GEFF Green Economy Financing Facility

European Bank for Reconstruction and Development

Benefits and Opportunities of Circular Economy

Introduction

The Republic of Armenia is facing a significant waste management issue. In 2019 alone, 590,000 tonnes of waste were dumped in the country, which is equivalent to the volume of 431 Olympic-size swimming pools. To address these issues, the government is implementing reforms to reduce waste production and landfill accumulation. These reforms aim at aligning Armenian practices with international best practices.

Businesses and the general public both benefit from recycling, as it generates revenue, creates new business/market opportunities, improves public health, protects the environment, creates employment opportunities, and ensures the efficient management of resources. Despite several initiatives, Armenia must make efforts to implement recycling standards, as only a few communities currently practice waste separation.

The 2022 ban on plastic bags thinner than 50 microns aims to promote more sustainable waste management practices. Paper, cardboard, plastic bottles, and glass containers are among the items that can be recycled in Armenia; however, several others remain non-recyclable. It is important to boost circular economy activities on a business and individual level and thus enhance recycling rates, because if we continue generating waste at this alarming rate, 1 km^2 of land in the Republic of Armenia (29,800 km^2) will be buried in 1m of garbage each year.

What is a circular economy and what opportunities does it present?

A circular economy (CE) aims to keep materials and resources in use for as long as possible. This can be achieved by introducing products that have been designed with longevity in mind. In other words, in a circular economy, products can be repaired and/or refurbished and if this is no longer possible, these items can be recycled at the end of their useful life. This approach offers opportunities for businesses, including the reduction of waste and the cost of materials, improved resource efficiency, and enhanced customer relationships through sustainable practices. By embracing a circular economy, companies can tap into the potential of resources which are often discarded and can develop innovative solutions that benefit both the environment and the bottom line.

Key reasons why businesses should be interested in implementing a circular economy

Here are some key reasons why businesses should implement a circular economy:

- Increased resource efficiency: H&M, a Swedish fashion company, uses recycled materials in their clothing production to reduce waste and decrease their dependence on virgin resources.
- Financial benefits: Unilever, a British-Dutch consumer goods company, has saved over EUR 1 billion in costs through sustainable packaging initiatives and in this manner, has reduced waste in their operations.
- New business opportunities: The Renewal Workshop, an American company, offers a circular solution for the textile industry by repairing and reselling used clothing, creating a new market for second-hand goods.
- Competitive advantage: In 1994, Interface, an American carpet manufacturer, has implemented a Mission Zero plan to achieve zero negative environmental impact by 2020. Interface's efforts to reduce the impact of its operations have led its carpet manufacturing sites to see a 46% improvement in energy efficiency; an 89% reduction in water intake intensity; and a 92% reduction in waste sent to landfills.
- Improved brand reputation: Patagonia, an American outdoor clothing company, is known for their sustainable practices and circular initiatives, enhancing its brand reputation and attracting environmentally conscious customers.
- Reduced regulatory risks: Philips, a Dutch electronics company, designed a circular business model for their lighting products, reducing the risk of regulatory compliance issues related to waste and disposal.
- Positive environmental impact: Veolia, a French waste management company, implements circular economy practices in its operations, contributing to a more sustainable and resilient economy by reducing waste and preserving resources. In 2021, Veolia treated 49.4 million metric tons of waste.

Which business activities have high CE potential?

Businesses in various industries can adopt circular economy principles, such as resource efficiency and closed-loop systems, in order to reduce waste and create new revenue streams. Examples include waste management, construction, electronics, textiles, and paper production. For instance, the company InterfaceFlore has introduced closed-loop manufacturing and achieved significant results.

Benefits include:

- **Reduction in waste sent to landfills by 92%**
- **Reduction in greenhouse gas emissions by 84%**
- **Increase in sales by 66%**

Additionally, InterfaceFlore has achieved cost savings of US$ 433 million since 1996 and has improved its brand reputation as an environmentally conscious company, thus increasing its market competitiveness.

How can businesses make use of waste?

Businesses can reduce waste by implementing recycling and reuse strategies such as circular supply chains, waste-to-energy technologies, and sustainable food production. For example, the Dutch company Waste2Wear's business model focuses on collecting post-consumer plastic bottles to create recycled polyester yarn for textiles, achieving a reduction of 75% in energy consumption and 90% in water consumption. They can also reduce waste by using recyclable or reusable packaging as well as by implementing take-back programmes. For example, Nestlé reduces plastic packaging waste significantly through the use of sustainable packaging. These strategies help conserve resources and create new business opportunities while contributing to a sustainable economy.

