

Life-Cycle Assessment of Desktop Computer Displays: Summary of Results



This summary document is based on information presented in the project report, *Desktop Computer Displays: A Life-Cycle Assessment*, written by University of Tennessee under a grant from EPA. Some information in the Life Cycle Assessment was provided by individual technology vendors and has not been independently corroborated by EPA. The identification of specific products or processes in this document is not intended to represent an endorsement by EPA or the U.S. Government. This summary document has not been through a formal external peer review process.



Acknowledgments

This document was prepared for the U.S. Environmental Protection Agency's Design for the Environment (DfE) Computer Display Project by Abt Associates under contract #68-W-01-039. This document is based primarily on the full project report, *Desktop Computer Displays: A Life-Cycle Assessment*, prepared by Maria Leet Socolof, Jonathan G. Overly, Lori E. Kincaid, and Jack R. Geibig of the University of Tennessee Center for Clean Products and Clean Technologies, under a grant from the U.S. Environmental Protection Agency's Design for the Environment Program, in the Economics, Exposure, and Technology Division of the Office of Pollution Prevention and Toxics.

The Life-Cycle Assessment would not have been possible without the assistance of the technology suppliers and their customers who voluntarily participated in the project. The project Core Group provided valuable guidance and feedback throughout the preparation of the report. Core Group members include: Kathy Hart and Dipti Singh, U.S. EPA; Holly Evans and Heather Bowman, Electronic Industries Alliance; Frank Marella, Sharp Electronics Corp.; Maria Socolof and Lori Kincaid, University of Tennessee Center for Clean Products and Clean Technologies; John Lott, Dupont Electronic Materials; Bob Pinnel, U.S. Display Consortium; Greg Pitts, Ecolibrium; Doug Smith, Sony Electronics Inc.; Ted Smith, Silicon Valley Toxics Coalition; David Thompson, Matsushita Electronic Corporation of America; and Dani Tsuda, Apple Computer, Inc.

Contents

Introduction	1
Question 1: What is a life-cycle assessment?	3
Question 2: Which computer displays were investigated during the project?	5
Question 3: How were environmental and health impacts evaluated?	11
Question 4: What are the environmental and health impacts of CRTs?	15
Question 5: What are the environmental and health impacts of LCDs?.....	20
Question 6: Overall, where were the greatest environmental and health impacts?	25
Question 7: What are the performance and cost differences between the two technologies?.....	27
Question 8: Can the lead, mercury, and liquid crystals in computer displays pose health risks?	30
Question 9: What can computer display manufacturers do to reduce environmental impacts?	34
Question 10: Where can I find more information about the computer display industry?	36