



**NOT
MEASUREMENT
SENSITIVE**

**DOE G 436.1-1
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Federal Sustainable Print Management

[This Guide describes suggested non-mandatory approaches for meeting requirements. Guides are not requirements documents and are not to be construed as requirements in any audit or appraisal for compliance with the parent Policy, Order, Notice, or Manual.]



**U.S. Department of Energy
Office of the Chief Information Officer**

FOREWORD

This Department of Energy (DOE) Guide is for use by all DOE Departmental Elements. This Guide provides acceptable approaches for implementing the IT sustainability requirements and criteria required by Department of Energy (DOE) Order 436.1, *Departmental Sustainability*, dated 5-2-11 and related to the sustainability requirements contained in [Executive Order 13693](#), "[Planning for Federal Sustainability in the Next Decade](#)". This Guide describes suggested non-mandatory approaches for meeting requirements. DOE Guides are part of the DOE Directives System and are issued to provide supplemental information and additional guidance regarding the Department's expectations of its requirements as contained in rules, Orders, Notices, and regulatory standards. Guides may also provide acceptable methods for implementing these requirements. Guides are not substitutes for requirements, nor do they replace technical standards that are used to describe established practices and procedures for implementing requirements.

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1.0. Purpose

This Guide establishes a framework for the development of Department of Energy (DOE) organizational and Site policies on desktop printing, copying, scanning, print-related purchasing practices, and paper and ink/toner usage.

Departmental Elements are to use information and material documented in this Guide to develop their own tailored Print Management Policies and best practices. This Guide supports implementation of Executive Order 13693, "*Planning for Federal Sustainability in the Next Decade*", U.S. General Services Administration (GSA) Bulletin B-37, "*Federal Print Management Practices*" and the Department of Energy (DOE) Strategic Sustainability Performance Plan.

This Guide provides DOE specific actions and approaches to implement effective print management programs.

2.0. APPLICABILITY

Departmental Elements includes Under Secretaries, Program and Staff Offices, Sites, and Laboratories. The recommendations set forth in this Guide apply to the entire DOE, including all Departmental Element Federal employees and contractors, domestically and abroad. Departmental Elements should determine the level at which their policy should be developed within their organization. To the extent practical, teleworking employees are encouraged to follow this Guide voluntarily when using employee owned equipment and software for official business.

3.0. IMPLEMENTATION

This Guide has been developed to facilitate an understanding that all Departmental Elements are required to establish and implement a Print Management Policy within their organization. Successful development and implementation of these policies will support Department of Energy (DOE) Order 436.1, *Departmental Sustainability*, and Executive Order 13693, "*Planning for Federal Sustainability in the Next Decade*."

To assist in the development of Print Management Policies, this Guide contains two annotated templates that can be (and should be) tailored to meet any operational, logistical or managerial conditions or requirements that are unique to the Departmental Element. The templates serve as a starting point and include many of the recommended practices and metrics identified by the Office of Management and Budget (OMB), the Office of Federal Sustainability, and the United States General Service Administration (GSA).

Departmental Elements should report implementation of the Print Management Policy via any applicable reporting requirements documented in Guidance for DOE Site Sustainability Plans and Consolidated Energy Data Report (CEDR) Technical Support Document.

4.0. FEDERAL REQUIREMENTS/DRIVERS

The regulatory drivers for this Guide include:

- Federal Acquisition Regulation, Subpart 4.3 - Paper Documents
- Federal Acquisition Regulation, Subpart 8.002 - Priorities for use of mandatory Government sources
- Federal Acquisition Regulation, Part 23 - Environment, Energy and Water Efficiency, Renewable Energy Technologies, Occupational Safety, and Drug-Free Workplace
- Federal Management Regulation, 41 CFR Part 102, Subchapter B - Personal Property
- Executive Order 13693, “*Planning for Federal Sustainability in the Next Decade*” (March 19, 2015) and Implementing Instructions for Executive Order 13693 (June 10, 2015)
- Executive Order 13589, “*Promoting Efficient Spending*” (November 9, 2011)
- United States General Service Administration (GSA) Bulletin B-34, “*Disposal of Federal Electronic Assets*”
- United States General Service Administration (GSA) Bulletin B-37, “*Federal Print Management Practices*”
- United States General Service Administration (GSA) Bulletin B-39, “*Federal Sustainable Print Management Policy Template*”
- National Institute of Standards and Technology (NIST) Guideline NISTR 8023 - Risk Management for Replication Devices (Draft)

