



**RECYCLE**

# RECYCLE

- 1.STEPS OF RECYCLING
- 2.LIFE CYCLE OF PRODUCTS
- 3.FACTS OF RECYCLING
- 4.THE OPPORTUNITIES CREATED BY RECYCLING
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# 1. STEPS OF RECYCLING

**The recycling process involves 3 main steps, which form a circle or loop.**

**They are:**

- 1) collecting the recyclables**
- 2) processing the recyclables and turning them into recycled-content products**
- 3) purchasing recycled products.**

**All three steps are crucial for the loop to be closed. Should any of the steps be missing, the benefits of recycling would be greatly reduced.**

**The 3 steps are applicable to all recyclables. Nonetheless, step 2 of the process may vary in method for different types of recyclables.**

**Several factors are critical to the success of this process. To be certain that one's efforts truly make a difference, everyone must be aware of the factors for recycling success!**

# 1. STEPS OF RECYCLING - COLLECTION

**The 3 main steps in the process of recycling are described in greater detail as follows:**

## **Step 1 - Collection**

**In the first step of the recycling process, the recyclables materials are collected.**

**The methods of collection may vary from community to community. However, there are four main methods of collections, namely curbside, drop-off centers, buy-back centers, and deposit/refund programs.**

**After their collection, the recyclables are then sent to a material-recovery facility to be sorted and prepared into marketable commodities to be sold to processing companies.**

# 1. STEPS OF RECYCLING - PROCESSING

## Step 2 - Processing

The second step of the recycling process is when recyclables are processed. Once cleaned and sorted, the recyclables are processed to retrieve the raw materials, and the raw materials are then used in manufacturing recycled-content products.

All recyclables need to be broken down, melted or liquefied into its basic elements, which can be either made directly into new materials or mixed with virgin resources and made into new materials.

However, the method of processing for different materials varies according to the materials themselves. For example, recyclables like glass, aluminum cans and steel need to be melted into a liquid form and then remolded into new products. Some others such as paper and certain plastic products may have to be crushed, or shredded to extract the basic elements/raw materials (eg. fibre in paper) to be reused in making new products.

# 1. STEPS OF RECYCLING – PURCHASING RECYCLED PRODUCTS

## Step 3 - Purchasing Recycled Products

The third step involves purchasing recycled products which completes the recycling loop.

More and more of today's products are being manufactured with total or partial recycled content, better known as GREEN PRODUCTS.

Whether people are involved, both common individual consumer, or as a part of a government or business organization, everyone has an important role in making recycling a success by “buying recycled”. As consumers demand more environmentally friend products, manufacturers will continue to meet that demand by producing high-quality recycled products.

# 1. STEPS OF RECYCLING



## 2. LIFE CYCLE OF PRODUCTS

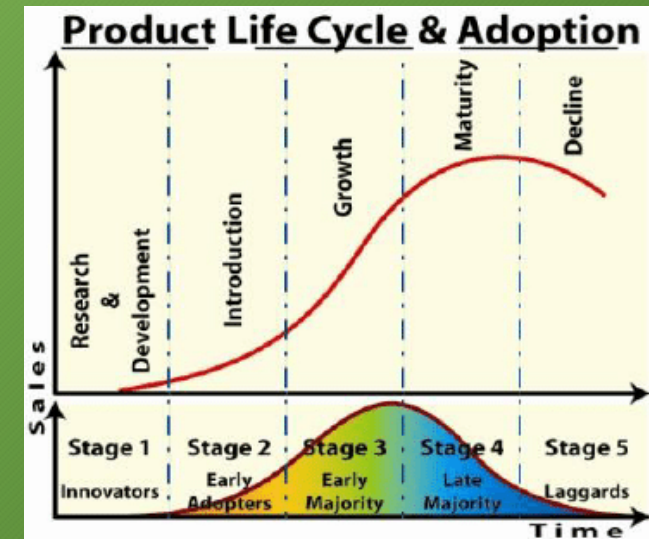
### What Is a Product Life Cycle?

