

Computers and the Environment: Understanding and Managing their Impacts

edited by

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**What are the environmental impacts associated with personal computers (PCs)?
How should we manufacture, buy, use and dispose of them so as to reduce these impacts?
Governments and firms are increasingly responding to mitigate some of the problems. In the E.U., Japan, and Taiwan, mountains of waste computers are being dealt with via legislation mandating recycling. Measures are also being taken to reduce the content of lead, mercury and other toxic substances put into computers in the first place. Are these responses enough?
Do we understand enough about the impacts to take appropriate social response?**

These questions are taken up in a new edited volume in the Eco-Efficiency in Industry and Science series of **Kluwer Academic Publishers: Computers and the Environment, edited by Ruediger Kuehr and Eric Williams**. Collecting perspectives from manufacturers, recyclers, environmental scientists and policy analysts, the volume presents a set of analyses on issues important for understanding and planning response to the environmental challenges posed by computers.

Some highlights of the volume include:

Manufacturing computers is materials intensive; the total fossil fuels used to make one desktop computer weigh over 240 kilograms, some 10 times the weight of the computer itself. This is very high compared to many other goods: For an automobile or refrigerator, for example, the weight of fossil fuels used for production is roughly equal to their weights. Also, substantial quantities of chemicals (22 kg), and water (1,500 kg) are also used. The environmental impacts associated with using fossil fuels (e.g. climate change), chemicals (e.g. possible health effects on microchip production workers) and water (e.g. scarcity in some areas) are significant and deserve attention.

The environmental benefits and economic costs of recycling computers under the European Union legislation WEEE depend very much on how the system is implemented. Recycling managed by a monopolist concern, whose main interest is meeting simple recycling targets for a fixed fee, could result in an expensive system with relatively small environmental benefit. A multilateral concern aimed at maximizing profit and reuse across the life cycle presents a more promising picture.

Decisions by consumers on how PCs are used and disposed of have an enormous effect on environmental impacts. Extending the usable life is very effective for reducing all types of burdens, but relatively few older PCs are being resold, refurbished or recycled – most are stored in warehouses, basements, or closets and eventually end up in landfills. Awareness building and incentives are needed so that consumers will consider environmental issues when buying, using and finally disposing of a computer.



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