This Guide does not supersede existing regulations for Government Printing as stated in Title 44 United States Code: Public Printing and Documents.

5.0. SAMPLE POLICIES

Appendix A (Sample Policies) contains two sample policies that can be used as templates for Departmental Elements to utilize when developing their own Print Management Policy.

Sample Policy A¹ is a basic policy that incorporates the use of a “*Fleet Assessment*” to develop a printer and imaging device baseline to support staff to printer ratios and the requirements for imaging devices within the Departmental Element.

Sample Policy B² is an expanded policy that is based on the United States General Service Administration (GSA) recommended template.

Departmental Elements are encouraged to select and tailor one of the templates. If a Departmental Element already has a Print Management Policy, the Policy should be reviewed and updated as needed.

Each policy should effectively address:

- Sustainable printing practices and paper use;
- Acquisition of imaging equipment;
- Default settings on imaging equipment;
- Handling of paper, ink and toner waste;
- Monitoring printing and production services;
- Disposition of used imaging equipment; and
- Training

¹ Sample Policy A is based on the United States General Services Administration (GSA) “Sustainable Printing Management Policies and Practices” Instructional Letter (ADM IL-12.02 Extended)

² Sample Policy B is based on the United States General Services Administration (GSA) “Federal Sustainable Print Management Template” published 11.20.14.

APPENDIX A - SAMPLE PRINT MANAGEMENT POLICY TEMPLATES

Departmental Elements should review, tailor and annotate the sample policies provided below, as needed. [Green Text] should be replaced with the appropriate organization or department name that is applicable to the Departmental Element. [Blue Text] should be reviewed and replaced (if needed) with the appropriate values applicable to the Departmental Element (strong consideration should be given to meet or exceed United States General Service Administration (GSA) recommended values already provided in the text).

SAMPLE POLICY (VERSION A)

1. Purpose

This Print Management Policy provides printing management practices, roles, and responsibilities regarding [Departmental Element]-furnished desktop devices, network/group printers, copiers, fax machines and multifunction devices that will support [Departmental Element's] efforts to save money, print less by printing smarter, and reduce the number of print output devices.

2. Definitions

Duplex Printing: Printing or copying on both sides of a piece of paper, double-sided or two-sided printing or copying.

Fleet Assessment: A detailed study of an organization's print output device fleet through the collection and analysis of device use and performance data. The purpose of the study is to identify the optimal print output device fleet for an organization, including number, types, allocation, and placement of print output devices.

Multifunction Device: A print output device that performs at least two of the following functions: printing; copying; scanning; and faxing.

Print Output Device Fleet: A population of equipment that includes printers, multifunction devices, copiers, fax machines and scanners. All of these assets are involved in some form of document production, with the majority of them focused on imaging content onto paper.

Network/Group Printer: A Government-furnished/funded print output device that is connected to a wired or wireless network with multiple users mapped to the device.

Desktop Device: A Government-furnished/funded print output device that is connected directly or wirelessly to a workstation with only one user mapped to the device.

Duplexing Capable: Any imaging equipment that is capable of automatically making double-sided prints or copies.

3. Background

This Policy supports implementation of Executive Order 13693, “*Planning for Federal Sustainability in the Next Decade*,” U.S. General Services Administration (GSA) Bulletin B-37, “*Federal Print Management Practices*,” Executive Order 13589 “*Promoting Efficient Spending*” and the Department of Energy (DOE) Strategic Sustainability Performance Plan.