Products, like beings (including humans), have life cycles. The product life cycle is broken into four stages:

- INTRODUCTION
- GROWTH
- MATURITY
- DECLINE

This concept is used by management and by marketing professionals as a factor in deciding when it is appropriate to increase advertising, reduce prices, expand to new markets, or redesign packaging

The process of strategizing ways to continuously support and maintain a product is called product life cycle management.





## 2. LIFE CYCLE OF PRODUCTS

### How Product Life Cycle Work

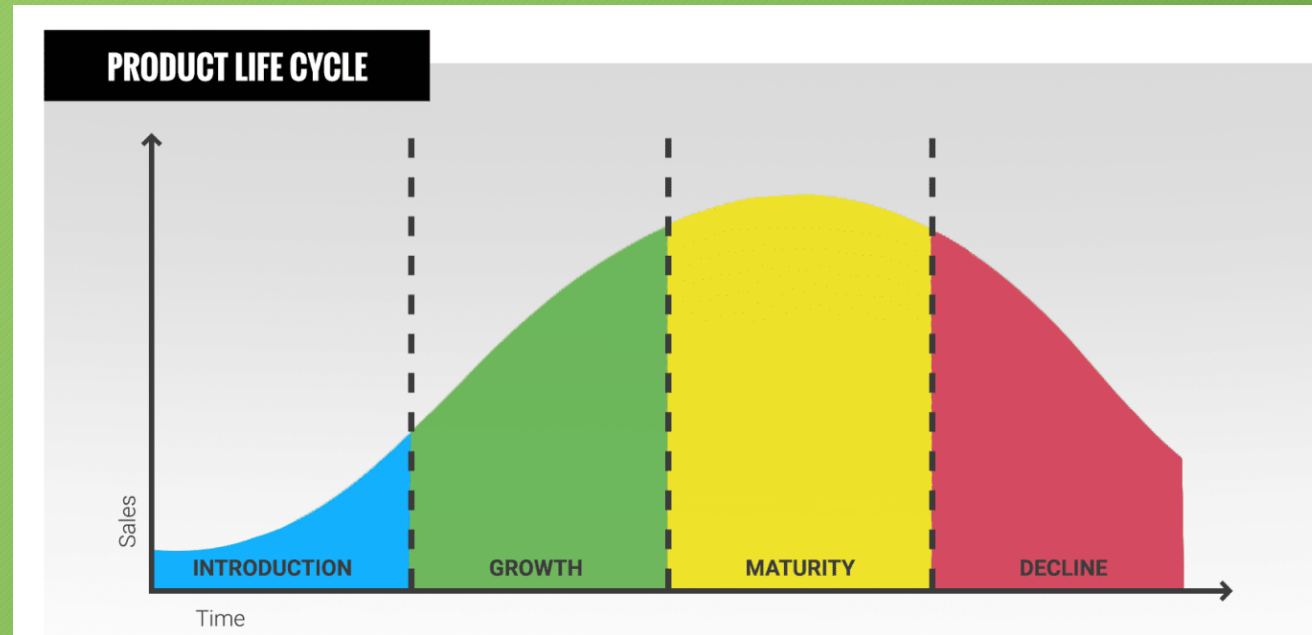
A product begins with an idea, and within the confines of modern business, it isn't likely to go further until it undergoes research and development and is found to be feasible and potentially profitable. At that point, the product is produced, marketed, and rolled out.

The product introduction phase generally includes a substantial investment in advertising and a marketing campaign focused on making consumers aware of the product and its benefits. Assuming the product is successful, it enters its growth phase. Demand grows, production is increased, and its availability expands.

As a product matures, it enters its most profitable stage while the costs of producing and marketing decline. However, it inevitably begins to take on increased competition as other companies emulate its success, sometimes with enhancements or lower prices. The product may lose market share and begin its decline.

The stage of a product's life cycle impacts the way in which it is marketed to consumers. A new product needs to be explained, while a mature product needs to be differentiated from its competitors.

