GREEN CHOICE PHILIPPINES

NELP-GCP - 20080022
DESKTOP COMPUTER

1. ENVIRONMENTAL SCENARIO

Information and communication technologies which include computers are widely used across any kind of business sector and personal use. A 2002 survey of information and communication technologies of Philippine Business and Industry shows that 90 to 100% of ICT and some non-ICT establishments use these technologies (National Statistics Office, 2003).

Studies show that a typical desktop computer with monitor which on the average weighs 24 kilograms, would consume at least 10 times its weight in fossil fuels, chemicals and water to manufacture (United Nations University, 2004). Personal computers impact the environment throughout its life-cycle. It contributes to resource depletion, mainly due to the resources used and energy consumed during production and its use. There is also a possible health impact due to chemical exposure and emissions. The most apparent environmental impact of computers is the increasing volume of toxic and hazardous solid waste generated when products are discarded for newer machines or at its end of life. However, the modularity of desktop computers - with components that can easily be replaced or upgraded unlike that of a laptop computer may be taken advantage of to reduce the overall impact of the product throughout its life-cycle.

These criteria are in line with the Global Eco-labelling Network Standard for Personal Computers (www.gen.gr.ip/core_c.html). The following set of requirements focuses on the recyclability of personal computers to reduce the amount of waste entering the waste stream, minimizing health impacts, and prolonging the useful life of computers and its parts to minimize production by promoting reuse and recycling of modules and parts.

2. DEFINITION OF TERMS

2.1. 3R

Reduce, Reuse, Recycle

2.2. BATTERIES

Refers to both primary and secondary batteries wherein a primary battery discharges only once, while a secondary battery can be recharged for repeated use.

2.3. *DENR ADMINISTRATIVE ORDER 2005-05 (DENR AO 2005-05)*

Toxic Chemical Substances for Issuance of Chemical Control Orders

2.4. *DENR ADMINISTRATIVE ORDER 2005-27 (DENR AO 2005-27)*

Revised Priority Chemical List

2.5. DESKTOP COMPUTER

Personal computers installed for use in one location such as on the desk, consisting of CPU, display devices and peripherals (keyboard and/or mouse).

2.6. DISPLAY DEVICES

Refer to output devices, in the form of Cathode Ray Tubes (CRT) and Liquid Crystal Displays (LCD).

2.7. ***HAZARDOUS WASTES*** ***{AS DEFINED BY DAO 92-29}***

Refer to by-products, side-products, process residues, spent reaction media, contaminated plant or equipment or other substances from manufacturing operations and as consumer discards of manufactured products which present unreasonable risk and/or injury to health and safety and to the environment.

2.8. ISO 9296

Information Technology Acoustical Noise Declaration

2.9. RE-USE

Shall refer to the process of recovering materials intended for the same or different purpose without the alteration of physical and chemical characteristics.

2.10. RECYCLING

Reprocessing in a production process of waste materials for their original purpose or for other purposes, but excluding energy recovery;

2.11. REPUBLIC ACT 6969 (RA 6969)

Toxic Substances and Hazardous and Nuclear Waste Control Act of 1990.

2.12. REPUBLIC ACT 9003 (RA 9003)

Ecological Solid Waste Management Act of 2000

2.13. RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE (ROHS)

A European Union Directive which restricts the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) in new electrical and electronic equipment

2.14. TAKE-BACK SYSTEM

It requires the producers either take back spent products and manage them through reuse, recycling, or remanufacturing, or delegate this responsibility to a third party. It is also known as Extended Producer Responsibility (EPR). The idea underlying EPR is that placing responsibility for waste management with producers creates a strong incentive for them to redesign products with an aim toward less material use and improved recyclability.

2.15. TRANSPORT

Includes conveyance used in air, water and land.

3. SCOPE

These criteria are applicable to Desktop Computers.

4. GREEN CHOICE REQUIREMENTS

4.1. Product Quality Performance

4.1.1. Quality Performance

The product shall comply with the performance requirements of the relevant Philippine National Standard for its intended application in Table 1 or the product meets any other internationally accepted standard.

Table 1 – Applicable Philippine National Standards for I.T. Equipment

Standard No.	Title

PNS 60950-2005	Information Technology Equipment – Safety Part 1: General Requirements

4.1.2. Warranty

The manufacturer shall offer a commercial guarantee on the quality of the product provided the product is used for its intended purpose. The period of this guarantee must be at least 3 years desktop computers

4.2. Product Environmental Performance

4.2.1. Compliance to Environmental Regulations

The applicant is required to comply with relevant environmental legislations. This includes production process, transport and disposal features of the product.

4.2.2. 3R Design

The criteria for the design of personal computers are established based on its modularity. Each part of the product or module can be separated from the whole, hence can be treated as a single entity for the purpose of recyclability, disassembly and reparability. The following requirements have to be fulfilled:

- The parts of the product shall be recyclable.
- There shall be no inseparable joints between different materials such as glued or welded joints.
- Modules shall be easily removed.
- Connections between parts must be easily located
- Labels and/or stickers shall be made up of the same material as the part in which they are attached and/or it must not be treated in a manner that would pose difficulty in recycling.

4.2.3. Energy

Energy consumption shall comply with the requirements of Energy Star at the time of the application.

