Overview of Version 3.0 of Electronics Environmental Benefits Calculator (EEBC)

FEC Partner Call/Webinar

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What is the EEBC?

- The Electronics Environmental Benefits Calculator (EEBC) was developed to assist organizations in estimating the environmental benefits of greening their purchase, use and disposal of electronics

- The EEBC estimates the environmental and economic benefits of:
  - Acquiring Electronic Product Environmental Assessment Tool (EPEAT)-registered products
  - Enabling power management features on computers and monitors above default percentages
  - Extending the life of equipment beyond baseline values
  - Reusing computers, monitors and cell phones
  - Recycling computers, monitors, cell phones and loads of mixed electronic products

Revisions in Version 3.0

- Removed the ability to select a cathode ray tube (CRT) monitor for purchasing calculations (see Sheet 3a)
- Removed the ability to select "Not Applicable" for EPEAT registration status (see Sheet 3a)
- Power management rates for computers and monitors can be entered separately to allow to differences in the settings on notebook computers and displays (see Sheet 3b)

Revisions in Version 3.0

- Default values for EPEAT-registered products have been updated based on a registry analysis completed in March 2012 (see Sheets 8b1 and 8b2)
- ENERGY STAR-related assumptions have been updated to reflect the specification Version 5.2 for computers and Version 5.1 for displays (see Sheet 8c, 8d, 8e and 8f)
- Updated and added equivalencies (see Sheet 7)
- Miscellaneous error corrections (see Sheet 9)

Upcoming Revisions

- Update of all general assumptions (sheets 8a and 8c)
  - Fall 2012
- Web-based application
  - Winter 2012/2013

Finding and Opening the EEBC

- The file and instructions are posted at https://www.federalelectronicschallenge.net/resources/bencalc.htm

- To ensure that the EEBC functions properly, please enable macros to run in Excel prior to opening the EEBC spreadsheet:
  - In Excel 2007, these settings are through the Office button -> Excel Options -> Trust Center -> Trust Center Settings -> Macro Settings.
  - In Excel 2003, these settings are through Tools -> Macro -> Security.

Data Entry and Results Sheets

- 3a: User input for general purchasing data
- 3b: User input for power management, lifespan extension, reuse and recycling data
- 3c: User input for specific purchasing data
- 5a: Results (tables)
- 5b: Results explanations
- 6: Results (graphs)
- 7: Results (equivalents)

Additional Information Sheets

- 1: Background information and instructions
- 2: Flow chart of product lifecycle
- 4: Data comparisons
- 8a: Baseline product assumptions
- 8b1: General EPEAT and FEC assumptions
- 8b2: Specific EPEAT assumptions
- 8c: General data assumptions
- 8d: ENERGY STAR desktop computer assumptions
- 8e: ENERGY STAR display assumptions
- 8f: ENERGY STAR laptop computer assumptions
- 9: List of revisions

Navigation

- Move between sheets
- Use buttons at the bottom or top of sheets 1, 3a, 3b, 3c, 5a, and 6

Data Entry

Data Entry for Purchasing

- Sheet 3a
  - Product type
    - Desktop computer, laptop computer, LCD monitor
  - Number of products
  - EPEAT registration
    - Yes, No
  - EPEAT tier
    - Bronze, Silver, Gold
- Sheet 3c
  - Data entry for specific EPEAT registration criteria

Purchasing Considerations

- Must have product type, number and whether or not EPEAT registered
- If registration tier is “Don’t Know,” EEBC assumes Bronze
- Sheet 3c is optional but will provide more accurate results
  - Data is available in EPEAT Registry

Data Entry for Power Management and Lifespan Extension

- Sheet 3b
  - Products in use
    - ENERGY STAR 4.* and 5.* computer desktops, computer laptops, LCD monitors, CRT monitors
  - Display power management rate
    - Percentage
  - Computer power management rate
    - Percentage
  - Average lifespan
    - Months

Power Management Considerations

- ENERGY STAR 5.0 specification for monitors went into effect on October 30, 2009 for displays less than 30 inches
- ENERGY STAR 5.2 specification for computers went into effect on July 1, 2009
- There are currently no CRT monitors qualified to the ENERGY STAR 5.0 specification, any CRT monitors in use at your organization are likely ENERGY STAR 4.* or older

Power Management Considerations

- No benefits will be calculated if your enabling rate is less than the default:
  - Desktop computers: 8%
  - Notebooks (computer portion): 8%
  - Notebooks (display portion): 81%
  - CRT monitors: 81%
  - LCD monitors: 81%
- Consider the ENERGY STAR calculator if you want the benefits of purchasing and all power management

Lifespan Considerations

- No benefits will be calculated if your lifespan is less than the default:
  - Desktop computers: 49 months
  - Notebooks/laptops: 38 months
  - CRT monitors: 49 months
  - LCD monitors: 49 months

Data Entry for End-of-Life

- Sheet 3b
  - Reuse
    - Number of desktop computers, laptop computers, LCD monitors, CRT monitors, cell phones
  - Recycling
    - Number of desktop computers, laptop computers, LCD monitors, CRT monitors, cell phones
    - Weight of mixed electronics (kilograms)

End-of-Life Considerations

- Do not include the same equipment in the number of units and weight of mixed loads
- Weight of mixed loads is entered in kilograms

Avoiding "Double-Counting"

- Purchasing data
  - EEBC calculating the benefits of buying a product
  - EEBC assumes products meet most recent version of ENERGY STAR and are enabled at default rate
  - Enabling rate can be changed in Sheet 3c
  - Calculations use the same enabling rate for conventional and EPEAT product
- Use data
  - EEBC calculating the benefits of behavior change
  - Calculations use the same product enabled at default and entered rate

Avoiding "Double-Counting"

- Enter new purchases in Sheet 3a
- Enter products in use, including new purchases in Sheet 3b
- Do not change the power management rate in Sheet 3c

Results

First Year Benefits

- All savings from reduced toxicity, recycled content in material and packaging, and reuse of packaging for EPEAT-registered products
- 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 Benefits

- 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
- 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
  - Number of years based on product lifetime
- All savings from extending the life of electronic equipment

Benefits Greater for ES 4.*?

- ENERGY STAR 5.* products are more energy efficient during their lifespan than ENERGY STAR 4.* products
- EEBC calculates behavior change
- Difference between the energy used by an ENERGY STAR 5.* product that is power managed and one that is not power managed is smaller than the difference between the energy used by an ENERGY STAR 4.* product that is power managed and one that is not power managed.

Additional Notes on Results

- Greenhouse gas emissions included in total air emissions
- Water emissions are only pollutants, not volume of water
- Toxic material savings are the weight of toxic constituents
- Hazardous waste savings are the weight of entire components rendered hazardous by constituents
- All cost savings are based on energy savings

FEC Resources

- Answers to Frequent Questions: Electronics Environmental Benefits Calculator
  - https://www.federalelectronicschallenge.net/resources/docs/faq_eebc.pdf
- Using FEC Annual Reporting Form Data to Calculate Environmental Benefits
  - https://www.federalelectronicschallenge.net/resources/docs/arf_eebc.pdf

Questions?

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