ISSN 2349-5596

CERC
Since 1978

GREEN INSIGHTS

Newsletter on Eco-labelling and Eco-friendly Products

Volume 15 No. 3, October-December 2020

Product Lifespan and Its Impact on Environment

Sponsored by:

Ministry of Environment, Forests and Climate Change, Government of India

ENVIS Resource Partner on:

Environment Literacy - Eco-labelling and Eco-friendly Products

GREEN INSIGHTS
October-December 2020

Contents

FOREWORD

At the United Nations Conference on Sustainable Development (Rio+20), in June 2012, the world's Heads of States adopted the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (hereafter the 10YFP). The 10YFP is a global framework for action to enhance international cooperation and accelerate the shift towards Sustainable Consumption and Production (SCP) patterns in both developed and developing countries. The 10YFP aims at developing, replicating and scaling up SCP and resource efficiency initiatives, at national and regional levels, decoupling environmental degradation and resource use from economic growth, and thus increasing the net contribution of economic activities to resource efficiency and productivity, poverty eradication, social development and environmental sustainability.

Goal 12 of Sustainable Development Goals is “Responsible Consumption and Production”. The global economy is driven by the worldwide consumption and production patterns which is dependent on the natural environment and its resources. This dependency has resulted in drastic environmental degradation which has endangered the very systems wherein future of our progeny and survival depends. A transition to circular economy is the need of the hour to alleviate this situation. Sustainable consumption and production is about doing more and better with less. It is also about decoupling economic growth from environmental degradation, increasing resource efficiency and promoting sustainable lifestyles. Sustainable consumption and production can also contribute substantially to poverty alleviation and the transition towards low-carbon and green economies.

With the increasing population and its consumption level has an ever growing influence on the planet and its ability to support us. Product Lifetime extension makes a compelling case as it reduces resource use and waste, while preserving the economic value embedded in it. The extension of product lifetime results in reduction of waste and in resource saving. In this context, the present newsletter is dedicated to make the consumers aware about the Product Life Cycle Assessment and Environmental Product Declaration. How consumers can contribute to tackle the climate change at large by making a better buying behaviour.

Product Life Cycle and Life Cycle Assessment

Every product has its life. Industrial goods may have a longer life than consumer goods. When a product idea is commercialized, the product enters into the market and competes with the rivals, for making sales and earning profits. Every product has length of life. It is called product market life-cycle, because it is related to particular market. It is an important concept in marketing. It describes the stages a product goes through from when it was first thought of until it finally is removed from the market. The product life-cycle may be short for some products and long for some other products. The period may differ from product to product. Every product passes through certain stages, collectively known as product life-cycle stages. Not all products reach this final stage. Some continue to grow and others rise and fall.

Product Life Cycle

Product life cycle [PLC] referred as the period of time over which an item is developed, brought to market and eventually withdrawal from the market. The product life-cycle is an important tool for marketers, management and designers alike. It specifies five stages of a product's life and offers guidance for developing strategies to make the best use of those stages and promote the overall success of the product in the marketplace. The five stages of a product are

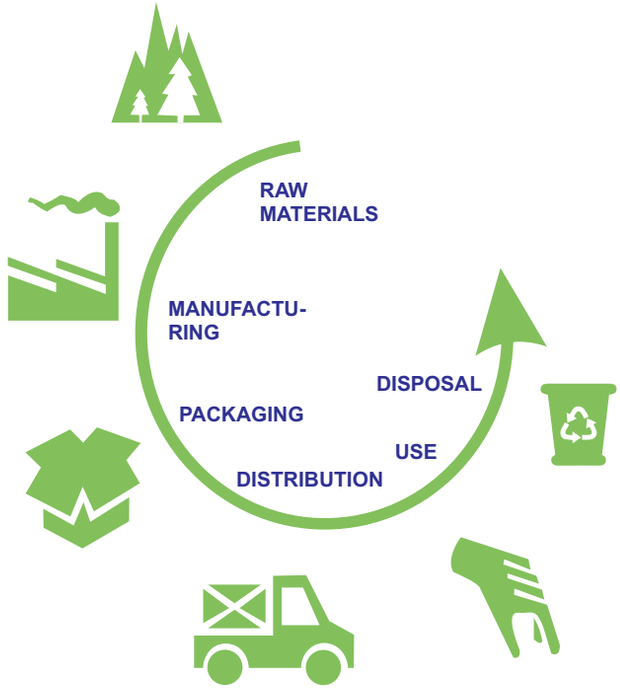
1. Introduction Stage: At this stage the product is launched into the market, hence awareness and acceptances are minimal. Advertising and sales promotions are extensively used in order to build awareness, encourage evaluation and initial adoption.