4.2.4. Noise

The declared sound level according to ISO 9296, shall be measured and not exceed:

Table 4 : Sound Emission Limits for Desktop Computers

	Sound level (dB)
Idle operating mode	48
Accessing a disk drive	55

4.2.5. *Hazardous Substances*

- The product shall not contain substances listed in the DENR AO 2005-05 and/or with ROHS.
- Heavy metals in batteries and accumulators may not exceed the level as described in Table 5. ***{Reference: Battery Directive}***

Table 5: Maximum heavy metal content in batteries and other specified parts

	Content (%)
Mercury	0.0005
Cadmium	0.002
Lead	0.004

4.2.6. Packaging Requirements

The packaging material shall be reusable and recyclable. The following requirements have to be fulfilled:

- Primary packaging shall have a plastic resin identification code.
- Packaging materials shall not be treated or made in a manner that would prevent reusing and recycling.
- Cardboard packaging shall consist of at least 80% recycled content.

4.2.7. *Take Back and Recycling*

The applicant shall have an established and validated retrieval or take back system equivalent to not less than 10% of its total units sold in terms of computer parts and/or peripherals.

4.3. OTHER CRITERIA

4.3.1 Availability of Spare Parts and Consumables

The applicant shall ensure that all spare parts and consumables are available for 5 years following the termination of production.

4.3.2 Consumer Information

The following technical information shall be specified in the user's manual:

- Instructions on the positioning of the machine
- Information about how and where the used and decommissioned products/parts can be returned for recycling and/or disposal.

5. EVALUATION AND VALIDATION

PRODUCT CRITERIA	EVALUATION AND VALIDATION
4.1 PRODUCT QUALITY PERFORMANCE	
4.1.1 Quality Performance	The applicant shall submit a certification from duly recognized/ accredited laboratories and certification bodies.*
4.1.2 Warranty	The applicant shall submit a portfolio and be accompanied by the relevant documentations such as warranty certificate.
4.2 PRODUCT ENVIRONMENTAL REQUIREMENTS	
4.2.1 Compliance to Environmental Regulations	Submission of applicable licenses and permits to operate indicating the manufacturer's compliance with agreements on environmental regulations applicable to the area where the plant is located.**
4.2.2 3R Design	The applicant shall submit a portfolio and statement in writing signed by the Chief Executive Officer or counterpart of the company and shall be accompanied by the relevant documentations.**
4.2.3 Energy	
4.2.4 Noise	The applicant shall submit a certification or testing results from recognized/accredited laboratories and certification bodies.*
4.2.5 Hazardous Substances	
4.2.6 Packaging Requirements	The applicant shall submit a program on packaging waste material management, portfolio and statement in writing signed by the Chief Executive Officer or counterpart of the company and shall be accompanied by the relevant documentations and samples.**
4.2.7 Take Back and Recycling	The applicant shall submit its program on take back program. The program shall ensure a 10% retrieval of the annual sales.** %Retrieval = $\frac{\text{no. units retrieve (end of life)}}{\text{no. units sold}}$
4.3 OTHER CRITERIA	
4.3.1 Availability of Spare Parts and Consumables	The applicant shall submit a portfolio and statement in writing signed by the Chief Executive Officer or counterpart of the company and shall be accompanied by the relevant documentations.**
4.3.2 Consumer Information	

* Laboratories accepted by national or international accreditation bodies such as the Asia Pacific Laboratory Accreditation Cooperation (APLAC) or International Laboratory Accreditation Cooperation (ILAC)
** Notarized documents

6. PERIOD OF VALIDITY

The product criteria shall take effect for three (3) years from the date of its approval, and subject to change or withdrawal by the *Green Choice Philippines-NELP Board*, if proven necessary at any period of time.

7. REFERENCES:

American Chemical Society. (2000). Is Extended Producer Responsibility Effective? *Environmental Science & Technology* , 170-175.

DENR Administrative Order 2005-05: Toxic Chemical Substances for Issuance of Chemical Control Orders

DENR Administrative Order 2005-27: Revised Priority Chemical List
Republic Act 6969: Toxic Substances, Hazardous and Nuclear Waste Control Act

European Union. (2006, September 06). DIRECTIVE 2006/66/EC on Batteries and Accumulators and Waste Batteries and Accumulators

European Union (2003, January 27). DIRECTIVE 2002/95/EC on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment

Japan Environment Association; Eco Mark Product Category No. 119: Personal Computers, Version 2.2 Certification Criteria

National Statistics Office. (2003, December 3). *2002 Survey of Information and Communication Technology (SICT) Highlights*. Retrieved March 2, 2008, from National Statistics Office Website: http://www.census.gov.ph/data/sectordata/sr0373tx.html

New Zealand Ecolabelling Trust; License Criteria for Personal Computers

Nordic Ecolabelling; Swan Labelling of Personal Computers version 5.0

PNS 60950-2005 - Information Technology Equipment – Safety
Part 1: General Requirements

RAL German Institute for Quality Assurance and Certification; Computers RAL-UZ 78; 2006

United Nations University. (2004, May-June). *UNU Update*. Retrieved February 28, 2008, from UNU Update Website: http://update.unu.edu/archive/issue31_5.htm

GREEN CHOICE PHILIPPINES

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