



EY Study on the Circular Economy in Greece

May 2016



ΣΥΜΒΟΥΛΙΟ ΓΙΑ ΤΗ
ΒΙΩΣΙΜΗ ΑΝΑΠΤΥΞΗ



EY
Building a better
working world

The EY logo features the letters 'EY' in a bold, white, sans-serif font, with a yellow triangle pointing upwards to the right of the 'Y'. Below the logo is the tagline 'Building a better working world'.

Agenda

Vassilis Kaminaris

Introduction

Objective of the
Study

Diana de Graaf

Section 1

What is the Circular
Economy and how is
it implemented?

Eirinikos Platis

Section 2:

What is the Current
state of the Circular
Economy in Greece?

Legislative and
regulatory
framework

Kiara Konti

Section 2:

What is the Current
state of the Circular
Economy in Greece?

The business
perspective

Introduction

Vassilis Kaminaris | Partner

The objective of this study is to promote the potential for transformational change that the Circular Economy can bring to the status quo of the Greek economy, both upstream and downstream



New Circular Economy European Package - European Commission

- ▶ boost European competitiveness
- ▶ foster sustainable economic growth
- ▶ generate new jobs for Greece and the EU



- ▶ Funding
 - ▶ €5.5 billion from structural funds
 - ▶ €650 million from Horizon 2020



Why to promote the Circular Economy in Greece?

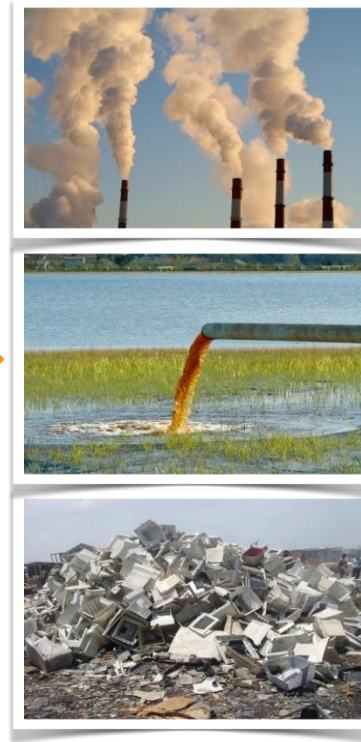
▶ Opportunity for Greece

- ▶ use the opportunity to help the long awaited investment cycle recommence for business in Greece, as and when the needed fiscal and structural reforms take place
- ▶ provide information and benchmarking to Greek businesses to explore transformational initiatives, as opposed to simply replicating past experience, by using the incentives and directions inherent in these programs
- ▶ transform the issue of waste management, recycling of wastes, storing and reusing of wastes, from a field of confrontation to an area where cooperation and win-win solutions can be established.

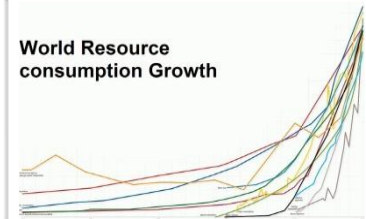
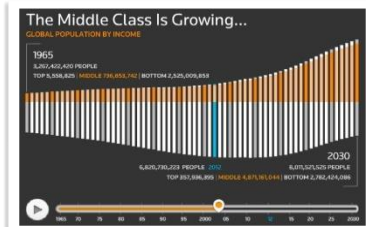
Section 1: What is the Circular Economy and how is it implemented?

