



Using the FEC Annual Reporting Form Data to Calculate Environmental Benefits

Updated: 06/23/2009

PURPOSE

This document provides background information and step-by-step instructions for using data from the Federal Electronics Challenge (FEC) Annual Reporting Form to calculate environmental benefits using the Electronics Environmental Benefits Calculator (EEBC), version 2.0.

ELECTRONICS ENVIRONMENTAL BENEFITS CALCULATOR

The Electronics Environmental Benefits Calculator (EEBC) was developed to assist organizations in estimating the environmental benefits of greening their purchase, use, and end-of-life management of electronics. Data collected by FEC Facility Partners and submitted using the FEC Annual Reporting Form (ARF) is easily transported into the EEBC to calculate environmental benefits such as reduction in greenhouse gas emissions, energy, toxic materials, and hazardous wastes.

The EEBC currently estimates the environmental benefits accruing from the following activities:

- Purchase or lease of computer products registered to the Electronic Product Environmental Assessment Tool (EPEAT™), including desktop computers, liquid crystal display (LCD) and cathode ray tube (CRT) monitors, and notebook computers;
- Power management of computers and monitors currently in service at a facility;
- Extending the service life of computer and monitors within a facility;
- Reuse and recycling of desktop computers, LCD monitors, CRT monitors, notebook computers, and mobile telephones; and
- Recycling of mixed loads of electronics.

The EEBC allows users to calculate the environmental benefits of any combination of these electronics stewardship activities, depending on Partner interest and available data.

USING DATA FROM THE ANNUAL REPORTING FORM TO CALCULATE BENEFITS

The table on the next page summarizes data elements from the FEC Annual Reporting Form and where to plug them into the EEBC Microsoft Excel spreadsheet, along with brief instructions. For most data elements, all that is needed is a simple data transfer from the ARF to the EEBC.

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FEC Activity	Data from FEC ARF	Enter Data into EEBC	Instructions
Purchasing/ leasing EPEAT-registered electronic equipment	Section 2, Q1	Sheet 3a	Transfer data on the number of products (desktop computers, LCD monitors, and notebook computers) and EPEAT registration level (Bronze, Silver, and Gold) that were purchased/leased. Data for up to three different products can be entered for each calculator run. If you have more than three product types/ registration levels, you will need to run the calculator multiple times.
Computer and monitor power management	Section 3, Q1	Sheet 3b Cells D8 – D11, E8 – E11	See special instructions below.
	Section 3, Q2	Sheet 3b Cells F8 – F11	See special instructions below.
Extending the life of electronic equipment	Section 3, Q3	Sheet 3b Cells G8 – G11	See special instructions below.
Reusing electronic equipment (by Unit)	Section 4, Q1 Units "Reused"	Sheet 3b Cells D16 – D19	Transfer data on the number of desktop computers, CRT monitors, LCD monitors, and notebook computers reused.
Recycling electronic equipment (by Unit)	Section 4, Q1 Units "Recycled"	Sheet 3b Cells D23 – D26	Transfer data on the number of desktop computers, CRT monitors, LCD monitors, and notebook computers recycled.
Reusing and recycling mobile phones	Not collected	Sheet 3b Cells D20 and D27	Enter number of mobile phones sent for reuse or recycling.
Recycling electronic equipment (by Weight)	Not collected	Sheet 3b Cell D28	Enter weight of mixed load of electronic equipment (in kilograms) sent for recycling. Weight conversions are provided in the EEBC on Sheet 3b, see footnote 2.

Special Instructions for "Computer and monitor power management"

The EEBC allows you to enter the number of desktop computers, CRT monitors, LCD monitors, and notebook computers in use that are enabled with power management. The ARF only requests an enabling rate for computers and monitors. The computer enabling



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Updated: 06/23/2009

rate should be applied to desktop computers and notebook computers. The monitor enabling rate should be applied to CRT and LCD monitors.

The EEBC also allows you to distinguish between ENERGY STAR 3.0 equipment and ENERGY STAR 4.0/4.1 equipment. The ENERGY STAR 4.0/4.1 specification for monitors went into effect on January 1, 2005/December 8, 2005. Any ENERGY STAR qualified monitors purchased after these dates are likely to be ENERGY STAR 4.0/4.1. Any ENERGY STAR monitors older than this date are likely to be ENERGY STAR 3.0. The ENERGY STAR 4.0 specification for computers went into effect on July 20, 2007. Any ENERGY STAR qualified computers purchased after this date are likely to be ENERGY STAR 4.0. Any ENERGY STAR computers older than this date are likely to be ENERGY STAR 3.0.

