

# ARS □ NIFA □ ERS □ NASS

## *Bulletin*

**Title:** Energy Efficient Light Bulbs

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This Bulletin identifies the requirements and procedures for acquiring energy efficient lamps and light fixtures and phasing out inefficient lighting

## **1. Purpose**

The Energy Policy Act of 2005 (EPACT 2005), the Energy Independence and Security Act (EISA), Executive Order (EO) 13423, EO 13514, and Policy and Procedure (P&P) 134.2 require that Federal agencies reduce energy consumption. EISA section 321 requires lighting manufacturers to phase out inefficient lamps between 2012 to 2014. T-12 High Output lamps will be phased out in 2012. Manufacturing of T-12 magnetic ballasts has already ceased. EISA section 323 and P&P 134.2 require that Agricultural Research Service (ARS) purchase energy efficient light bulbs, even for regular maintenance. Incandescent and T-12 fluorescent lamps are not energy efficient. The Federal government is the largest consumer of energy in the country. Congress and the President have charged Federal agencies to lead by example by making significant efforts in conservation of energy. Meeting this challenge is mandatory. Reducing energy costs is a top priority for ARS. Using energy efficient light bulbs will save energy and money.

## **2. Procedure**

Effective immediately, all lamps and light fixtures acquired for use in ARS facilities, structures, and equipment shall be energy efficient and meet the requirements of EISA section 321(a)(3)(A) to the maximum extent feasible with the goal of replacing all inefficient bulbs by the end of fiscal year 2015. T-12 lamps with magnetic ballasts should be replaced with T-8 lamps (or T-5 lamps or Light Emitting Diodes (LED) in appropriate cost effective applications) and electronic ballasts. Regular medium screw base incandescent lamps are included. They must be replaced with equivalent Compact Fluorescent Lamps (CFL). Special purpose incandescent lamps such as 3-way, appliance, or rough service lamps, or those in dimming applications are excluded.

Existing fixtures shall be evaluated to determine if it is more cost effective to retrofit them with new lamps and ballasts or replace fixtures as a whole. Do not put T-8 lamps in a fixture with a T-12 or other incompatible ballasts. Fluorescent lamps must be matched to the type of ballast in the fixture.

Lighting shall be evaluated to provide the proper lighting levels when lamps and fixtures are replaced.

Exit signs using incandescent lamps shall be replaced with LED exit signs.

Comply with all Federal and State laws in managing and disposing of waste lamps and ballasts.

## **3. Authorities**

The Energy Policy Act of 2005 (EPACT 2005) - [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109\\_cong\\_public\\_laws&docid=f:publ058.109](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_public_laws&docid=f:publ058.109)

The Energy Independence and Security Act (EISA) of 2007 -  
[http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110\\_cong\\_bills&docid=f:h6enr.txt.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h6enr.txt.pdf)

Executive Order 13514 - <http://edocket.access.gpo.gov/2009/pdf/E9-24518.pdf>.

Executive Order 13423 - <http://www.wbdg.org/ccb/FED/FMEO/eo13423.pdf>.

REE Energy, Water and Sustainability P&P 134.2 -  
<http://www.afm.ars.usda.gov/ppweb/PDF/134-02.pdf>.

#### **4. Definitions**

T-12 lamps are tube shaped fluorescent lamps that are 1-1/2 inch in diameter.

T-8 lamps are tube shaped fluorescent lamps that are 1 inch in diameter.

T-5 lamps are tube shaped fluorescent lamps that are 5/8 inch in diameter.

The prefix TU indicates a fluorescent lamp that is U-shaped

The ballast is usually a black brick-shaped device that provides the starting and operating voltage for fluorescent and other types of lamps. Magnetic ballasts are inefficient. Electronic ballasts are energy efficient.

Compact Fluorescent Lamps (CFL) are fluorescent lamps that are often spiral shaped but can have other shapes. They can produce the same amount of light using a fraction of the electricity of incandescent lamps. Replacing a 60 watt incandescent lamp with an equivalent CFL can pay for itself by the second month because of the electricity it saves. CFLs also last longer than incandescent lamps.

Incandescent lamps are the traditional light bulb that produces light by heating a filament in a glass globe.

Light Emitting Diodes (LED) are semiconductors that emit light. They are excellent for some applications such as exit signs. They are still an emerging technology but may be cost effective replacements for general lighting. LEDs consume very little energy compared to incandescent lamps.

/s/

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