Product-Category Rules (PCR)

for Preparing an Environmental Product Declaration (EPD) for

Desktop Computer

PCR 2011:1.0

Lite-On Technology Corporation

Version 1.0
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Table of Contents

1. General Information

This document is to be used as the product category rules (PCR) for the global production and manufacturing of desktop computer. The requirements specified in this PCR are intended to be used for EPDs certified in accordance with ISO 14025 standard. This document shall be valid until October 20, 2013.

This PCR was jointly prepared by Lite-On Technology Corporation and Foundation of Taiwan Industry Service. Representatives from major Taiwanese manufacturers of similar products and stakeholders were invited by the Taiwan Electrical and Electronic Manufacturers Association (TEEMA) to the open consultation meeting on August 19, 2011, to participate in the discussion and review of this PCR. Environment and Development Foundation (EDF) then reviewed and approved this PCR.
This PCR is applicable to products with the Harmonized System (HS) Code of 8471.41, 8471.49 and 8471.50.

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Note: For information regarding HS Codes for products which this PCR is applicable, please refer to Appendix III Table for Classification of Goods by HS Codes.

2. Company and product description

The EPD shall include information about the manufacturing company/organization. The information may include manufacturing process related information, and environmental related information, such as the environmental management system information. The information may also include special issues which the company/organization would like to emphasize, such as the products meeting certain environmental criteria, or environmental safety and health related information.

This PCR is applicable to both business to consumer (B2C) communications and business to business (B2B) communications. While conducting certification of product related environmental impacts, the inventory shall also include product accessories and packaging.

2.1 Product group function

A desktop computer is a computer whose main unit (usually a finished or semi-finished computer system) is designed to be located in a permanent location, often on a desk or on the floor. The finished or semi-finished desktop computer products do not include input/output device such as an external display, keyboard, and mouse.

Desktop computers are not designed for portability, so the device can be connected to input devices, such as keyboard, graphics tablet, mouse, microphone, video cameras; or output devices, such as monitors, speakers, printers, etc., in order for the end users to control computing unit and handling of digital information. Moreover, desktop computers are intended for a broad range of home and office applications.

(Note: Please refer to the definition for desktop computer in the U.S. EPA ENERGY STAT Program’s Energy Star Computer Specification - Version 5.2.

2.2 Product components

The desktop computer's main components may include the following:

- Motherboard
- Chassis Assembly Parts
- Power Supply
- Thermal Device
- Input /Output Interface

The desktop computer may also include but not limited to the following components:

- Central Processing Unit (CPU) or Accelerate Processing Unit (APU)
- Random Access Memory (RAM)
- Digital Storage Device: e.g, hard disk driver
- Input/Output Interface Device: e.g., card reader, optical disk driver, VGA card, network card, etc.
- Other components: e.g., packaging materials and cables.

Components not listed above are considered minor/secondary components, such as the user manual or labels. The data quality requirements for the main and secondary components are described in Section 9 on calculation rules and data quality requirements.

2.3 Product technical description

The product technical description part of the EPD shall include the following information:

- ☐ Product Name and Model Name
- ☐ Operation System
- ☐ Product Outline Dimension and Product Weight
- ☐ CPU Type or APU Type
- ☐ The Maximum Size of RAM
- ☐ The Maximum Size of Digital Storage Device
- ☐ The power supplies of nameplate output power
- ☐ External and Internal Interface Device Specification
- ☐ Materials used in outer case components
- Other components: Descriptions of purpose of accessories and packaging materials
- ☐ Design Using Life or Guarantee Life

3. List of materials and chemical substances

The contents of the following materials and substances in the product shall be declared:

- All materials of the product (excluding packaging material) with weight ratio (material weight/product weight (excluding packaging)) ≥ 1%;
- All materials of the packaging with weight ratio (material weight/packaging weight) ≥ 1%;
- All materials/substances in the product (including packaging) regulated by legal and customer requirements;

- The following materials in the product components: flame retardants, lead content in solder, lead and flame retardant content in solder masking agent, and substances regulated by EU's RoHS Directive (the latest version).