Diana de Graaf | Senior Manager

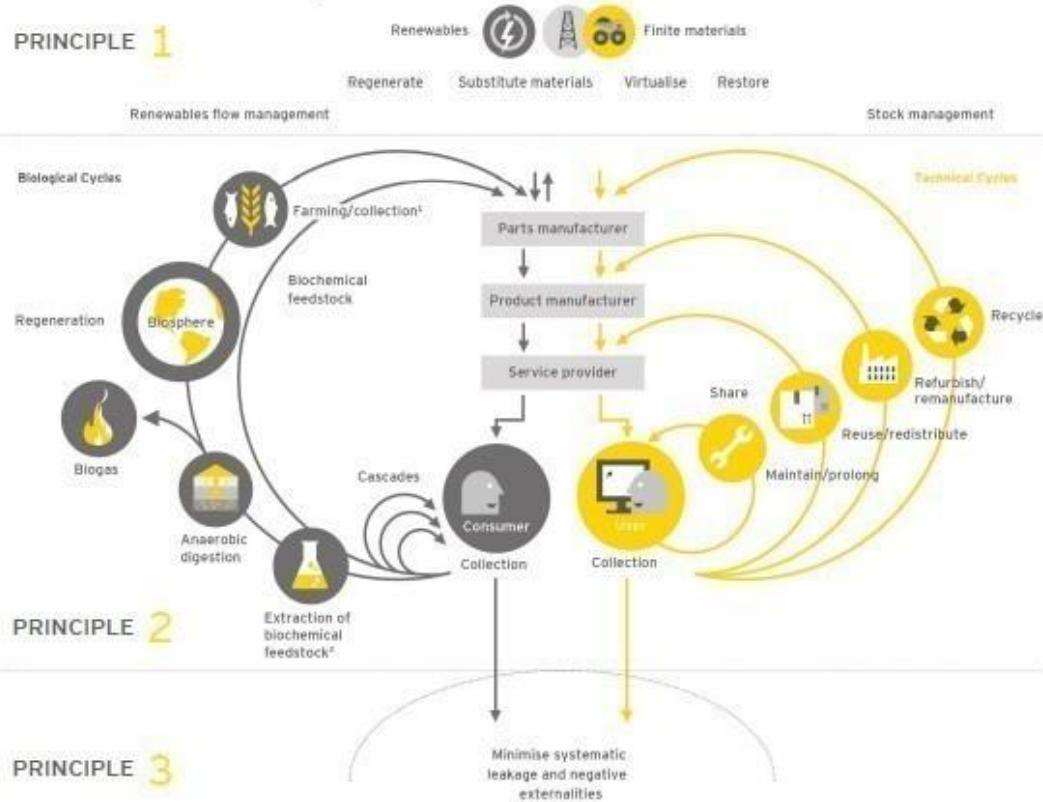
Our current economy is linear: resource, product, waste



This is not longer viable: socially, economically, ecologically

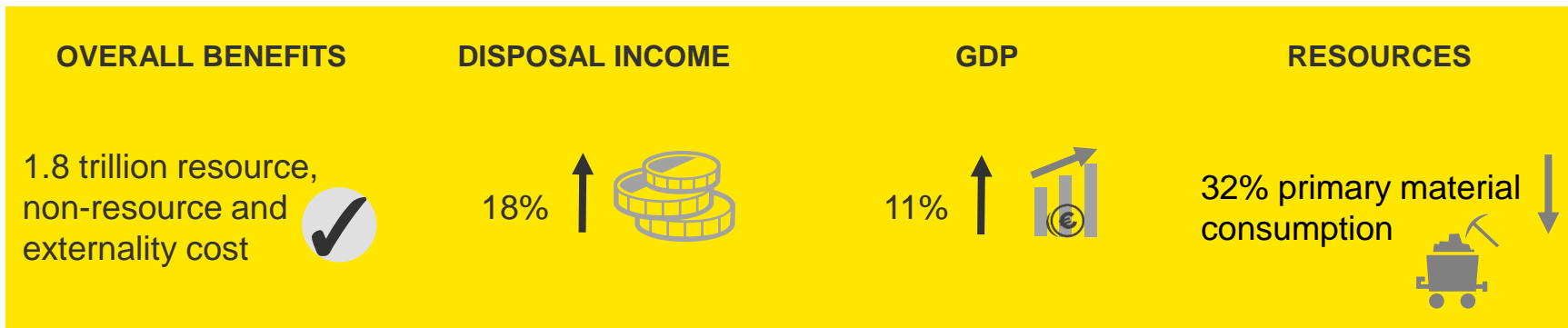


New model: Circular Economy (theory)



Why a Circular Economy?