4. Applicability

The provisions of this Policy support and apply as specified in Section 3 (Applicability) of Department of Energy (DOE) Order 436.1 (Departmental Sustainability).

5. Policy

- A. [Departmental Element] seeks to optimize the number and types of print output devices allocated throughout the organization, to reduce printing and associated costs, while also meeting the business needs of the organization. [Departmental Element’s] preliminary target ratios for the number of users per print output device are:
- [Twenty (20)] authorized users to one (1) multifunction device, and
 - [Ten (10)] authorized users to one (1) network/group printer
- B. Actual print output device allocation at [Departmental Element] locations may vary depending on such factors as space configuration and print volume requirements. [Departmental Element’s] organize-wide target ratios will be adjusted and location ratios will be established after the conclusion of a fleet assessment.
- C. Purchases of new desktop devices: standalone copiers and standalone fax machines are prohibited unless a waiver is granted in accordance with Section 6.
- D. All print output devices, for any [Departmental Element] location, must be purchased by [Purchasing Office] upon the receipt of validated requirements from the [Review/Approving Office (i.e. OCIO)].
- E. The [Review/Approving Office] will review and evaluate the need for desktop devices with the goal of reducing the number currently in use. Individuals impacted by a recommendation to remove a desktop device may seek a waiver in accordance with Section 6. When continued service of an existing desktop device is required and approved, those devices that are not capable of duplex printing will be removed and replaced by duplex capable devices at the end of their useful life.

Furthermore, new requirements approved through the waiver process will be fulfilled from excess or by reallocating newer devices to replace older devices, when possible.

Desktop devices taken out of service will have paper, toner and ink cartridges removed for use in remaining printers, where possible.

- F. The [Review/Approving Office] will conduct an inventory and fleet assessment of the existing print output devices and make disposition recommendations including which devices should be removed from service or remain in service; which devices should be reallocated; and where devices should be located in relation to their users. The fleet assessment will result in recommendations for the future management of the print output device fleet.
- G. [Departmental Element] employees and other authorized users of [Departmental Element's] information technology, including print output devices, must:
1. Limit the publication, printing, and storage of hard copy documents and presume that information should be provided and retained in an electronic form, when permitted by law, and consistent with applicable records retention requirements.
 2. Identify and use, as much as possible, alternatives to printing such as increased use of collaborative software and other cloud computing tools to distribute, store and edit documents online.
 3. Use paper containing the maximum recycled content consistent with the manufacturer's recommendation for the print output device. If possible, purchase uncoated printing paper containing at least 30 percent postconsumer recycled content or higher.
 4. Use sleep modes for print output devices when they are not in use during the workday.
 5. Turn off printing devices at the end of the workday, over weekends and Federal holidays.
- H. [IT Management Office] will determine which settings must be enabled on print output devices; which settings must be enabled on computers; and which settings must be enabled on both print output devices and computers. At a minimum (when possible), the following settings should be set as the default:
- All duplexing capable print output devices should automatically print and copy in duplex mode
 - Black-and-white or grayscale printing
 - Draft, economy or fast mode printing

[IT Management Office] should enable all required settings on network print output devices and networked computers. Employees should enable all required settings on desktop print output devices or non-networked computers assigned to them. [IT Management Office] may assist employees in enabling settings on their desktop print output devices and non-networked computers.

6. Waiver Requests

- A. Waiver requests to purchase new personal printers, to retain desktop devices identified for removal, to deviate from the fleet assessment recommendations, or to deviate from the printer standards may be granted for the following reasons:
1. An employee is located in a [Departmental Element] office with no access to a network print output device.
 2. An employee uses a computer, which is not currently and cannot be placed on the [Departmental Element's] network and needs the ability to print from that computer.
- B. Waiver requests to purchase new desktop devices, to retain desktop devices identified for removal, to deviate from the fleet assessment recommendations or to deviate from the printer standard will be made as follows:

A waiver request must be prepared using the [Departmental Element's] Waiver Form [Form/Application] and must be approved by:

1. The employee's immediate supervisor;
2. [Review/Approving Office]

7. Responsibilities

- A. The [Review/Approving Office] is responsible for conducting a fleet assessment, and managing the size and allocation of the print output device inventory throughout [Departmental Element]. The [Review/Approving Office] may conduct additional fleet assessments, following the completion of the initial fleet assessment and implementation of recommendations, as needed.
- B. The [Policy Office], in partnership with the [Review/Approving Office], is responsible for internal [Departmental Element] policies regarding print output device acquisition, management, and use. The [Policy Office] is also responsible for approving, in consultation with [Review/Approving Office], policies related to the acquisition of all print output devices.
- C. The [IT Management Office] is responsible for ensuring maintenance of required settings on print output devices.

8. Contact Information

Any questions or concerns regarding this Policy should be directed at [CONTACT INFORMATION].

SAMPLE POLICY (VERSION B)

1. Purpose

This Print Management Policy provides printing management practices, roles, and responsibilities regarding [Departmental Element]-furnished desktop and network devices, including printers, copiers, fax machines and multifunction devices that will support [Departmental Element's] efforts to save money, print less by printing smarter, and reduce the number of print devices.

2. Definitions

- Consumable:* A product integral to the functioning of imaging equipment with the intent, when depleted or worn, to be replaced or replenished by the user during the normal usage and life span of the imaging equipment. Consumables may include: toner, toner containers, toner bottles, toner cartridges, waste toner cartridges, ink cartridges, ink heads, ink sticks, ribbon ink, thermal paper, copy paper, imaging units, transfer belts, transfer roller, users, drum maintenance units, and other associated items.
- Desktop Device:* A Government-furnished/funded print output device that is connected directly or wirelessly to a workstation with only one user mapped to the product.
- Duplex Printing:* Printing or copying on both sides of a piece of paper, double-sided or two-sided printing or copying.
- Duplexing Capable:* Any imaging equipment that is capable of automatically making double-sided prints or copies.
- Imaging Equipment:* Includes the following electronic equipment -copiers, digital duplicators, facsimile (fax) machines, mailing machines, multifunction devices, printers, and scanners.
- Multifunction Device:* A print output device that performs at least two of the following functions: printing; copying; scanning; and faxing.
- Network/Group Printer:* A Government-furnished/funded print output device that is connected to a wired or wireless network with multiple users mapped to the device.
- Single Function Device:* An imaging equipment product that performs only one of the core functions of copying, printing, scanning, or faxing. Fax machines that provide convenience copies are considered single function devices.

3. Background

This Policy supports implementation of Executive Order 13693, “*Planning for Federal Sustainability in the Next Decade*,” U.S. General Services Administration (GSA) Bulletins B-37, “*Federal Print Management Practices*” and B-39, “*Federal Sustainable Print Management Policy Template*,” Executive Order 13589 “*Promoting Efficient Spending*” and the Department of Energy (DOE) Strategic Sustainability Performance Plan.

4. Applicability

The provisions of this Policy support and apply as specified in Section 3 (Applicability) of Department of Energy (DOE) Order 436.1 (Departmental Sustainability).

5. Policy

A. Acquisition and Procurement

Prior to acquiring new imaging equipment, purchasers should complete a total cost of ownership assessment to determine if leasing equipment or acquiring print management services is more cost effective than purchasing new equipment.

Of note, the following sustainable acquisition requirements apply to these products:

- Imaging equipment
 - Imaging equipment must be Electronic Product Environmental Assessment Tool (EPEAT)-registered
 - Imaging equipment must be ENERGY STAR certified
 - FEMP-designated and low standby power requirements are covered by ENERGY STAR certified and EPEAT-registered products
- Consumables
 - Copy and print paper must contain at least 30% postconsumer recycled content or higher
 - Acquire toner cartridges that are remanufactured, contain recycled content, or are bio-based.