2. Growth Stage: During this stage mass market acceptance will take place through early adopters. Growth is rapid, profits will emerge and all initial costs covered during this period.

3. Maturity Stage: This stage represents the most competitive stage in the life of a product. Special promotional efforts are needed to attract new users to the product. During this stage emphasis is given in opening new distribution channels and retail outlets.

4. Saturation Stage: In this stage, there aremany competitors in the market, profits per unit have further declined and there is no growth in sales. It is time to consider new markets, changes in prices, promotion and introduction of new product versions or new products.

5. Decline Stage: The product reaches a stage of declining sales as it faces competition from better products or better substitutes developed by the competitors. At this stage the product has to be redesigned or the cost of production reduces so that they can continue to make some contribution to the company.:



Product Life Cycle Examples

The television industry has gone through several such phases over the decades: Black and white TV had a relatively short cycle which was extended by colour TV, wireless remotes, plasma, LCD, HD, larger screens, Smart functions, 3D, Ultra HD resolution, High Dynamic Range (HDR) technology and so on. TV manufacturers are adding new technology to their products.

To illustrate the different stages of the product life cycle more clearly here is an example of watching recorded television:

1. Introduction – 3D TVs
2. Growth – Blueray discs/DVR
3. Maturity – DVD
4. Decline – Video cassette

Product Life Cycle is an important principle, manufacturers need to understand in order to make a product survive in the market as long as possible. It is very essential for the marketers to understand the product life cycle so as to provide/design effective marketing strategies for each phase of PLC. However, the key to successful manufacturing is not just understanding life cycle, but also proactively managing products throughout their lifetime, applying the appropriate resources and sales and marketing strategies, depending on what stage products are at in the cycle. Depending on how well marketing strategy can cope with the decline stage; the product may or may not have to be terminated. An effective management of PLC probably extends its life and gain growth in the competitive market. Successful manufacturing companies generally have multiple products each at different points in the product life cycle at any given time.

Life Cycle Assessment

The concept of conducting a detailed examination of the life cycle of a product or a process is to increase the environmental awareness on the part of the general public, industry and governments. A life cycle refers to the life span of a product, from resource extraction, to manufacture, to use, to final disposal. The cycle aspect reflects that materials extracted from the environment are followed until they are ultimately returned to the environment.

A number of different terms have been coined to describe the processes. One of the first terms used was Life Cycle Analysis, but more recently two terms have come to largely replace that one: Life Cycle Inventory (LCI) and Life Cycle Assessment (LCA). These better reflect the different stages of the process. Other terms such as Cradle to Grave Analysis, Eco-balancing and Material Flow Analysis are also used.

Life cycle assessment (LCA) is a systematic analysis of the potential environmental impacts of products or services during their entire life cycle. It is a primary tool used to support decision-making for sustainable development.

Life cycle inventory (LCI) analysis is defined by ISO as the 'phase of life cycle assessment involving the compilation and quantification of inputs and outputs for a product throughout its life cycle'.

Figure 1 Components of life cycle analysis
Source: Environmental and Pollution Science (Third Edition), 2019

The application of LCA helps to promote the sustainable design and redesign of products and processes, leading to reduced overall environmental impacts and the reduced use and release of nonrenewable or toxic materials. LCA studies identify key materials and processes within the products' life cycles that are likely to pose the greatest impacts, including resource demand and human health impacts. These analysis delineate the full benefits and costs of a product or process, which allows decision-makers to select the most effective solution. By performing an LCA, decision-makers can develop a systematic evaluation of the environmental consequences associated with a given product, analyze the environmental trade-offs, quantify environmental releases to air, water, and land, assess the human and ecological effects of material consumption and identify the health and ecological impacts.

Life cycle analysis (LCA) has been defined by the US Environmental Protection Agency (EPA) as a way to "evaluate the environmental effects of a product from the initial gathering of raw materials from the earth until the point at which all residuals are returned to the earth" or "cradle-to-grave."