## 2. LIFE CYCLE OF PRODUCTS



## 2. LIFE CYCLE OF PRODUCTS

### Aluminum

- **Aluminum can be recycled using 5% of the energy necessary to make the original product.**
- **Recycling a single aluminum can save enough energy to run a television or computer for three hours.**
- **20 cans can be made out of recycled material with the same amount of energy it takes to make one new one.**

### Glass

- **Recycling 1 glass bottle saves enough energy to light a 100-watt light bulb for 4 hours.**
- **Recycling saves 25-30% of the energy used to make glass from virgin materials.**

### Plastics

- **Every hour, we throw away 2.5 million plastic bottles (22 billion plastic bottles per year).**
- **Five recycled plastic bottles make enough fiberfill to stuff a ski jacket and twenty-two of them enough to make a blanket**

## 2. LIFE CYCLE OF PRODUCTS

### Steel

- Every tonne of steel recycled saves about 1,135 kg of iron ore, about 635 kg of coal and 55 kg of limestone.
- The steel industry recycles nearly 19 billion steel cans into new products each year – about 600 cans recycled every second!

### Paper

- Recycling one ton of paper saves 17 trees.
- One tree can filter up to 60 pounds of pollutants from the air each year.
- More than 1/3 of all paper fiber used to make paper comes from recycled .

# 3. FACTS OF RECYCLING

## 1. Using recycled paper saves water, not just trees

When recycled paper is used instead of “virgin” one, people are:

- contributing to saving about 26,500 liters of water per tonne of paper produced. That water can be better used combating the effects of drought.
- offsetting the 900,000,000 trees per year chopped down to make paper.

## 2. Enough plastic bottles are tossed each year to circle the planet four times

In an average year, about 9,000,000 of plastic bottles are produced only in Europe. If all of them had been recycled, the resulting material could have been used to create about 60 million size XL T-shirts.

## 3. FACTS OF RECYCLING

**3. Americans throw away enough trash in an average year to circle the Earth 24 times.**

**That trash is chock full of recyclables that were not recycled. Each day, Americans toss about 100 million tin and steel cans. Each year, Americans use more than 80,000,000,000 aluminum cans and most end up in landfills.**

**4. It takes centuries for a disposable diaper to break down in a landfill.**

**On average, one baby will go through 8,000 diapers. Cloth diapers are not as convenient, but they are reusable.**



## 3. FACTS OF RECYCLING

### 5. About 25 billion styrofoam cups are trashed each year

It takes Styrofoam more than 500 years to decompose in a landfill. A coffee mug can be washed and reused for years generating no waste.

### 6. Recycling aluminum cans saves 95% of the energy used to make new cans

When just one aluminum can is recycled, enough energy is saved to power a 100-watt light bulb for 20 hours or to listen to a full album on your iPod. Thanks to state-of-the-art automated sorting and separating equipment, recycling facilities can process more than about 1,600 kg of aluminum cans per hour and send the aluminum to be reused in other products.

# 3. FACTS OF RECYCLING

## Aluminum Beverage Can Facts

Can Manufacturers Institute

**Did You Know?**

- 25 BILLION...** AMOUNT AMERICANS HAVE EARNED RECYCLING CANS SINCE 1976
- 105,800** CANS RECYCLED IN AMERICA EVERY MINUTE
- 13 AIRCRAFT CARRIERS** COULD BE PRODUCED FROM THE AMOUNT OF ALUMINUM RECYCLED IN 2011
- 4 SIX-PACKS** CAN SUPPORT A **2-TON** VEHICLE
- ALUMINUM BEVERAGE CANS ARE **100% RECYCLABLE** OVER & OVER AGAIN, FOREVER
- 75%** NEARLY **75%** OF ALL ALUMINUM EVER PRODUCED IS STILL IN USE TODAY
- 3** NUMBER OF HOURS YOUR TV CAN RUN FROM THE ENERGY SAVED BY RECYCLING 1 CAN
- 60** NUMBER OF DAYS FOR FULL CAN-TO-CAN RECYCLING
- 1,454** EMPIRE STATE BUILDINGS ARE EQUAL TO THE STACKED HEIGHT OF ALL ALUMINUM CANS RECYCLED IN 2010
- 1 YEAR OF RECYCLING = 6 YEARS OF POWER**

FOR MORE INFORMATION VISIT [CANCENTRAL.COM](http://www.cancentral.com)

