

### III. LEGISLATIVE HISTORY

Senator Gary C. Peters (D–MI) introduced S. 1874 on June 13, 2019, with Senator Ron Johnson (R–WI). Senator Margaret Hassan (D–NH) later joined as a cosponsor. The bill was referred to the Committee on Homeland Security and Governmental Affairs. The Committee considered S. 1874 at a June 19, 2019 business meeting.

During the business meeting, Senators Peters and Johnson offered an amendment in the nature of a substitute that removed a reporting requirement. The Committee ordered S. 1874, as modified by the substitute amendment, reported favorably *en bloc* by voice vote. Senators present were Johnson, Portman, Paul, Lankford, Romney, Scott, Enzi, Hawley, Peters, Carper, Hassan, Sinema, and Rosen.

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

#### *Section 1. Short title*

This section provides the bill’s short title, the “Bulb Replacement Improving Government with High-Efficiency Technology Act” or the “BRIGHT Act.”

#### *Section 2. Guidance*

This section directs the Administrator of GSA to issue guidance within one year of the bill’s passage for use by (1) Federal agencies “for the procurement and use” of “cost-effective and energy efficient lighting systems”; and (2) other non-Federal government entities to aid in their own use of cost effective and efficient lighting.

#### *Section 3. Procurement of life-cycle cost effective and energy efficient lighting systems*

This section amends 40 U.S.C. 3133. The new subsection (a) defines “Administrator” as the Administrator of GSA, and defines “lighting system” broadly to include all the potential “elements required to maintain a desired light level.”

The new subsection (b) directs the GSA Administrator to procure “the most life-cycle cost effective and energy efficient lighting systems” and to equip public buildings with the same.

The new subsection (c) applies the cost effectiveness/energy efficiency requirement to replacement and maintenance operations in public buildings.

The new subsection (d) includes several considerations the Administrator must incorporate in developing contracting and procurement options in service of the bill’s aims.

The new subsection (e) describes “procedures and methods” required for determining life-cycle cost effectiveness of a product.

### 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 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, October 31, 2019.

Hon. RON JOHNSON,  
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. 1874, 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.

<b>S. 1874, BRIGHT Act</b>			
As ordered reported by the Senate Committee on Homeland Security and Governmental Affairs on June 19, 2019			
By Fiscal Year, Millions of Dollars	2020	2020-2024	2020-2029
Direct Spending (Outlays)	0	*	*
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	*	*
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 2030?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No
* = between -\$500,000 and \$500,000.			

S. 1874 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. 1874 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 \$2 million over the 2020–2024 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. 1874 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. 1874 could also affect direct spending if under the bill GSA procures more lighting systems using long-term contracts known as Energy Savings Performance Contracts (ESPCs).<sup>1</sup> However, because S. 1874 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 S. 1874 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

\* \* \* \* \*

<sup>1</sup>In 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](http://www.cbo.gov/publication/49869).

## 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) CONSTRUCTION, ALTERATION, AND ACQUISITION OF PUBLIC BUILDINGS.—Each public building constructed, altered, or acquired by the Administrator of General Services shall be equipped, to the maximum extent feasible as determined by the Administrator, with lighting fixtures and bulbs that are energy efficient.

(b) MAINTENANCE OF PUBLIC BUILDINGS.—Each lighting fixture or bulb that is replaced by the Administrator in the normal course of maintenance of public buildings shall be replaced, to the maximum extent feasible, with a lighting fixture or bulb that is energy efficient.

(c) CONSIDERATIONS.—In making a determination under this section concerning the feasibility of installing a lighting fixture or bulb that is energy efficient, the Administrator shall consider—

- (1) the life-cycle cost effectiveness of the fixture or bulb;
- (2) the compatibility of the fixture or bulb with existing equipment;
- (3) whether use of the fixture or bulb could result in interference with productivity;
- (4) the aesthetics relating to use of the fixture or bulb; and
- (5) such other factors as the Administrator determines appropriate.]

##### SEC. 3133. PROCUREMENT OF LIFE-CYCLE COST EFFECTIVE AND ENERGY EFFICIENT LIGHTING SYSTEMS.

(a) DEFINITIONS. *In this section:*

(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<sup>1</sup> (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.]