LCA is a methodological framework that quantifies all environmental impact caused during the life cycle of a product or a process. LCA methodology was developed during the 1990s and is still under further development. These developments have led to standardization by the International Organization for Standardization (ISO) in the ISO-14040 series. The LCA process is a systematic, phased approach and consists of four components:

1. Goal definition and scoping,
2. Inventory analysis,
3. Impact assessment, and
4. Interpretation

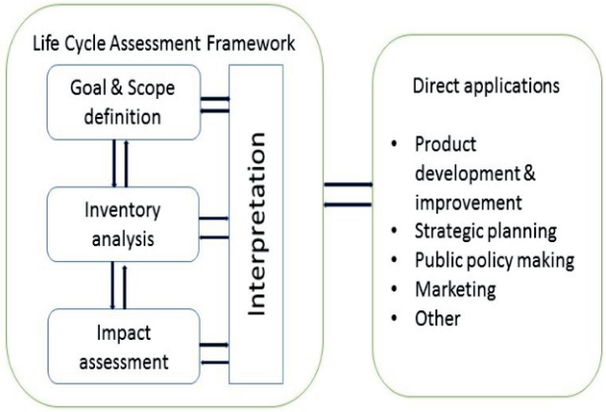


Figure 2 Phases of a life cycle assessment
Source: Encyclopedia of Energy, 2004

1. **Goal definition and scoping:** The product systems to be evaluated are defined, and the geographical and temporal scope is defined as well. This step also includes the definition of the functional unit, which will act as the reference for the subsequent steps.
2. **Inventory analysis:** The environmental releases e.g., emissions, resource extractions for the product systems and the functional unit are determined.
3. **Impact assessment:** The potential caused by the environmental releases analyzed in the environmental impacts previous step are determined.
4. **Interpretation:** The results of the inventory analysis and impact assessment are discussed, conclusions are drawn, and recommendations are made.

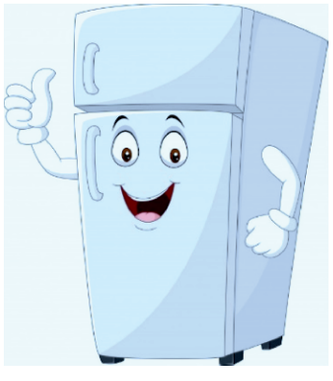
A study on life cycle assessment for the use-intensive product

Looking at energy-use-intensive products from a sustainability perspective, Washing machines are considered as 'workhorse' products, as they are typically purchased for a lifetime of heavy and prolonged use and are usually only replaced when they break down completely or cannot be repairedat reasonable cost (Stamminger et al., 2005).

From an environmental perspective keeping an old washing machine in operation is not the best strategy.

Washing machines are use-intensive products that consume energy, water and detergents. The use phase contributes the most to the overall environmental impact of washing machines: 65% - 80%, depending on the environmental indicators used (Rüdenauer et al., 2005). Due to the improvements in efficiency during the use phase, a modest shift of environmental impacts towards the production phase can be seen.

Rüdenauer et al. (2005) determined the optimal life span of an average German washing machine using Life Cycle Assessment. Their functional unit was described as "the amount of laundry that is washed and dried in 22 years, in a household of 3 people." Based on the data assembled by Rüdenauer et al. (2005), Ardente and Mathieux (2014) analyze whether it is environmentally beneficial to extend the average lifetime of a washing machine (11.4 years) through repair by 1 to 4 years. They conclude that lifetime extension "can produce some environmental life-cycle benefits (such as the abiotic depletion potential), even if it would delay replacement with more energy-efficient products. However, the achieved benefits are variable, mostly depending on the selected impact category, the extension of the lifetime, the impacts of repair and the efficiency of the replacement product."



The Waste & Resources Action Program (WRAP 2010) focuses on step-change improvements in the energy efficiency of washing machines. Their study shows that when replacing a washing machine, environmental savings can only be achieved when replacing A or C- rated machines with A+ or A++ machines (EU, 2010). Substituting to a washing machine class A++ would for instance lead to a reduction in energy consumption of about 22% (Ardente and Mathieux, 2014). It follows that replacement is only 'worthwhile' if there is a step-change in efficiency improvements.

Stamminger et al. (2005, p. 124) found that the performance of washing machines has increased over time, making it difficult to compare old washing machines with newer models: "to achieve the same performance as a modern machine does by washing at 40 C, a 15-year-old machine must use a temperature of 60°C. A 15-year-old machine uses approximately twice as much energy and water to achieve the same performance as a new one." The authors recommend timely replacement of old machines, but do not give a specific optimal replacement moment.

As the optimal replacement moment is defined as the point in time where the environmental impacts that arise from using a product equal the embedded impacts of a (more energy efficient) replacement product, it follows that the optimal replacement moment will vary considerably with varying uses and use contexts.