When acquiring imaging equipment, preference should be given to:

- Multifunction devices over single function devices;
- Network devices over desktop devices;
- Duplexing capable devices over non-duplexing devices;
- Equipment that can be remotely managed;
- Equipment that provides Personal Identification Number {PIN} and/or Personal Identity Verification {PIV} badge/smart card printing;

[Department Element's] imaging equipment replacement policy is to remove desktop devices and replace with network devices when possible. The [IT Management Office] will develop a replacement schedule/process for this network migration (this schedule will only apply to devices that are not under warranty or other service agreement).

The [IT Management Office] will not perform maintenance or repairs on desktop devices not under warranty or other service agreement. When a desktop device becomes inoperable, it will be recycled according to personal property disposition requirements. These desktop devices will not be replaced without an approved waiver. Affected individuals should use a network device for their printing needs. Furthermore, new requirements for desktops printers approved through the waiver process will be fulfilled from excess or reallocation of newer devices, when possible. Desktop printers taken out of service will have paper, toner and ink cartridges removed for use in remaining printers, where possible.

The [IT Management Office] will only maintain black ink and toner cartridges for desktop devices for which there are [ten (10)] or more that use the same type of cartridge. The purchase of all other ink and toner cartridges for desktop devices will have to be secured by the [Department Element] of the employee with the desktop device.

Employees are prohibited from bringing in their own desktop devices.

B. Operations and Maintenance – Equipment Ratio/Network Device Placement

To optimize imaging equipment usage and effectively allocate equipment throughout the organization, [Departmental Element's] preliminary target ratios for the number of users per print device are:

- [Twenty (20)] authorized users to one (1) multifunction device, and
- [Ten (10)] authorized users to one (1) network/group printer

Actual device allocation may vary depending on such factors as space configuration and print volume requirements. The [IT Management Office] will make recommendations on effective equipment allocation based on user needs and locations.

C. Operations and Maintenance – Printer/Imaging Equipment Default Settings

The [IT Management Office] will determine which settings must be enabled on imaging equipment; which settings must be enabled on computers; and which settings must be enabled on both imaging equipment and computers. The [IT Management Office] will enable all required settings on network devices and networked computers. Employees should enable all required settings on desktop devices or non-networked computers assigned to them. [IT Management Office] will assist employees in enabling settings on their desktop devices and non-networked computers.

At a minimum (when possible), the following settings should be set as the default:

- All duplexing capable imaging equipment should automatically print and copy in duplex mode
- Black-and-white or grayscale printing
- Draft, economy or fast mode printing

Training and instructions will be provided to employees on how to utilize special features or override default settings for special print jobs. Alternatively, employees may be directed to alternative printing and copying devices for jobs requiring departure from default settings.

In locations where secure printing is required, PIN or PIV badge/smart card printing will be enabled on network devices.

D. Operations and Maintenance – Employee Practices

In addition to settings outlined above, all employees are encouraged to utilize the following features or practices to reduce paper and ink consumption.

- Using "*Shrink to Fit*" or "*Shrink One Page*" for print jobs.
- Printing multiple slides or pages from a presentation or document on each page.
- Reviewing jobs in print preview and printing only the necessary pages.
- Removing unneeded content from print jobs.
- Removing unnecessary backgrounds, shading and graphics from print jobs.
- Printing in color only when necessary.
- Use the following default document settings:
 - Margins of [0.5"] on each side
 - Line spacing of [1.0]
 - Font type [Calibri]
 - Font size [11]

When applicable, published documents designed for printing and hard copy distribution may include sustainability messaging, including:

- "*If you no longer need this document, please pass it along or recycle it.*"
- "*This original document was printed on [PAPER AND INK/TONER SUSTAINABLE CHARACTERISTICS.]*"

All employees are encouraged to employ electronic solutions in lieu of printing hard copies, including:

- Limiting the publication, printing, and storage of hard copy documents and presuming that information should be provided and retained in an electronic form, when permitted by law, and consistent with applicable records retention requirements;

- Identifying and using, as much as possible, alternatives to printing such as increasing use of collaborative software and other cloud computing tools to distribute, store and edit documents online; and
- Saving to networked drives and distributing files electronically

All employees are encouraged to reuse paper with non-sensitive printing on one side, as scrap paper. Paper that has been used on both sides and is no longer needed should be shredded or directly recycled, as appropriate.