The declaration of halogen-free flame retardants, lead-free solders and no RoHS-regulated substances may only be made when appropriate evidences are available (for example, test reports from accredited laboratories/testing facilities). The following organizations may provide accreditation for testing facilities: Taiwan Accreditation Foundation (TAF), (Asia Pacific Laboratory Accreditation Cooperation (APLAC), International Laboratory Accreditation Cooperation (ILAC) or ILAC Mutual Recognition Arrangement (ILAC MRA). For definitions of testing methodology and confirmations of regulated hazardous substances based on the accredited laboratories' product testing methods, please refer to IEC 62321 Standard.

4. Declared unit

The declared unit is one unit of desktop computer. This unit is chosen because the desktop computer products are marketed and sold in such a unit.

5. System boundaries

The main system boundaries for the declared product system are presented as follows:

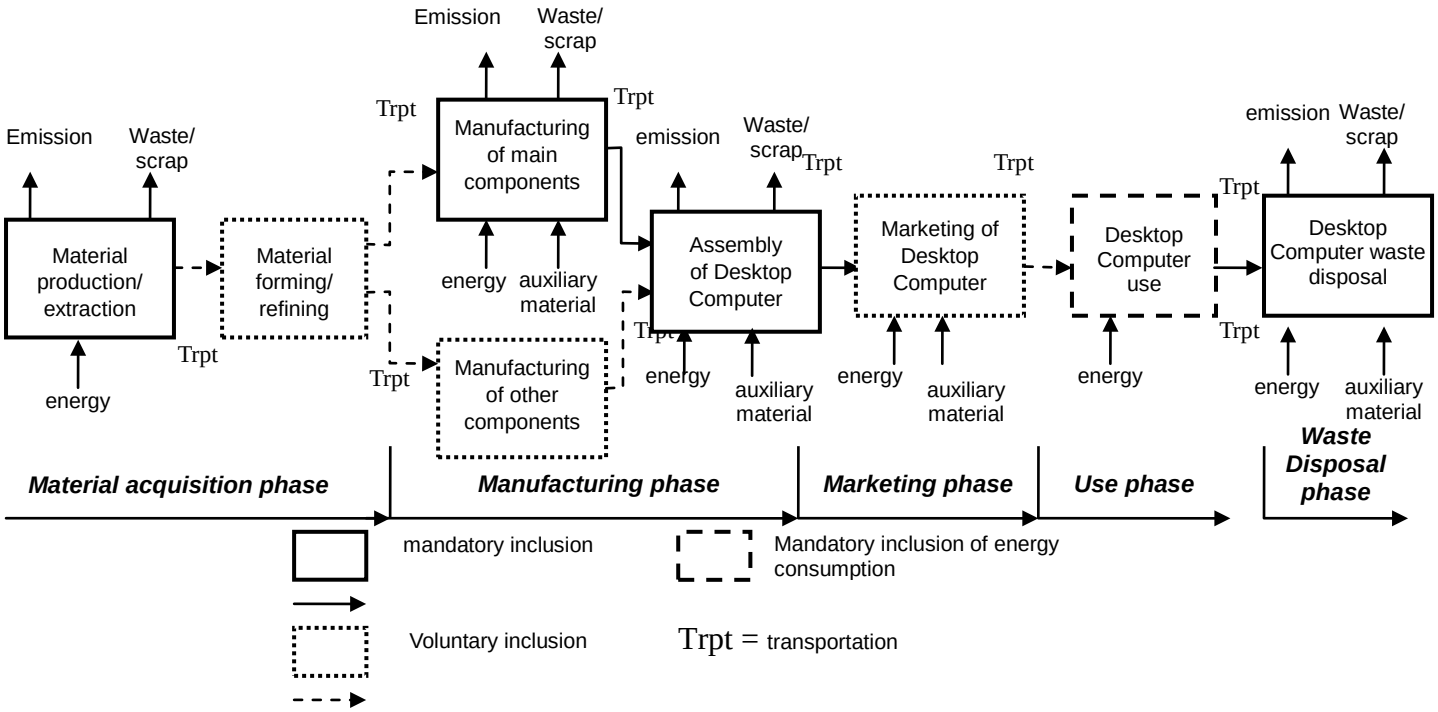

Figure 1 System boundary of the product system

As noted in Figure 1 above, the product definition is within the scope of the Business to Consumer/Customer (B2C) purpose, thus the scope will cover five stages of the product life cycle: raw material acquisition, product manufacturing, distribution, product use and waste disposal.