In China, for instance, manual laundry washing is common in households that own a washing machine. Chinese households therefore consume less water with washing machines operations because of the low number of wash cycles. Japanese households commonly use cold water impeller-type washing machines. In contrast, European households perceive hot water as more hygienic, resulting in the use of drum type washing machines with hot water, which consume significantly larger amounts of electricity compared to the cold-water impeller type (Kim et al., 2015). Washing operations vary by household income, dwelling size, work patterns, electricity price, sources of electricity generation, perception of cleanliness (Kim et al, 2015); user behavior suchas the load, temperature of washing, the

number of cycles (Rüdenaueret al., 2005); and washing technology such as horizontal or vertical axis washing machines (Pakula and Stamminger, 2009). Even the types of garments, how garments are placed in the machine and how they mix during the cleaning process result in a large degree of variability in the washing performance (WRAP 2010) and thereby influence the environmental impact of the use phase indirectly. For example, starting from 2005 an increase in the number of quick drying clothes has been recorded in Japan. These types of clothes can reduce CO_2 emissions by roughly 10% (Yamaguchi et al., 2011).

The way washing machine innovations are incorporated into everyday life can negate potential energy savings. For instance, the average rated capacity of washing machines in Europe has grown from 5.0 kg in 2003 to 7.5 kg in 2014; a rise of 50%, while in the same period the average European household size has reduced from 2.4 to 2.3 people (Schmitz et al., 2016). A consumer survey among 5000 participants in eleven EU countries showed that the larger capacity is appreciated, but not always utilized. In fact, it seems that “consumers do not put more laundry into their bigger washing machines, but wash (almost) the same amount of laundry independent of the washing machine's rated capacity.” (Schmitz et al., 2016, p. 232). This can result in higher energy and water consumption as washing machines work most efficiently at maximum load conditions.

The reviewed studies imply that a washing machine should be at least 10 years old before replacement becomes worthwhile, and that the new model should have significantly higher energy efficiency than the old model. Depending upon the assumptions used by the researchers, the system boundaries and the rate of efficiency improvement of new washing machines is must. Whereas, if the repair would cost less than 50% of the price of a new appliance and your machine still has several expected years of life left, a quick fix could be a cost-effective solution over replacing the entire washer. An active warranty can also make any repair worthwhile. If the defective part would cost more than 50% of the cost of a new washer, it's probably time to replace the appliance.

Consumer use has a significant role to play in the environmental impact of washing machines, which varies greatly across regions and cultural contexts. However, it has not been investigated what impact different consumer use patterns have on the lifetime of washing machines, and how this may be addressed by targeted consumer information in order to find optimal washing machine replacement moments.

Sources:

1. Iyyanki V. Muralikrishna, Valli Manickam, Chapter 05 - Life Cycle Assessment, Editor(s): Iyyanki V. Muralikrishna, Valli Manickam, *Environmental Management,* Butterworth-Heinemann, 2017

2. Evert Nieuwlaar, Life Cycle Assessment and Energy Systems,
Editor(s): Cutler J. Cleveland, *Encyclopedia of Energy* , Elsevier, 2004

3. M.L. Brusseau, Ch-32 Sustainable Development and Other Solutions to Pollution and Global Change, Editor(s): Mark L. Brusseau, Ian L. Pepper, Charles P. Gerba, *Environmental and Pollution Science* (Third Edition), Academic Press, 2019

4. Bakker, C., & Schuit, C. (2017). *The Long View: Exploring Product Lifetime Extension*. United Nations Environment Programme, 2017

5. www.economicsdiscussion.net

Environmental Product Declaration (EPD)

Credibility and transparency are crucial for brand reputation especially when the consumers have become environmentally conscious. Faced with increasing amounts of waste, many governments have reviewed available policy options and concluded that placing the responsibility for the post-consumer phase of certain goods on producers could be an option. Extended Producer Responsibility (EPR) is a policy approach under which producers are given a significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products. Assigning such responsibility could in principle provide incentives to prevent wastes at the source, promote product design for the environment and support the achievement of public recycling and materials management goals.

The growing interest in environmental issues is creating a new market for products and services that are environment-friendly. This new economic parameter is the adoption of a series of instruments that measure, control and check the environmental performance. Many global companies have created different solutions on how to become more environmental friendly and how to be more transparent and communicative for the all interest parties. One tool for communicating a products' environmental impact is Environmental Product Declaration (EPD). The information in EPDs includes environmental details along the life cycle of the product, which involves every part from the production point until the point when the product has served its purpose. To meet this demand of information, standards and labeling have been created.

The Environmental Product Declaration is produced on the basis of Life Cycle Assessment (LCA) calculations. It provides a quantitative environmental information concerning the cycle of the products and services in order to allow a comparison between products that perform the same function. It is normally provided by the product manufacturer and must be verified by an independent expert. By creating environmental product declarations for a product, the manufacturers comply with the accepted industry standards and should communicate objectively about the environmental performance. It is an important voluntary instrument for qualifying companies that intend to take an active role in managing the environment factor. As a voluntary declaration of the life-cycle environmental impact, having an EPD for a product does not imply that the declared product is environmentally superior to alternatives.