- ▶ The Circular Economy helps to contain risks
- ▶ The Circular economy offers opportunities
- ▶ Presents a wide variety of challenges for businesses



Circular business models

Circular supplies

Move to renewable, bio-based and biodegradable resources



Resource recovery

Recover every possible remaining value from waste and by-products



Product life extension

Maintain a product in a working condition for a longer period



Sharing platforms

Share products with multiple users



Product as a service

Provide the use of a product instead of the product itself



Circular Economy leading practices per sector



Aluminium

1

Cement

2

Construction

3

Electricity

4

Food &
Beverage

5

Information and
Communication
Technology
(ICT)

6

Refining

7

Steel

8

Circular Economy leading practices per sector; Aluminium

Aluminium

Country

The Netherlands



Foundation

Alueco

Project

Take-back guarantee

- ▶ Circular Economy model applied: Resource recovery
- ▶ The aluminum companies have committed to taking back the supplied aluminum products after demolition



Circular Economy leading practices per sector; Cement

Cement

Country

The Netherlands



Company

SmartCrusher bv

Project

Concrete recycling

- ▶ Circular Economy model applied: Resource recovery
- ▶ Separation into unhydrated cement and other pure raw materials that are suitable for further use

Cementing
our
future

Cement is all around us. It shelters us, it provides us with roads and viaducts, allows us to drive and helps us organize our urban spaces. But with an increasing population comes a growing building demand and a staggering price for the environment. How can we ensure greener solutions?
BY CLINIA TAYLOR



Circular Economy leading practices per sector; Construction

Construction

Country

The Netherlands



Company

Philips, Turntoo

Project

Circular lighting

- ▶ Circular Economy model applied: Product as a service
- ▶ Light as a service: from a one-time sale to a 'Pay per lux'



Circular Economy leading practices per sector; Electricity

Electricity

Country

The Netherlands



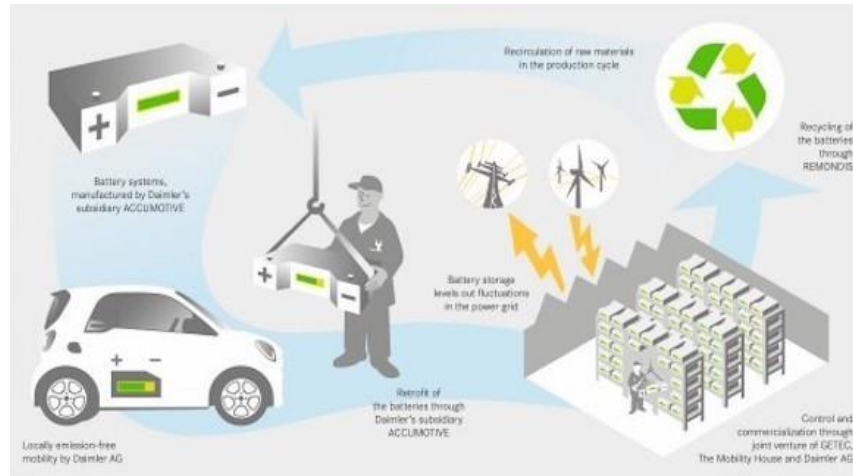
Company

Daimler

Project

Used car batteries

- ▶ Circular Economy model applied: Product life extension
- ▶ Batteries from e-vehicles get 2nd life for electricity storage



Circular Economy leading practices per sector; F&B

Food & Beverage

Country

The Netherlands



Company

Green Recycled
Organics

Project

Coffee residue re-
use

- ▶ Circular Economy model applied: Resource recovery
- ▶ Coffee residue as a growth substrate for oyster mushrooms



Circular Economy leading practices per sector; ICT

ICT

Country

The Netherlands



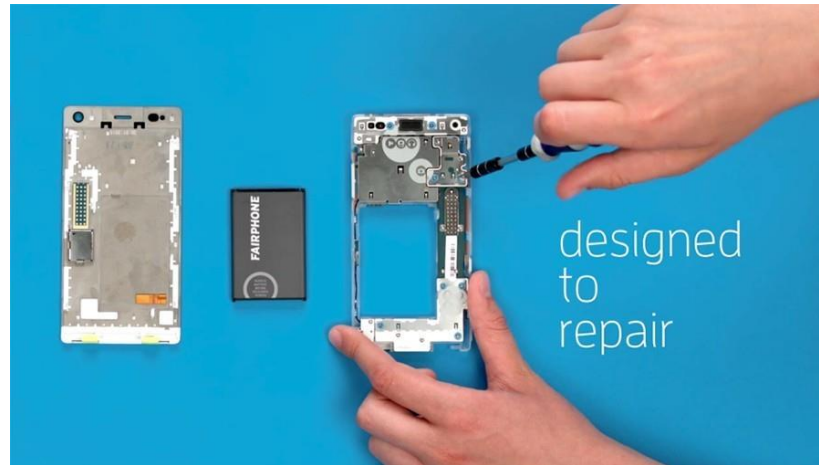
Company

Fairphone

Project

Modular phone

- ▶ Circular Economy model applied: Product life extension
- ▶ Users repair their own phone and replace parts