E. Operations and Maintenance – Power Management

The manufacturer default ENERGY STAR settings for sleep and powering down will be retained on all imaging equipment to maximize energy savings by ensuring that equipment goes to sleep and then powers down after the ENERGY STAR-specified period of inactivity.

Imaging equipment that does not have automatic sleep or power down settings should be turned off at the end of every work day.

F. Operations and Maintenance – Print Management Software

NOTE: This section may be removed if the Departmental Element does not employ Print Management Software or customized to reflect the features of the installed Print Management Software.

[Departmental Element] utilizes [SOFTWARE APPLICATION] to manage print outputs and identify print trends, as well as limit unnecessary printing.

The [SOFTWARE APPLICATION] will be installed either on all print servers, or across the network on all computers that send print jobs to network devices. Print tracking will start on [DATE] and will track and notify each employee of the total number of pages printed from their computer. Print counts will be reset [annually].

The [SOFTWARE APPLICATION] will be set to notify employees as applicable:

- Provide a warning when a black-and-white job is sent to a color device, and make a suggestion for a more resource efficient black-and-white device;
- Prohibit and/or provide user notification when employee attempts to print from a non-work related website;
- Provide user notification for jobs over [fifty (50)] single-sided pages, indicating the cost for large print jobs and require confirmation; and
- Provide user notification for jobs over [fifty (50)] single-sided pages, suggesting use of the print and copy center onsite

Specific restrictions will be identified and set by [IT Management Office]. The automatic software notification will provide a point of contact for questions or concerns.

All network devices have an optimal threshold of prints, or set number of prints, allowed during [fiscal year]. The optimal threshold of prints is based on a contractual agreement of allowable pages within a set billing cycle. Once a device is identified as meeting or exceeding the optimal threshold of prints, users will be notified to limit printing and/or utilize another device.

G. End-of-Life Management

All used imaging equipment should be reused or recycled following property disposition requirements. See the Department of Energy (DOE) G 580.1-1, *DOE Personal Property Management Guide* for guidance on environmentally sound disposition of imaging equipment.

- All used imaging equipment that is being sent for reuse and recycling should undergo media sanitization procedures.
- All used paper and ink/toner cartridges should be reused or recycled.

H. Training

[IT Management Office] will develop instructions which highlight the roles and responsibilities of all employees with regards to this Policy. The training will include instructions on how to set required defaults on imaging equipment and computers; when and how to override these defaults; how to implement other best practices described in this Policy; and who to contact with questions or issues.

These instructions will be accessible to all [Departmental Element] employees. These instructions should also be included in all new employees' orientation packet.

I. Exceptions and Waivers

Automatic Duplexing - Single-sided printing and copying is permitted only when legal regulations or protocols require printing on single sheets. In those instances, employees may override the default duplex setting and print single-sided.

Default Printing and Document Settings - Printing and copying utilizing non-default printing and document settings are permitted only when legal regulations or protocols require having different settings. In those instances, employees may override the default settings and utilize the necessary settings.

Desktop Devices and Single Function Devices - Waivers from desktop device requirements are provided through [IT Management Office]. All waivers must be requested using [STANDARD FORM NAME AND NUMBER].

Requests to purchase a desktop device must follow procedures established by [IT Management Office]. Managers have the jurisdiction to nominate employees for the purchase of a new desktop device, but the final decision to purchase resides with the [IT Management Office].

Desktop devices should only be issued under compelling circumstances. Convenience is not a valid reason for issuing a desktop device to an individual. Some examples of exceptions include cases in which the agency or facility is complying with the *Americans with Disabilities Act* or if employees work in an unusual office layout.

J. Contact Information

Any questions or concerns regarding this Policy should be directed at [\[CONTACT INFORMATION\]](#).