An EPD normally has a validity of 5 years. There is no evaluation of the environmental information since no predetermined environmental performance levels are set. Instead, it builds on well-structured and quantitative data certified by an independent third party. An EPD can be created for a company-specific product or for the average product of members of a branch organization.

An EPD is an independently verified and registered document about the life-cycle environmental impact of products. It is a document, similar to the nutritional information on the back of food packets, enabling:

- Manufacturers to declare the environmental features of a product
- Purchasers / Users to consider this information in their procurement decisions The overall goal is to communicate verifiable and accurate information about environmental aspects of products in order to provide a basis for a fair comparison of any product in a given category.

ISO Standards

To meet the demand for environmental declarations within different types of business and for different products, there are three ISO standards, within the ISO 14020 series, that can be used for creating different types of EPDs. When a company decides to create EPDs for their products or services they have to choose between the three different types of EPDs.

1. Type I, Environmental Labeling - the most basic one. It is a certificate labeling of the product, for example; the flower made as an environmental label within the European Union. Type I declaration is made according to the ***ISO-standard ISO14024*.**

2. Type II, Self-declared EPD's - do not require any third part certification, they can be made by the company itself. Type II declaration is made according to the ***ISO-standard ISO14021*.**

3. Type III, Environmental Product Declarations - are made according to standardized labeling schemes that are administrated by public or private sectors. It does not only require Product Category Rules (PCR) but also a Life Cycle Assessment (LCA) and the certification must be verified by a third party. Type III declaration is made according to the ***ISO-standard ISO14025*.**

EPDs are a communication tool intended to communicate all of the attributes and the performance of a given product to the marketplace in a specific manner that meets ***ISO Standard 14025***.

Product Category Rules

It is a reference document prepared in compliance with the ISO 14025 and approved by the EPD Programme Operator. It is defined as a “set of specific rules, requirements and guidelines for developing Type III Environmental Product Declarations for one or more products categories” (ISO 14025).

In simple words the PCR is a reference document specifying provisions for conducting the LCA (collecting, measuring and reporting data) and preparing an EPD to ensure comparability between products that perform the same functions.

Life Cycle Assessment (LCA)

It carried out on the product by the manufacturer in compliance with ISO 14040/4 requirements. The EPD will be prepared by the manufacturer on the basis of the LCA results. LCA is defined as the “compilation and evaluation of the inputs, outputs and potential environmental impacts of a product system throughout its life cycle” (ISO 14040).

LCA is a multi-steps and iterative process for analysing the environmental burden of products at all stages in their life cycle – from the extraction of resources, through the production of materials, product parts and the product itself, and the use of the product to the management after it is discarded, either by reuse, recycling or final disposal (therefore, 'from the cradle to the grave').

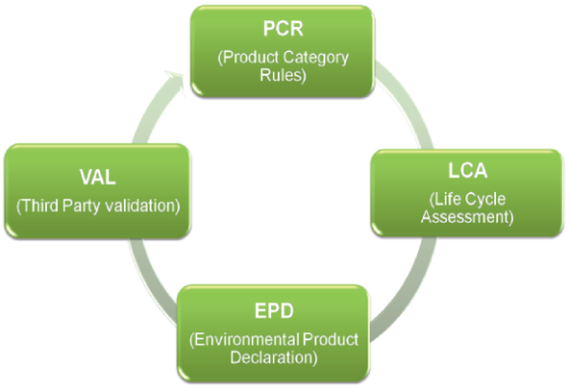
EPD Verification

It is conducted by a Third Independent Party to

validate the results of the LCA and the information contained in the EPD.

EPD Report

The quality of the resulting EPD is based on the findings of this assessment. It must disclose all information required in ISO 14025 and defined in the PCR, including a description of the study scope, the product, results, and additional environmental information about the product.



Environmental Product Declaration (EPD) is a short version of an LCA report. It is simpler to read and therefore easier to use in communication than an LCA report. Where an LCA report often contains sensitive company details which whole world should not to know. An EPD contains not much more than the LCA results and a proper description of the product, and can be shared without worry. However, a proper LCA study including a full LCA report must be performed before an EPD can be created!

The EPD must be produced according to a specific set of Product Category Rules (PCR) which provides calculation rules and guidelines to ensure that all Environmental Product Declarations under the same category report the same type of information. The range of existing PCRs is wide, from clothing to food and chemicals. It also provides a single source of scientifically robust and transparent information about a product's environmental impact through its life cycle, verified by a qualified third party in accordance with publicly available criteria (Product Category Rules).