Circular Economy leading practices per sector; Refining

Refining

Country

Finland/ Netherlands



Company

Neste

Project

Bio LPG

- ▶ Circular Economy model applied: Circular supplies/resource recovery
- ▶ Production of premium-quality NEXBTL fuel from various waste, residues and vegetable oils



Circular Economy leading practices per sector; Steel

Steel

Country

The Netherlands



Company

Nedstaal

Project

Smart metal recycling

- ▶ Circular Economy model applied: Resource recovery
- ▶ Tracking and tracing products and identifying alloy composition



Regulatory initiatives in EU benchmarking group of countries

VANG

1



The Netherlands

Innovate UK

2



United Kingdom

Flanders
material
program

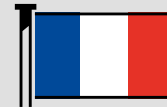
3



Belgium

Eco-mobilier
(EPR)

4



France

European
Insurance
Solution PCC

5



Sweden

Section 2: What is the current state of the Circular Economy in Greece?

Legislative and regulatory framework

Eirinikos Platis | Partner

Platis – Anastasiadis & Associates Law Partnership

Legislative and regulatory framework

▶ Documentation framework

- ▶ European Commission's roadmap titled "Circular Economy strategy"
- ▶ European Parliament's "Report on resource efficiency: moving towards a circular economy"
- ▶ European Commission's official webpage "Moving towards a circular economy"
- ▶ European Commission Communication titled "Closing the loop - An EU action plan for the Circular Economy"

Legislative and regulatory framework

- ▶ EU legislation per phase of the Circular Economy



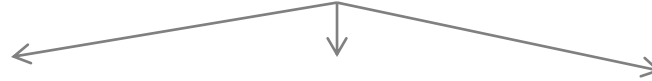
EU
Regulations



EU
Directives



EU
Decisions



- ▶ Greek legislation per phase of the Circular Economy



Greek
laws



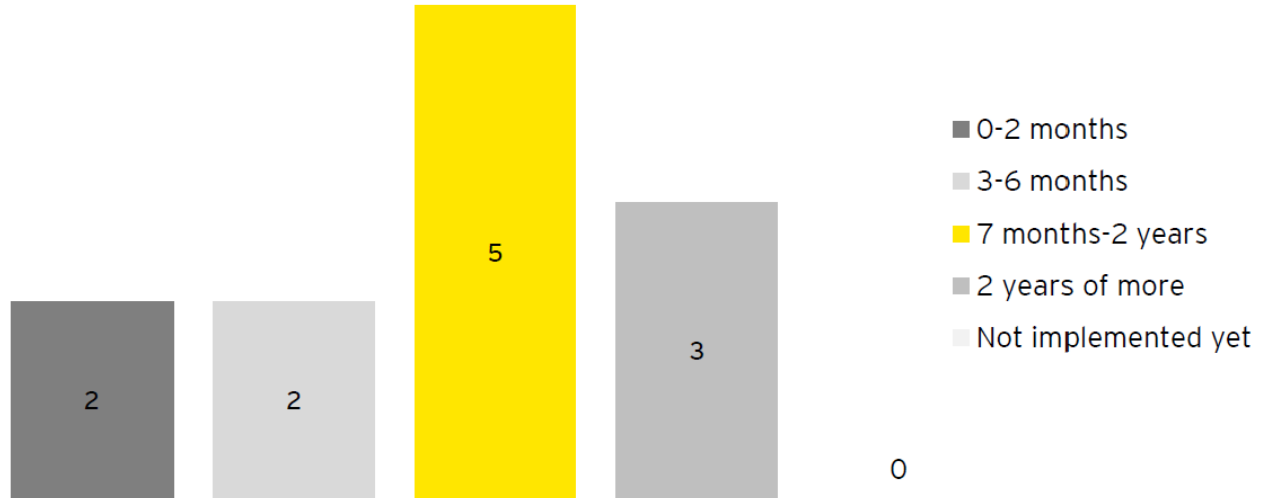
Greek
ministerial
decisions



Greek
presidential
decrees

Legislative and regulatory framework; Implementation

Implementation delay in Greece



Legislative and regulatory framework; Implementation

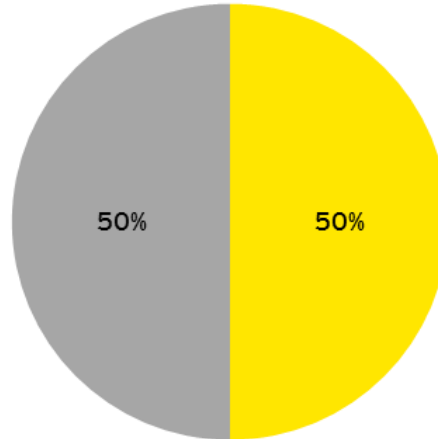
Implementation of Directive 94/62/EC on packaging and packaging waste