Note: B2C refers to business-to-customer/consumer transaction, including the whole transaction process, such as communications of product information to the customer or consumer, delivery of goods to the customer or consumer, and end of life disposal of goods.

The data quality requirements for the main components and secondary components are described in Section 9 on calculation rules and data quality requirements.

Raw Materials Acquisition Stage

The LCA shall include information for the following unit processes:

— Material extraction and manufacturing of main components and other components;

— The production/generation of energy used for raw material manufacturing.

The inclusion in the LCA the information on the forming and refining of raw materials and transportation of raw materials is of voluntary reporting nature.

Manufacturing Stage

— Manufacturing of main components and transportation of process waste to waste disposal plants;

— Assembly of products and transportation of process waste to waste disposal plants;
— Transportation of main components to desktop computer manufacturing site.

The inclusion in the LCA the information on the input/output of packaging material during main components manufacturing process and the manufacturing of minor/secondary components/parts is of voluntary reporting nature.

Distribution Stage

The LCA shall include information for the following unit processes:

- Products' distribution transportation.

Besides the distribution transportation, the inclusion in the LCA the information on the input/output of all energy/resources and waste generation/discharge and transportation of marketers during the distribution stage are of voluntary reporting nature.

(Note: The distribution transportation means the shipping of products to logistics centers, retailers or customer designated locations; while marketing transportation means the transportation from terminal sites of the distribution stage to the sites where end-users or customers obtain the products.

Use Stage

Product manufacturer for this stage shall provide the energy consumption information based on the highest product technical specifications, and conduct environmental impact assessment based on this information; while brand-name manufacturer shall conduct environmental impact assessment based

on the product's technical specifications as shipped. The definitions of energy consumption, test standard and product usage scenario are described as follows.

Product shall declare its power consumption during idle mode, sleep mode and off mode. The test shall be conducted based on the latest version of the ENERGY STAR computer specification or other international, national and industry. The main power source adopted during testing shall be the market power supply source where the product is marketed. Definitions of the power consumption modes and usage scenario are described as follows:

Idle State: The power state in which the operating system and other software have completed loading, a user profile has been created, activity is limited to those basic applications that the system starts by default, and the computer is not in Sleep Mode.

Sleep Mode: A low power mode that the computer enters automatically after a period of inactivity or by manual selection. A computer with Sleep capability can quickly "wake" in response to network connections or user interface devices with a latency of less than or equal to 5 seconds from initiation of wake event to system becoming fully usable including rendering of display. For systems where ACPI standards are applicable, Sleep Mode most commonly correlates to ACPI System Level S3 (suspend to RAM) state.

Off Mode: The lowest power mode which cannot be switched off (influenced) by the user and that may persist for an indefinite time when the appliance is connected to the main electricity supply and used in accordance with the manufacturer's instructions. For systems where ACPI standards are applicable, Off Mode correlates to ACPI System Level S5 state.

If there are other definitions or scenarios of energy usage for products, they should be described with reference to the adopted international, national and industry standards.

Based on the ENERGY STAR Computer Specifications, Typical Energy Consumption (TEC) during the use stage of computers can be calculated as follows:

ETEC =((8760/1000) * (Poff * Toff + Psleep * Tsleep + Pidle * Tidle))

As the product's time of usage will vary with different locations, the assumed time of usage is based on the ErP Directive-Lot 3 Personal Computer and Computer Monitor Final Report, summarized as follows:

Usage locations	Use mode	Normal use time (hrs)	Ratio (%)
Office	Off	3,285	37.50
	Sleep	3,196	36.48
	Idle	2,279	26.02
Home	Off	4,305	49.14
	Sleep	2,873	32.80
	Idle	1,582	18.06

Thus, total power consumption during desktop computer's use stage can be calculated as follows: (unit: MJ)

Office $\mathbf{E_{TEC}}$ **=((8760/1000) *(P_{off}* 0.4914+ P_{sleep}* 0.3648 + P_{idle}* 0.2602))/3.6 * 3 years**

$$\text{Home } \mathbf{E_{TEC} = ((8760/1000) *(P_{off} * 0.3750 + P_{sleep} * 0.3280 + P_{idle} * 0.1806))/3.6 * 3 \text{ years}}$$

while the product life is assumed for 3 years.