## Steel Food Can Facts

CANS: INFINITELY RECYCLABLE™

**Did You Know?**

- 34** FOOD THAT IS CANNED IS FOOD THAT ISN'T WASTED HELPING TO OFFSET THE 38 MILLION TONS OF FOOD WASTED IN THE UNITED STATES
- STEEL CANS ARE **100% RECYCLABLE** OVER & OVER AGAIN, FOREVER
- RECYCLING 1 TON OF STEEL CANS CONSERVES 2,500 LBS OF IRON ORE, 1,400 LBS OF COAL & 120 LBS OF LIME STONE
- NEW STEEL** PRODUCED WITH RECYCLED CANS **REDUCES** GREENHOUSE GAS EMISSIONS BY 75%
- CANNED FOOD IS PICKED AT THE PEAK OF RIPENESS & IMMEDIATELY CANNED LOCKING IN ITS FLAVOR & NUTRITION
- RECYCLING 1 STEEL CAN** CONSERVES ENOUGH ENERGY TO WATCH YOUR FAVORITE SHOW
- 4** NUMBER OF HOURS TO POWER A 60 WATT BULB FROM RECYCLING 1 STEEL CAN
- LOOKING TRIM CANS TODAY WEIGH **33% LESS** THAN 25 YEARS AGO
- 71%** THE RECYCLING RATE OF STEEL CANS
- ANNUAL COST TO AMERICANS FROM FOODBORNE ILLNESS: **\$7.77 BILLION**
- CANS MAKE FOOD SAFER WITH 100%** CONTAMINATION PROTECTION

FOR MORE INFORMATION VISIT [WWW.CANCENTRAL.COM/FOODCANS](http://www.cancentral.com/foodcans)



## 4. THE OPPORTUNITIVE CREATED BY RECYCLING

The recycling industry has grown quickly in recent decades, and this boom has translated into social, environmental, and economic benefits for society. One of these is the creation of jobs in the recycling industry, as well as recycling self-employment opportunities. There are also several training options available for those interested in pursuing a career in the recycling industry. Solid waste management is a highly mechanized process that is achieved with a modest amount of labor. Recycling, on the other hand, can be much more labor-intensive. It involves the collection, sorting, and processing activities, ISRI, as well as other supporting roles such as facilities operations, sales, and logistics support. Recycling is an integrated process that begins with recyclable material collection from locations such as households, drop-off points, construction and demolition centers and businesses. After collection, these recyclable materials go through a sorting process to separate various materials as well as different quality goods. For example, in [textile recycling](#), a percentage of used clothing can be utilized without further processing. The reusable clothing can be resold or distributed after washing.

# 4. THE OPPORTUNITIVE CREATED BY RECYCLING

For plastic, paper, metal, and glass recycling collected items go through a rigorous process to be usable as a raw material for the production of new goods. From the collection of materials to selling them, recycling businesses need varying degrees of skilled and semi-skilled employees to perform recycling industry jobs. Many recycling companies and associations play a significant role in building social awareness by providing recycling training services.

## Recycling Industry Job Statistics

- According to the REI, the US recycling industry employed 1.25 million people whereas the US solid waste management industry used only 0.25 million people. The REI study says that there are more than 56,000 reuse and recycling establishments in the U.S. REI also states that on average the recycling industry pays higher average wages than the solid waste management industry.
- According to ISRI, the U.S. scrap industry generated over 150,000 direct jobs and 323,000 indirect jobs in 2015
- According to the Institute for Local Self-Reliance (ILSR), the systematic removal of every 10,000 tons of solid waste creates only six jobs while the same amount of waste if recycled can create recycling jobs for as many as 36 people.

## 4. THE OPPORTUNITIVE CREATED BY RECYCLING

- **Another report stated that wider government focus on the recycling industry could create 10,000 new jobs in the UK by 2020.**
- **A study by “Friends of the Earth” said that over 51,000 recycling jobs could be created in the UK, if 70% of collected waste was recycled. If industrial and commercial waste were recycled at the same rate, another 18,800 additional jobs would be created. The study suggested that the government must be ambitious in setting yearly recycling rates. Sufficient actions to stop the production and selling of products that can’t be reused and recycled can take recycling rate to 75% by 2025.**
- **On an EU level, if a goal of 70% recycling of the main recyclable materials was met, estimates suggest that up to 322,000 direct recycling jobs could be created in the 27 EU countries. EU countries would recycle an extra 115 million tons of textiles in the process, including woods, ferrous and non-ferrous metals, plastic, paper, bio-waste, and glasses. Recycling this amount of wastes and material could create another 160,900 indirect and 80,400 induced jobs. Therefore, the total potential is more than 563,000 net new jobs.**
- **Given the capacity of recycling to generate jobs, it is important to take the necessary steps to create an environment that stimulates recycling and recycled material markets.**