Types of Environmental Product Declaration

Manufacturer EPD

- Declaration of a specific product from a manufacturer's factory
- Declaration of a specific product averaged from multiple factories of the same manufacturer
- Declaration of an average product from a manufacturer's factory
- Declaration of an average product averaged from multiple factories of the same manufacturer

Sector EPD

- Declaration of a specific product averaged from multiple factories of several manufacturers
- Declaration of an average product averaged from multiple factories of several manufacturers

Reference EPD

Declaration concerning the worst impacts for a sample product of specific sector, of a specific geographic scope

Template EPD

Declaration of a typical product within a group of similar products with common functions and identical manufacturing processes

How to get an EPD

- The Product Category Rule (PCR) most appropriate for the studied product is selected.
- The Life Cycle Assessment (LCA) study is conducted according to the PCR and the general LCA norm ISO14044.
- Based on the full LCA report, the EPD document is created according to the format of an EPD program operator (e.g. Stichting MRPI)
- An independent recognized LCA expert reviews the LCA report and EPD according to the PCR and verification protocol of the program operator
- The verified EPD is submitted to the program operator, who will publish the EPD within its own national as well as in the international Ecoplatform system.

The general goal of EPDs is to use verifiable and accurate information to encourage the demand for, and supply of products that have a lower negative impact on the environment. It may be used for many different applications, including green public procurement (GPP) and building assessment schemes. The concept of type III environmental declarations was developed to primarily be used in business-to-business communication, but their use in business-to-consumer communication is not precluded by the standards. With an environmental product declaration, manufacturer communicate all relevant environmental information along a product's value or supply chain. They can also use these environmental reports to reflect on their continuous improvement, to select the best eco-design options and to be in compliance with laws around high-volume consumer products in certain countries.

But the most important reason is that EPD's are becoming compulsory by law. The French Grenelle law demands that all high volume consumer products sold in France must have an EPD. In India under Green building initiatives, Indian Green Building Council (IGBC) is working on Green Product Rating Program under National EPD schemes for construction material. ISO 21930 is dedicated for Sustainability in building construction — Environmental declaration of building products.

Mandatory environmental product declarations are becoming commonplace in other EU countries as well, which is a good reason to start developing EPDs for products today.

Sources:

1. www.oecd.org
2. pre-sustainability.com
3. www.scsglobalservices.com
4. www.environdec.com
5. ecochain.com
6. www.epdindia.in
7. biobagworld.com
8. Sofie Molse, Caroline Rüter, *Is there a need for Environmental Product Declarations*; Master Thesis 2010, Department of Industrial Management & Logistics Production Management Lund Institute of Technology

Consumer and Product Life Span

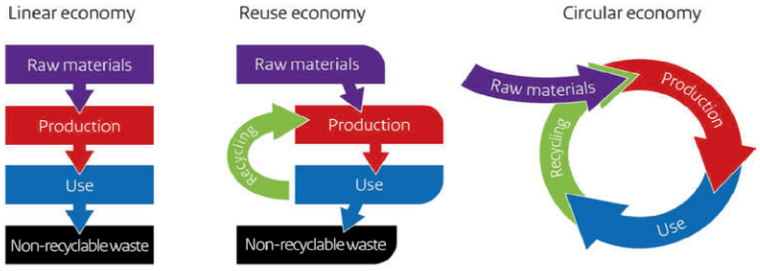
Mankind owes its comfort and luxury to the rapid industrialization and urbanization. There has been an enormous production of commodities to balance the demand and supply chain of the ever growing population. All these sumptuousness and extravagance has been obtained at the cost of environment. The nature has been subjugated for over a thousand years now. The sheer exploitation of the mother earth for its resources has left it with a permanent scar. The consequence can be felt as it has triggered climate change, poor air quality, change in geo chemical patterns, health effects, mass extinction of floral and faunal species etc.

To halt the progress of these irreparable changes and to revive the nature has become a necessity for the very survival of mankind. Many mitigation measures have been taken up by the governments, NGOs, academic institutions, other public and private organizations and even at individual level. Some of these actions include Ban on single use plastic, Promotion of Organic food, Ban on carcinogenic pesticides and insecticides, Promoting environment friendly products etc.

A Product Life Span is also an important attribute that would help in curbing environmental pollution to some extent. “Product lifetime” refers to the useful life of a product; the time during which the product remains integer and usable for its primary function for which it was conceived and produced whereas "Product life extension" is a phrase used as one part of the multifaceted solutions to create a circular economy. Product life extension (PLE) describes how long a product or item can be used for, with the ultimate goal of maximizing any given product's “utilization” rate and duration.