Circular economy technologies that can be financed by GEFF

Relevant circular economy technologies for Armenia include renewable energy, biogas digesters, composting and anaerobic digestion, and water-saving technologies. These technologies are already in use in various industries and can offer a number of benefits. Let's have a look at the following circular economy technologies:

Waste separators

- Estimated cost of up to US$ 10,000
- Benefits include improved waste processing efficiency and reduced landfill waste through the use of specialised separators such as drum screens, magnetic separators, ballistic separators, circular vibrating screens, air separators, flip-flow screens, screw presses, centrifuge separators, and sink float tanks, which separate materials based on their properties and composition.
- Separators can be applied in various types of waste processing, including e-waste recycling, plastic and paper

sorting, glass and metal recovery, organic waste composting, and even scrap tire processing, as they are widely used to improve material recovery and reduce landfill waste while promoting sustainable resource use in different industries.

- Examples of their application include American Waste Management Inc. where waste separators enable 90% material recovery.

Industrial shredders

- Estimated cost US$ 2,000-6,000
- Benefits include reducing the volume of waste disposal in landfills by shredding dense and light materials, preparing them for the following recycling stages, and transforming them into raw forms that can be remanufactured, thus promoting a more sustainable and efficient use of resources. Industrial shredders have become crucial equipment in recent years, effectively processing waste materials that would otherwise be discarded.
- Shredders can be applied in a variety of industries related to waste recycling, such as paper and cardboard production, plastic recycling (e.g., PET bottles, PVC pipes), tire recycling (e.g., car tires, truck tires), electronic waste recycling (e.g., computers, smartphones), and metal scrap recycling, among others. For instance, paper mills use shredders to shred paper waste into small particles before reusing it as pulp to produce new paper products. Similarly, plastic recycling facilities use shredders to shred plastic waste into flakes, which are then melted and remoulded into new plastic products. Overall, industrial shredders have become essential to the recycling industry, enabling effective waste processing, and promoting a circular economy.
- Examples of their application include Eldan Recycling, a Danish company which uses industrial shredders and crushers to reduce waste from waste tires.

Recycling lines (PET bottle, plastic, and tire recycling lines)

- Estimated cost US$ 2,000-5,000
- Benefits include increased material recovery and the ability for businesses to

capitalise on the value of recovered materials, reducing waste disposal costs and creating new revenue streams. By implementing effective material recovery programmes, companies can reduce their environmental impact, improve their sustainability profile, and enhance their reputation among customers and stakeholders. Additionally, material recovery can help businesses to comply with regulations and standards related to waste management and promote a more circular economy by keeping resources in use for as long as possible.

- They can be applied in industries such as packaging, automotive, and electronics, among others, where recycling lines, including PET bottle recycling lines, plastic recycling lines, and tire recycling lines, enable efficient and effective waste processing and material recovery, reducing waste disposal costs and promoting more sustainable use of resources.
- Amut Group, an Italian company, has developed plastic recycling lines that reuse up to 95% of initial waste material.

Evaporators

- Estimated approximately US$ 1,000-3,000
- Benefits include reducing wastewater volume, minimising disposal costs, and recovering valuable resources such as salts, minerals, and metals in various industries such as pulp and paper, mining, and petrochemicals. Evaporators can also recover clean water from wastewater streams, promoting water conservation and sustainability in industrial processes.
- Evaporators can be applied in various industrial applications where wastewater treatment is necessary, including the treatment of mining wastewater, the recovery of valuable materials from pulp and paper effluents, and the concentration of brine in petrochemical plants. Recovering valuable resources through evaporators can reduce the environmental impact of industrial processes while promoting more sustainable use of resources. Furthermore, recovering clean water can minimise the demand for freshwater, conserving natural resources and

promoting environmental stewardship.

- An example of recycling using waste evaporators is that of Suez, a French company whose industrial wastewater treatment plant recycles up to 95% of the water it uses.

These technologies increase resource efficiency and reduce environmental impact while creating new business opportunities.

How can GEFF help in the financing of CE measures?

The Green Economy Financing Facility or GEFF is a facility offered by the EBRD that helps businesses become more competitive and sustainable by enabling them to invest in green technologies and projects. GEFF offers financing that can help contribute to a better future. Offered through our partner financial institutions (PFI), GEFF funds can be used to purchase the best-in-class high-performing technologies mentioned above and to invest in circular economy projects.

How to make the GEFF work for you

- Choose high-performing technologies that best suit the needs of your business by either using the Green Technology Selector or by approaching vendors directly
- Summarise the technical and financial requirements of your proposed investment
- Approach a partner financial institution to apply for financing
- If necessary, apply for a free consultation and project assessment from an experienced team of GEFF experts
- Secure financing through a loan or leasing agreement
- Have the technology installed
- Benefit from long-term energy or resource savings as well as financial gain

For more resources on how businesses in Armenia can implement CE measures, please refer to the following:

- What is a circular economy? | Ellen MacArthur Foundation
- Circular business model mixer
- Circular Economy Action Plan | European Commission
- Circular economy: definition, importance and benefits | European Parliament

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