Green Computing

The biggest challenge facing the environment today is global warming, caused by carbon emissions. According to the US Environment Protection Agency (EPA), the process of generating electricity is the largest source of carbon dioxide emissions. An ever-increasing manufacture and use of computers has escalated the energy demands, costs, and electronic wastes.

In a typical desktop computer, nearly half the input power is wasted and never reaches the processor, memory, disks, or other components. Besides energy consumption, inefficient computers and servers emit heat, which increases the demand on cooling systems, and hence increased energy need. Many toxic substances like lead, cadmium, mercury, etc. are conventionally used in manufacturing computers. To minimise the pollution due to the growing use of computers, there is a need to look for eco-friendly computing.

What is Green Computing

Green computing is all about minimising environmental impact of computers. It involves enhanced energy efficiency during the product's lifetime, improved power management or better thermal management, and use of non-toxic and environment friendly materials in central processing units (CPU), servers and peripherals.   Green computing promotes recyclability or biodegradability of discarded products and factory waste and proper disposal of electronic waste.

Industry's Response

Now more and more companies worldwide realise that going green is the need of the hour. Manufacturers aim to improve energy efficiency, reduce the use of environmentally hazardous materials and use recyclable materials. In India, computer giants like Wipro, HCL, HP have launched their eco-friendly range of computers (desktops and laptops) that aim at reducing the e-waste in the environment. They are likely to be free of hazardous materials such as brominated flame-retardants, PVCs and heavy metals such as lead, cadmium and mercury, which are commonly used in computer manufacturing.

Awareness Needed

Until the awareness is built up there will be no true development of green computing. The awareness programme should highlight that
* green computing minimises the electricity bill.
* it saves the resource of the country as a whole.
* the use of non-toxic material in the equipments make the worker and user safe from health problem and occupational hazards.
* in the long run these green equipment can be less costly without any hidden cost of waste and enhanced resource consumption.

What You Can Do

You can improve energy management, increase energy efficiency, reduce e-waste, and save money in computing by following these simple steps:

* Turn off your computer at night and also when not to be used for long. Consider using a surge protector which automatically senses when the computer is not in use and cuts power to it and all peripherals.

* Buy an Energy Star and RoHS-compliant computer. Notebooks use less energy than desktop units.

* Enable the standby/sleep mode and power management settings on your computer.

* Consider a smaller monitor. Also, flat-screen monitors use significantly less energy.

* Plan your computer-related activities; do them all at once, keeping the computer off at other times.

* Switch off your monitor when you are not using it instead of using screen savers.

* Choose dark backgrounds for your screen display; bright-coloured displays consume more power.

* Turn off all printers and peripherals unless you are using them. Network and share printers, if possible.

* Consider using an ink-jet printer; they use less energy than laser printer. Use double-sided printing functions. Print on recycled-content paper using recycled toner cartridge.

* Review document drafts and e-mails onscreen instead of printing them out. E-mail communications as an alternative to paper memos and fax documents.

Adopt these simple everyday practice, enjoy green computing and save your environment.

Sources:epa.gov, apcmedia.com, Green Computing - New Horizon of Energy Efficiency and E-Waste Minimization - Sanghita Roy and Manigrib Bag

Some International Landmarks

1992: The EPA launched Energy Star, a voluntary labelling programme designed to promote and recognise energy-efficiency in computers, monitors, climate control equipment, and other technologies.

1997: Kyoto Protocol for the United Nations Framework Convention on Climate Change made computer manufacturers undertake energy audits to calculate the electricity used by the device over its lifetime and determine the quantum of carbon dioxide emissions to take remedial action.

2003: The European Union adopted the Restriction of Hazardous Substances (RoHS) directive that restricts the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, etc. in the manufacture of electronic and electrical equipments.

2005: The implementation of the RoHS through the Waste Electrical and Electronic Equipment Directive (WEEE) of 2005. This directive set targets for collection, recycling, and recovery of electrical goods, aimed at reducing toxic e-waste.

National Landmarks

2004: A National WEEE Task Force was formed to identify, plan and implement issues involving e-waste.

2008: Union Ministry of Environment and Forest (MoEF) issued Guidelines for environmentally sound management of e-waste.

2010: MoEF makes draft of E-waste (Management and Handling) Rules. 2010, that specify European Union Norms for Indian electronics, including computers.