



Energy Efficiency and Renewable Energy
Federal Energy Management Program

How to Buy an Energy-Efficient Fax Machine

Why Agencies Should Buy Efficient Products

- Executive Order 13123 and FAR part 23 direct agencies to purchase products in the upper 25% of energy efficiency, including all models that qualify for the EPA/DOE ENERGY STAR® product labeling program.
- Agencies that use these guidelines to buy efficient products can realize substantial operating cost savings and help prevent pollution.
- As the world's largest consumer, the federal government can help "pull" the entire U.S. market towards greater energy efficiency, while saving taxpayer dollars.

Federal Supply Source:

- General Services Administration (GSA)
www.fss.gsa.gov

For More Information:

- DOE's Federal Energy Management Program (FEMP) Help Desk and World Wide Web site have up-to-date information on energy-efficient federal procurement, including the latest versions of these recommendations.
Phone: (800) 363-3732
www.eren.doe.gov/femp/procurement
- Environmental Protection Agency (EPA) has ENERGY STAR® product listings.
Phone: (888) STAR-YES (782-7937)
www.energystar.gov/products
- TCO is a labeling program for computers, monitors, and other office equipment that includes energy efficiency, environmental, and ergonomic criteria, as well as low electro-magnetic emissions.
Phone: (312) 781-6223
www.tco-info.com
- Buyers Lab, Inc. publishes a *Facsimile Specification Guide*.
Phone: (201) 488-0404
www.buyers-lab.com
- Lawrence Berkeley National Laboratory maintains a Web site devoted to office paper reduction issues and strategies.
eetd.lbl.gov/paper
- Lawrence Berkeley National Laboratory provided supporting analysis for this recommendation.
Phone: (202) 646-7950

Efficiency Recommendation

Fax Speed	Recommended "Sleep" Mode	Best Available "Sleep" Mode	
	All Types ^a	Inkjet	Laser, LED
≤ 10 pages/min.	10 watts or less	1 watt	2 watts
> 10 pages/min.	15 watts or less	2 watts	2 watts

a) For combined printer-fax equipment see the separate recommendation for Printers.

The federal supply source for fax machines is the General Services Administration (GSA). GSA's on-line ordering system, *Advantage!*, can be used to select and order fax machines. Whether buying from GSA or a commercial source, make sure that the model you order qualifies for the ENERGY STAR® label. All ENERGY STAR fax machines meet this Recommendation. Check the EPA's list to see which fax machines qualify for the label (see "For More Information").

An ENERGY STAR fax machine must have a low-power standby ("sleep") mode of 10-15 watts or less, depending on the print speed; some models use even less power in sleep mode. The low-power mode is triggered after 5 minutes of inactivity, and the active mode is automatically restored to send or receive a fax.

Look for a model with the lowest available power level in "sleep" mode, because most fax machines are in standby mode most of the time. The ENERGY STAR product listing includes information on sleep mode power consumption.

There are a few fax machine models (and several multi-function machines) that scan duplex (two-sided)

Definition

"Sleep" mode refers to a low-power standby condition, which is entered automatically after a set period of inactivity. The active mode is restored when the user touches the keypad to send a fax or when an incoming fax is received.

Where to Find an Energy-Efficient Fax Machine



Buyer Tips

originals; this avoids the need to recopy a two-sided document before faxing it. Some models also offer two-to-one image reduction for incoming faxes; this reduces transmission time and saves paper.

Multifunction equipment that combines printing, copying, and scanning along with fax capabilities may be an attractive option, especially for small offices and home use where space is limited. (See the ENERGY STAR web site for a list of qualified models.) However, the fax function requires that the entire unit remain in sleep or standby mode at all times. This may increase standby power significantly, since many of these models have higher standby/sleep power levels than a fax-only machine.

Make sure that the power management features of your fax machine have been “enabled.”

Usage Tips

To save on both paper and energy, use stick-on labels in place of a separate cover sheet for outgoing faxes. Whenever possible, use e-mail, post your documents on the World Wide Web, or take advantage of “paper-less” faxing from a desktop or network fax-modem. Consider using waste paper with one blank side for printing incoming faxes.

Fax Machine Cost-Effectiveness Example (Laser Printing, 10 pgs. per minute)			
<i>Performance</i>	<i>Base Model</i>	<i>Recommended Level</i>	<i>Best Available</i>
Annual Energy Use	377 kWh	94 kWh	26 kWh
Annual Energy Cost	\$23	\$6	\$2
Lifetime Energy Cost	\$110	\$30	\$10
Lifetime Energy Cost Savings^a	-	\$80	\$100

Definition

Lifetime Energy Cost is the sum of the discounted (present) value of annual energy costs based on average usage and an assumed fax machine life of 6 years. Future electricity price trends and a discount rate of 3.3% are based on federal guidelines (effective from April, 2001 to March, 2002).

a) These savings do not include the benefit from reduced air-conditioning costs, which depend on location and building type.

Cost-Effectiveness Assumptions

Annual energy use in the above example is based on typical office operating practices. Fax units are assumed to be left on continuously, day and night, with a total of 270 hours per year in “active” (sending or receiving) mode. The assumed electricity price is 6¢/kWh (including demand charges).

Using the Cost-Effectiveness Table

In the example shown above, a 10 pages-per-minute fax machine at the recommended efficiency level is cost-effective if its purchase price is no more than \$80 above the price of the Base Model. The Best Available model is cost-effective if its price is not more than \$100 above the price of the Base Model.

What if my Electricity Price is different?

To calculate Lifetime Energy Cost Savings for a different electricity price, multiply the savings in the above table by this ratio: $\left(\frac{\text{Your price in } \text{¢/kWh}}{6.0 \text{ ¢/kWh}}\right)$.