In a circular economy, the intention is to produce no waste or pollution. PLE extends the life cycle of a product by repairing, upgrading and reselling. PLE contributes substantially to the “starting loop strategy” and the “slowing loop strategy” pertaining to the circular economy, by prolonging the useful life of products through design for long-life, called “nature strategies” (i.e., starting loop strategy), as well as by life extending measures such as repair, remanufacturing, refurbishment, reconditioning and reuse, called "nurture strategies" (i.e., slowing loop strategy).

From a linear to a circular economy



Source: https://www.government.nl/topics/circular-economy/from-a-linear-to-a-circular-economy

The world's population currently consumes 60% more resources than the Earth is capable of replenishing each year. And only 16% of the world's population (1.1 billion of the planet's 7.2 billion inhabitants) is responsible for 78% of global consumption. There is a need to switch from a linear to a circular economy to ensure healthy and safe living and working conditions, and cause less harm to the environment. Linear economy means that raw materials are used to make a product, and after its use any waste (e.g. packaging) is thrown away. One of the main problems with the linear economy's production and consumption model, as opposed to a sustainable circular economy system, is planned obsolescence. Circular economy is a substantial improvement common to both businesses and consumers.

Planned obsolescence is a serious environmental problem. Every year, up to 50 million tons of electronic waste are generated, of which – around 85% - is usually discarded randomly. It ends up as e- waste in developing countries, creating a risk for the environment and the health of people, animals and plants.

Planned obsolescence is generally described as a deliberate action by manufacturers and designers to shorten a product's lifetime in order to increase its replacement rate, at the expense of consumers. The highly competitive global business environment has resulted into faster product replacement and increasing consumption of products. This would amplify the scale of economies to larger extent. Rapid replacement cycles have, more or less, become the norm for consumers everywhere in the world. Replacement buying behavior is complex and consumers play an important role in the economic system. Whether or not product lifetimes meet consumers' expectations, it is still the question whether consumers may take an active role in addressing product lifetimes. The dominant current consumer reaction seems to be one of disengagement or disinterest.

Consumers generally throw away products before these products fail or are broken. Jayen Cox and his team (2013, p. 25) found in their study that consumers seldom connect product lifetimes to environmental problems. “Few participants expressed any guilt around the volume of resource consumption this model implies and almost none had thought about the environmental impacts. Even when prompted, many participants struggled to see the connection between consumption and environmental problems.” Breaking out of such powerful “lock-in” effects will require effective policy measures to support consumers and consumer organizations in addressing the current 'throw-away' culture.

Consumers usually prefer to buy new one than repairing it. Hence, it is necessary to educate the consumer, to stimulate better product design which should be easier to clean and repair and the producers should ensure the repairing process easier and increase the availability of spare parts. The products should be used for at least 10 years before replacing it with a more energy efficient models. For example of vacuum cleaner, the products are replaced before they are 5 years old, which is less than the expected lifespan.

Product designers and manufacturers must take greater responsibility for developing durable products, and certainly avoid the practice of 'planned obsolescence'. They can also assist consumer choice by providing better information on the lifetime of their products. However, simply pointing towards industry and designers as the instigators of planned obsolescence is shortsighted. In developed countries product lifetime extension is not a widespread practice. In developing countries, informal repair markets are usually more common.

Although enforces legislation is often absent, product lifetime extension tends to occur more spontaneously. Bespoke policy intervention is needed both in Developing countries and Developed countries.

European Union in 2017 issued a Resolution on a longer lifetime for products: benefits for consumers and companies. It is approved by the European Parliament. Because of this act, users of electronic devices able to repair their terminals with any service provider simply, without the need to resort to the manufacturer's official technical service. The directive also includes fiscal incentives for products based on quality, durability and ease of repair.

Spain based the FENISS Foundation (Sustainable Energy and Innovation Without obsolescence Foundation has created a label known as ISSOP (sustainable Innovation Without obsolescence).
It certifies that companies produce environmentally-respectful goods and services, without planned obsolescence, preferably by fair trade, contributing to emissions reduction and correct waste management. Companies such as Casio, SostreCívic and Scanfisk Seafood carry this mark. Spanish NGO Amigos de la Tierra (part of “Friends of the Earth” International) launched an initiative, Alargascencia, against obsolescence, advocating the greatest possible prolongation of the useful life of products through the buying, sale, rent and exchange of second-hand goods.