Example

Facility A has the following electronic equipment in use, with associated power management enabling rates:

- 100 Desktop computers
- 50 CRT monitors
- 50 LCD monitors
- 30 Laptop/notebook computers

Estimated percentage of enabled monitors: 90%
 Estimated percentage of enabled computers: 60%

Facility A bought 50 of the desktop computers and all 30 laptop/notebook computers in 2008 – they are all ENERGY STAR 4.0. The other 50 desktop computers were bought in 2006 – they are ENERGY STAR 3.0. Facility A bought the 50 LCD monitors with the new desktop computers in 2008 – they are all ENERGY STAR 4.0/4.1. The CRT monitors in use have been around since 2003 – they are ENERGY STAR 3.0.

This data would be entered as follows in the EEBC:

EQUIPMENT USE AND DISPOSITION INFORMATION:				
USER INPUT	Input data			
USE:	Total number of ENERGY STAR® 3.0 units	Total number of ENERGY STAR® 4.0/4.1 units	Enabling Rate (%)	Average (l
<i>Data inputs for computers and monitors only</i>				
Desktop computers (CPUs)	50	50	60%	
CRTs	50		90%	
LCDs		50	90%	
Notebook computers		30	60%	
Total number of units in service (3.0 and 4.0/4.1)	230			

Special Instructions for “Extending the life of electronics equipment”

The EEBC allows you to enter the average lifespan of desktop computers, CRT monitors, LCD monitors, and notebook computers. The ARF only requests the average lifespan of a computer at your organization. You have a number of options for entering the lifespan data from your ARF in the EEBC:

- Enter this data for just desktop computers.
- Enter this data for desktop computers and the monitor type(s) in use with desktop computers at your facility.
- Enter this data for all computers (desktop and laptop/notebook) and monitors (CRT and LCD).
- Enter this data for desktop computers and estimate the lifespan for the other equipment.

NO BENEFITS DISPLAYING

The EEBC compares the user entered data (e.g., power management rate or life span) to the baseline data for the entered product. If the user entered data is less than or equal to the baseline, then no benefits are calculated.

In version 2.0 of the EEBC, the following enabling rates are used for the baseline:

- Desktop computers: 8%
- CRT monitors: 77%
- LCD monitors: 81%
- Notebooks/laptops: 8%

In version 2.0 of the EEBC, the following life spans are used for the baseline:

- Desktop computers: 49 months
- CRT monitors: 49 months
- LCD monitors: 49 months
- Notebooks/laptops: 38 months

FIRST YEAR AND LIFETIME BENEFITS

The EEBC separately provides information on benefits accrued in the first year of owning, using, or reusing/recycling an electronic product and the benefits accrued over the lifetime of owning and using a product. These benefits are broken out as follows:

First Year:

- All savings from reduced toxicity, recycled content material use, recycled content in packaging, and reuse of packaging from the purchase or lease of an EPEAT-registered product.



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Updated: 06/23/2009

- One year of energy efficiency savings from use of an EPEAT-registered product, or from enabling power management on a product above the default rate.
- All savings from the reuse and recycling of any electronic equipment.

Lifetime:

- All the benefits listed in the first year savings.
- All savings from the reduction in hazardous waste at the end-of-life of an EPEAT-registered product.
- The remaining years of energy efficiency savings from the use of an EPEAT-registered product, or from enabling power management on a product above the default rate. The number of years in a product's lifetime is based on the average lifetime of the product.
- All savings from extending the life of electronic equipment.

REFERENCES

Information and instructions for the FEC Annual Reporting Form are available online at: <http://www.federalelectronicschallenge.net/report.htm>.

The Electronics Environmental Benefits Calculator may be downloaded as a Microsoft Excel® spreadsheet from the FEC Web site: <http://www.federalelectronicschallenge.net/resources/bencalc.htm>.

CONTACT INFORMATION

If you have questions related to this resource or need other assistance with the Federal Electronics Challenge, please contact your Regional Champion. The list of FEC Regional Champions is available at <http://www.federalelectronicschallenge.net/champions.htm>.

Partners may also request technical assistance via email to partner@electronicschallenge.net.

FEDERAL ELECTRONICS CHALLENGE

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