Information regarding maintenance during use stage and transportation of end-of-life product to waste disposal site are of voluntary inclusion nature.

(Note: the product life is assumed three years, as the desktop computer is generally designed for use with a warranty period of 3 years).

Recycling/end-of-life Stage

The LCA shall include information for the following unit processes:

- Consumers' transportation of end-of-life product to waste disposer or recycler.
- The reporting of recycling information (such as recycling and dis-assembly report and information on recycling channels) is mandatory in the EPD. Product's environmental impacts shall be calculated based on reported recycling ration.

5.1 Specification of different boundary settings

Boundary in time

The validity period for the LCA results presented in the LCA report shall be defined.

Boundary towards nature

If the manufacturing processes are located within Taiwan, the solid waste categories as defined in Taiwan's Waste Disposal Act shall be adopted. If the processes are located in other countries, equivalent legal requirements shall be considered.

The natural boundary of the system shall describe the boundary where the materials and energy resources flow from nature into the system, and where the water and air emissions and waste are released out of the system.

Only the waste which is required to be disposed of needs to be considered; landfilling process does not need to be included. If the waste will be treated through water treatment or incineration, these processes need to be included.

Boundaries in the life cycle

The boundaries in the product life cycle are described in Figure 1. The construction of the site and infrastructure, as well as the production of manufacturing equipment and activities of the workers, does not need to be included.

Boundaries towards other technical systems

Boundaries towards other technical systems describe the inputs of material and other components towards other systems, as well as outputs of materials towards other systems. For the inputs of recycled materials and energy towards the product manufacturing stage, the transportation between the recycling process and use of recycled materials shall be included in the data set. For the

production of recyclable products during the manufacturing stage, the transportation towards the recycling process shall be included.

(Note: Further explanations are provided in Section 7 on open-loop recycling)

Boundaries regarding geographical coverage

The manufacturing stage may cover manufacturing processes located on any sites around the world. For processes located in a specific region, the data used should be representative of the region. The data for the main components shall be the specific regional data for the region where the process takes place (see Section 9). For ease of comparison, no matter where the emissions are generated, the same environmental impact parameters should be used for life cycle impact assessment (see Section 10).

6. Cut-off rules

For any impact category, if the sum of various impacts from a specific process/activity is less than 1% of the impact equivalent in that category, such a process/activity may be neglected during the inventory analysis. Nonetheless, the accumulated impact of neglected process/activity may not exceed 5%. Components and materials omitted from the LCA shall be documented.

(Note: This judgment for this "1% Rule" is based on the environment relevance assessment of material input to the system, and does not consider special and exceptional environmental impacts.)

7. Allocation rules

The main allocation rules shall be valid for the entire product system. For other secondary processes, other allocation rules may be defined; however, the use of these rules should be justified. Product-specific information should be preferentially collected in order to avoid the need for allocation. While selecting allocation rules, the following principles are recommended.

- Multi-output: The allocations are based on the changes in the resource consumption and pollutant emissions (for example, adopted quantity allocation for some main component, or surface allocation for some components), following the changes in the studied system's output product or function or economical relationship.
- Multi-input: The allocation is based on actual relationship. For example, the manufacturing process's emissions may be affected by the change in waste flow input.
- Open loop recycling: For the input of recycled materials or energy during the manufacturing stage of the product system, the transportation between the recycling process and the recycling to material use shall be included in the dataset. For the product which shall be recycled during the manufacturing stage, the transportation towards the recycling process shall be included.

Notes:

- *Allocation may be avoided through avoidance of dividing processes, for example as described in Section 6.3 of ISO/TR 14049; or through expansion of system boundary (for example as described in Section 6.4), so that the amended system shares the same product exchanges as the original system.*

8. Units

The base units and derived units of the International System of Units (SI, Système International d'unités) shall be used preferentially.