Consumer and user organizations should form a common front against the abusive practice. A sustainable development is possible only when consumers play their role through better buying behavior. One should make use of the product to its utmost utility by repairing and reusing its parts other than choosing the latest product. Another way is by sharing the old usable items with the have not's. Tackling planned obsolescence is not only a battle against abusive use of resources and an unsustainable economic model, but also against climate change.

Sources:

1.Gina Lee, Extending product life to build a circular economy, 2019

2. https://en.wikipedia.org/wiki/Product_lifetime

3. https://www.activesustainability.com

4. https://www.oneplanetnetwork.org/introduction-lifetime-extension

5. https://www.activesustainability.com/sustainable-devlopment/battle-against-planned-obsolescence/

Sustainable Consumption activities By CERC

Consumer Education and Research Centre celebrates Green Action Week every year by the first week of October. The week features consumer advocacy groups around the world and the ways in which new ideas and technologies can drive sustainable consumption. From the past three years, we celebrated Green Action Week on the theme of "Sharing Community".

In the year 2018, To Promote Community sharing, especially in low-income & lower-middle income communities, CERC-ENVIS created a , "Aap-le no Otlo" (in Gujarati) – meaning Platform for Give & Take. Often, with the need to keep up with the Joneses, often out of user fatigue, sometimes due to new gadgetry, Personal use items like apparel, accessories, books, stationery items, electronics, kitchenware, even furniture, are discarded as waste, even if in usable condition. People neither have the time, nor the wherewithal to find a matching taker, though there are plenty others in the community who are happy to have these items. The fear of social stigma often prevents the needy from accepting hand-me-downs. They are comfortable accepting in anonymity. For this, CERC – ENVIS created an accessible physical space wherein people could share or give personal use, Household use and other items and the receivers can take the useful items in anonymity.

In 2019, Green Action Week was celebrated to cover the aspect of inclusivity by instilling a sharing attitude in school children. Children from financially backward background are deprived of basic and standard grade stationary, educational and hobby materials whereas Kids from a well-off community have the privilege of discarding upmarket stuff that they don't like, which amounts to environment pollution. To conceptualize the idea we had identified 10 schools of which 5 were financially well off schools which were linked to their 5 financially weak counterparts near their vicinity. To execute the joyful and sustainable gesture of sharing, we asked kids belonging to well to do families to share their stationary kits, educational materials, toys, raincoats, woolen wears etc. that they no more use and are in good condition to their underprivileged counterparts. Extending the concept of sharing to urban waste, school children were also made aware of the advantages of composting using kitchen waste and garden waste. Pamphlets on how to make Compost were printed in both English and Gujarati Language and were distributed amongst the students.

In the year 2020, we have taken into account the fact that the neediest amongst the have-nots are migrant labourers most of whom do not have access to means of survival including government relief programs. Hence our project this year has created a sharing platform between the resident community and migrant labour community. At first, an appeal was made to donate the pre-loved items via social media. A webinar on "Sharing Community: A goal towards sustainable Consumption" was organized in order to create awareness. The collected pre-loved items such as clothes, utensils, stationary items, toys etc along with the kit that had surplus food items or rations were distributed amongst the daily wagers. The kit also included one double layered reusable cloth mask and a pamphlet on COVID – 19 Do's and Don'ts. The locality targeted were Saraspur and D-colony where the kits and items collected were distributed.

CERC-ENVIS Resource Partner
Consumer Education and Research Centre, Ahmedabad, India

The Environmental Information System acronymed as ENVIS was implemented by the Ministry of Environment & Forests by end of 6th Five Year Plan as a Plan Scheme for environmental information collection, collation, storage, retrieval and dissemination to policy planners, decision makers, scientists and environmentalists, researchers, academicians and other stakeholders.

The Ministry of Environment and Forests has identified Consumer Education and Research Centre (CERC), Ahmedabad, as one of the Resource Partners to collect and disseminate information on "Environment Literacy - Eco-labelling and Eco-friendly Products". The main objective of this ENVIS Resource Partner is to disseminate information on Eco products, International, and National Eco labeling programmes.

Periodical Printed & Published By

Project Coordinator, CERC-ENVIS Resource Partner on Behalf of Consumer Education & Research Centre,

"Suraksha Sankool" Thaltej, Sarkhej-Gandhinagar Highway, Ahmedabad 380 054, Gujarat, India.
Phone : 079-27489945/46,27450528, Fax : 079-27489947
Email : cerc-env@nic.in, cerc@cercindia.org
Website: http://cercenvis.nic.in, www.cercindia.org
https://www.facebook.com/EcoProductsEcoLabeling

Write to us: We value your views and suggestions. Please send your feedback on this issue. We would also like to invite your contributions on the Eco Product and Eco Labelling.

Printing

Print Express, Ahmedabad.