# 5. CHALLENGE OF RECYCLING

Despite their significant value, most end-of-life plastic products are currently incinerated. By understanding the properties of different types of plastic, we can recycle much more than we do today and create a circular economy for this valuable resource. Below, it is an explanation of the challenges facing plastic recycling and how we can help manage them.

## 1. INCREASING KNOWLEDGE

The term plastic is, in fact, a collective name for several hundred different kinds of material. Due to lack of knowledge, different types of plastic are often combined in manufacturing processes, which makes recycling them much more difficult. This often leads to plastics being incinerated, which is a major waste of valuable resources. We have the tools and knowledge to create circular recycling for plastics. From product design to waste sorting and collection, we can keep more plastic in circulation. We can help you with training and by sharing our knowledge. By collaborating on an analysis of business, goals can be set and clear action plans can be created.

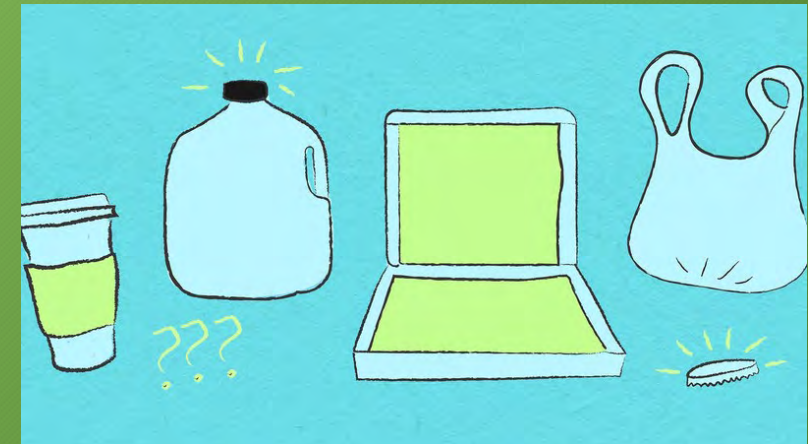
# 5. CHALLENGE OF RECYCLING

## 2. FINDING VALUE

As virgin raw materials are sometimes cheaper, we must find the added value that plastic recycling creates. Highlighting recycling work and objectives for customers and other stakeholders can positively affect both sustainability communication and sales.

## 3. DESIGN FOR RECYCLING

A great number of products are manufactured in ways that make the plastic content difficult to separate and, therefore, recycle. For example, different plastic types may be combined or other materials, such as glue and metal screws, bonded or fixed to the plastic. By considering these issues at the design stage, it becomes easier to disassemble products into waste fractions that do not contain residues of other material. This requires specific expertise and knowledge of materials. Stena Recycling can offer both training and guidance so that the plastic content in end-of-life products can be returned into circulation and used to manufacture new products.



# 5. CHALLENGE OF RECYCLING

## 4. CORRECT SORTING

Plastic is a complex material and each type has unique properties that affect its color, shape, structure and melting point. Therefore, it is important to sort plastic into different categories so that it can be kept as pure as possible. Stena Recycling can help, not only with collection but also with advice about what to consider when sorting waste.

## 5. INCREASING AVAILABILITY

A stable supply of recycled plastic raw materials is vital to increasing its use among manufacturers. We have developed two completely new processes at the Stena Nordic Recycling Center that enable us to recycle more plastic and increase the availability of recycled material on the market. One process recycles soft plastic (LDPE) into plastic pellets that can be used to make plastic bags and garbage sacks. The second process recycles the plastic from electronic products so that more of it can be returned into circulation. We also have a large international network that allows us to find the right kind of recycled plastic to suit needs.

ErasmusPlus Project *Let's Help Our Precious Planet*  
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