Power & energy units:
- power unit: W
- energy unit: J

Specification units:
- length unit: m
- capacity unit: m^3
- area unit: m^2
- weight unit: kg

If necessary, prefixes may be used before the SI units.
10^9 = giga, symbol "G"
10^6 = mega, symbol "M"
10^3 = kilo, symbol "k"
10^{-2} = centi, symbol "c"
10^{-3} = milli, symbol "m"
10^{-6} = micro, symbol "μ"
10^{-9} = nano, symbol "n"

9. Calculation rules and data quality requirements

Date quality requirements for the raw material acquisition stage

- Generic data may be used for the acquisition, production, forming and refining of raw materials used for the components of the desktop computer products. Please refer to Appendix I for the common sources of generic data. The date of the generic data used can not be older than 1990.

Date quality requirements for the manufacturing stage

- Site specific data (for example, specific data for manufacturing plant or transportation) shall be used for the manufacturing of major components and assembly of the desktop computer products. If other types of information are used, description of the information and rationale for using the information shall be provided.
- Generic data may be used for the manufacturing of secondary components for the desktop computer products, and based the calculation on actual consumption. Please refer to Appendix I for the common sources of generic data. The date of the generic data used can not be older than 1990.
- When generic data are used, the equivalence between the chemical and/or physical process of referred systems shall be considered.
- Generic data may also be used when suppliers refuse to provide specific data, or when even if generic data are used in place of specific data, there is only minor impact to the results. The general rule is that if generic data are used in place of specific data, their combined contribution for all life cycle stages shall not be greater than 20% of total impacts for each impact category.

But there may be certain exception to specific products, and such exceptions shall be explained.

- The data shall be representative for the average of a specific year. If the average data for a specific time period of less than one year is used, the reason for using such data shall be provided.
- The electricity mix for the manufacturing stage should be site specific data. If site specific data cannot be obtained, the official electricity mix for the country where the site is located may be used as approximate value. The electricity mix should be documented.
- For the definition of hazardous waste, the definition as defined in Taiwan's Waste Disposal Act shall be used for sites located in Taiwan. For sites located outside Taiwan, legal requirements for the host country shall be observed.
- For the transportation of main components to the manufacturing plant, the actual transportation modes used and distance traveled shall be considered.

Date quality requirements for the distribution and marketing stage

- For the transportation of products to the distribution sites or retailer sites, the actual mode of transportation and distance traveled shall be considered.

Date quality requirements for the use stage

- The energy consumption of the product shall be determined based on testing methodology stipulated in applicable international or industrial standards of the countries/regions the product is marketed.
- For the electricity mix for the use stage, the official electricity mix for the country where the product is exported may be used as approximate value. Please refer to Appendix I for the common sources of generic data. The date of the generic data used can not be older than 1990.

Date quality requirements for the recycling/end-of-life stage

- For transportation of end-of-life desktop computers as post-consumer waste for delivery to processors or recyclers, the data from national, industry or consumer behavior surveys can be used. When such data cannot be obtained, evaluation based on assumed scenario can be made, and the assumptions for such an scenario shall be reported in the EPD.

- Generic data may be used during the recycling/end-of-life stage, if for specific reason the site specific data for the recycling/waste disposal system can not be obtained. Then generic data and recycling rate may be used to calculate environmental impact. Please refer to Appendix I for the common sources of generic data. The date of the generic data used can not be older than 1990.

10. Parameters to be declared in the EPD

The following parameters shall be declared in the EPD:

Energy use

- The energy consumption during the product life cycle stages shall be declared. If the product is intended for end-users, the power consumption during the use stage shall also be declared.
- The following units shall be used preferentially:

kW or W for power; J or MJ for energy.

Resource use

The information on resource input during the product life cycle stages shall be declared.

Impact equivalents expressed as potential environmental impacts

-Global warming	kg CO_2 equivalent
-Acidification	kg SO_2 equivalent
-Photochemical oxidant formation	kg C_2H_4 equivalent
-Eutrophication	kg PO_4^{3-} equivalent
-Ozone depletion	kg CFC-11 equivalent

Note: For characterization factors of each impact category, please refer to *EPD Supporting Annexes*, Version 1.0 (2008-02-29), The International EPD Cooperation, downloadable from www.environdec.com.

Additional information

Recyclable materials (optional)
Information on secondary materials (optional)
Waste (classification):

- Hazardous waste as defined in Taiwan's Waste Disposal Act. Follow host countries' laws for sites outside Taiwan.
- Other waste.
- Plastic parts marking: Where technologically possible, plastic parts of the desktop computer weighing ≧ 25 g shall be marked in accordance with the ISO 11469 and ISO 1043 Part 1/2/3/4, SPI or other international standard label to facilitate their identification and recovery at the end of life.
- Plastic packaging materials marking: The Plastic packaging materials shall be labeled on the parts with SPI or other international standards for ease of sorting.

11. Recycling information

The recycling information shall include information such as dis-assembly instructions, which parts/components are suitable for recycling (such as metal cases) or not suitable for recycling. The information which the EU WEEE Directive requires the end product manufacturer to provide may also be included in the product declaration information for desktop computer products.

If feasible, information for the parts which can not be recycled and therefore should be disposed of properly during the end-of-life stage may also be included.

12. Other environmental information (Optional)

The EPD may cover information including technology adopted, site of product manufacturing and assembly, as well as information on other working environment, health and risk-related aspects.

If this PCR is to be used for product carbon footprint declaration purpose, in the declaration,

information regarding commitment on GHG reduction should be included and shall ensure that the commitment is measurable, reportable and verifiable. The organization may also list environmental and energy management related information, such as awards, commendations and system certifications (e.g., ISO 14001, ISO 14064-1, IECQ HSPM) etc.

13. Information about the certification

The information on PCR review, EPD verification and verification organization shall be included.

EPD Certification is valid until 20__-__-__ According to the Requirements for the international EPD system. General Programme Instructions, Version 1 (2008) – www.environdec.com The PCR review for _____ (PCR 201_:) was administered by the Environment and Development Foundation and carried out by an LCA expert panel chaired by Dr. Ning Yu (ningyu@edf.org.tw). Independent verification of the declaration, according to ISO 14025:2006 □ Internal ■ External
Third party verifier: Environment and Development Foundation in Taiwan. Accredited by : Name: Title: Organization: Signature:_____ Name: Title: Organization: Signature:_____ Name: Title: Organization: Signature:_____
Environmental declarations from different programmes may not be comparable.

14. References

Energy Star Computer Specification -Version 5.2

The EPD shall make reference to the following documents:

- EPD General Program Instructions, Version 1.0 (2008-02-29), The International EPD Cooperation, downloadable from http://www.environdec.com/;
- Relevant PCR documents;
- The underlying LCA report.

When available, the following documents shall also be referenced:

- Other documents and recycling instructions which verify and complement the EPD.

Appendix I – Generic Data Sources to Refer to

For processes located within Taiwan, Taiwan generic data or the data published by the commercial, industrial and energy competent authorities of the Republic of China (ROC) government, may be used. However, for other regions (such as EU), if there are more relevant generic data available, these data should be used instead. When data from the following generic databases are used, the most current and updated data should be used:

Material	Database	Published
Industrial processes	Ecoinvent 2nd edition	2007
Packing materials, transport, Waste treatments	BUWAL 250, 2nd edition	2004
	Ecoinvent 2nd edition	2007
Steel, Primary copper, Copper products, Electricity, Fuels, Aluminum, Chemicals, Transports, Waste management	LCA Database for Taiwan：DoITPro	2008-2010
	PE-GaBi	2006
	ELCD version 2.0	2009
	Ecoinvent 2nd edition	2007
	The Boustead Model 5.0	2007
	EIME (Environmental Information and Management Explorer) EcoBilan	1998-2000
Plastics	PE Plastics Europe (Association of Plastics Manufacturers in Europe)	1993-1998
	PE-GaBi	2006
	ELCD	2009
	Ecoinvent 2nd edition	2007
	The Boustead Model 5.0	2007
	EIME (Environmental Information and Management Explorer) EcoBilan	1998-2000
Electronic components	LCA Database for Taiwan：DoITPro	2008-2010
	PE-GaBi	2006
	ELCD	2009
	Ecoinvent 2nd edition	2007
	The Boustead Model 5.0	2007
	EIME (Environmental Information and Management Explorer) EcoBilan	1998-2000
LCA Database in Taiwan	DoITPro	2010

Appendix II – Reporting Format for the EPD

This appendix provides guidance information for the titles of sections, types of data and required information to be reported in the mandatory reporting part of the EPD. As a generic reporting template, the following titles and sub-titles are recommended:

(Refer to the PCR manual for the section numbering, the information in Italics are the recommended data/information for inclusion)

Introductory part

Each EPD should have an introduction part on the top part of the EPD which includes the following information:

- *Company/organization name*
- *Product name*
- *EPD registration number*

Description of the company/organization and product/service

Company/Organization

- *Description of company/organization*
- *Description of overall working environment, existing quality system and environmental management system*

Product and services (see Section 2)

- *Product's main applications*
- *Description of product specification, manufacturing process, manufacturing sites (if there are several sites)*
- *For product's environmental performance aspects, characteristics which may improve the usefulness of product*
- *Other types of relevant information, for example, special manufacturing processes with special advantages to the environment*

List of materials and chemical substances

- *Content declaration (see Section 3)*

Presentation of the environmental performance

- *Outline of the LCA methodology, for example, period of LCA, declared units, system boundaries (graphical presentation), cut-off and allocation rules, and data sources.*

Manufacturing stage *(see Section 10)*

Use stage *(see Section 10)*

- *Geographical region for product delivery*
- *Transportation data*
- *End-of-life information*

Information about Company and Certification Organization

Recycling information *(see Section 11)*

Other environmental information *(see Section 12)*

Information regarding certification

- *Names of certification and verification organizations*
- *Validity of certification certificates*
- *Compliance with legal and relevant requirements*

References *(see Section 14)*

- *relevant PCR documents*
- *EPD General Program Instructions, Version 1.0 (2008-02-29)*
- *underlying LCA study*
- *other supporting documents for LCA information*
- *other relevant documents regarding company/organization's environmental activities*

Appendix III – Table for Goods Classification by HS Codes

CCC Code		CD	Regulations Description of goods	Regulations	
Tariff NO.				Import	Export
8470.10			Electronic calculators capable of operation without an external source of electric power and pocket-size data recording, repoducing and displaying machines with calculating functions		
8470.10.10			Pocket -size data recording, reproducing and displaying machines with calculating functions		
8470.10.10	00	1	Pocket-size data recording, reproducing and displaying machines with calculating functions		
8470.10.20			Electronic calculators capable of operation without an external source of electric power		
8470.10.20	00	9	Electronic calculators capable of operation without an external source of electric power		
			Other electronic calculating machines:		
8470.29			Other		
8470.29.00			Other electronic calculating machines		
8470.29.00	00	2	Other electronic calculating machines		
8471.41			Comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined		
8471.41.00			Other automatic data processing machines, comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined		

8471.41.00	00	5	Other automatic data processing machines, comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined	C02	S01
8471.49			Other, presented in the form of systems		
8471.49.00			Other automatic data processing machines, presented in the form of systems		
8471.49.00	00	7	Other automatic data processing machines, presented in the form of systems	C02	S01
8471.50			Processing units other than those of subheadings 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit; storage units, input units, output units		
8471.50.00			Processing units other than those of subheadings 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit; storage units, input units, output units		
8471.50.00	00	3	Processing units other than those of subheadings 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit; storage units, input units, output units	C02	S01

Appendix IV Abbreviations

Acronyms	Common Name
ACPI	Advanced Configuration and Power Interface
APLAC	Asia Laboratory Accreditation Cooperation
APU	Accelerate Processing Unit
B2B	Business to Business
B2C	Business to Consumer or Customer
CFP	Carbon Footprint of Product
CPU	Central Processing Unit
ELCD	European Reference Life Cycle Database
EPD	Environmental Product Declaration
ErP	Energy Related Product
GHG	Greenhouse Gas
HS Code	Harmonized System Code
ILAC	International Laboratory Accreditation Cooperation
ILAC MAR	International Laboratory Accreditation Cooperation Mutual Recognition Arrangement
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rule
RAM	Random Access Memory
RoHS	The Restriction of the use of certain Hazardous Substances in electrical and electronic equipment
SI	Système international d'unités (French)
SPI	Society of the Plastics Industry
TAF	Taiwan Accreditation Foundation
TEC	Typical Energy Consumption
WEEE	The Waste Electrical and Electronic Equipment Directive