Issuance Date	Implementation Deadline	Implementation in Greece	Actual Implementation
20.12.1994	30.6.1996	6.8.2001	7.11.2008

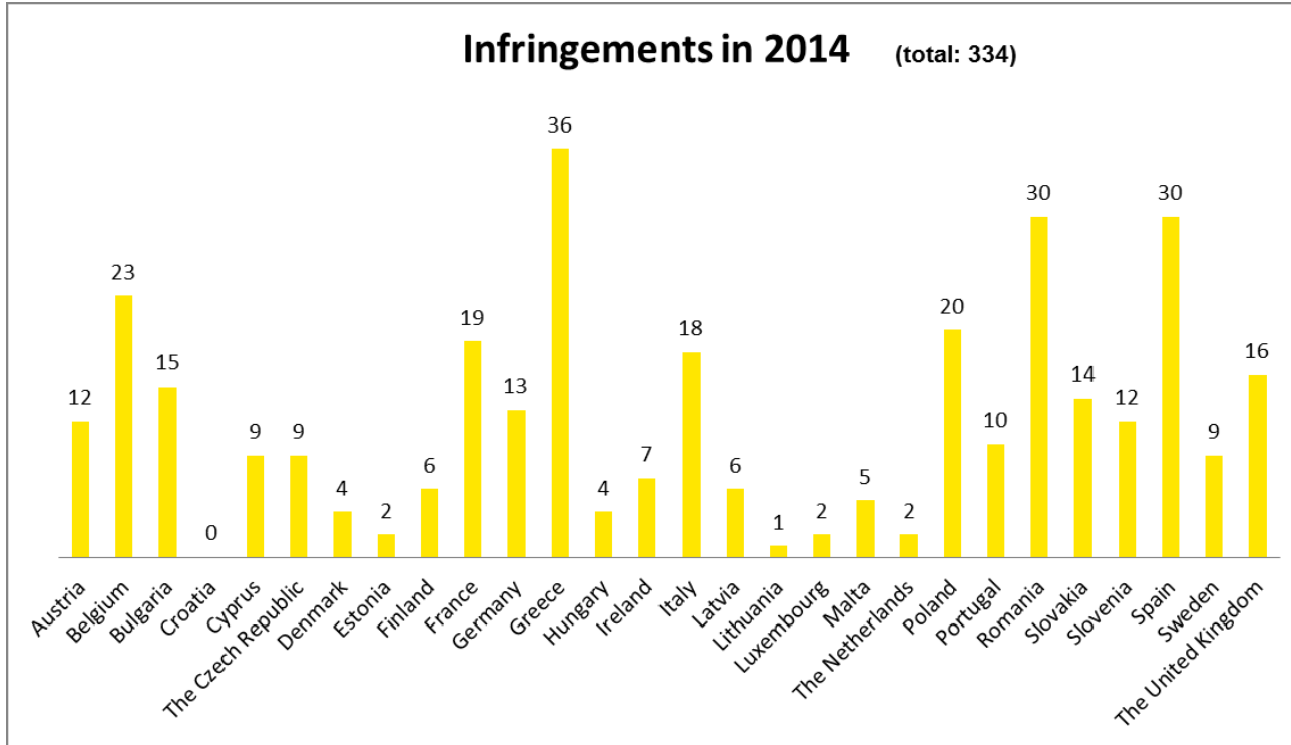
Legislative and regulatory framework; Infringements

Infringements of CE Directives (%)

■ Not led to sanctions ■ Led to sanctions



Legislative and regulatory framework; Infringements



Legislative and regulatory framework; Hazardous waste

- ▶ Greece failures on hazardous waste
 - ▶ To adopt an adequate management plan for hazardous waste
 - ▶ To create adequate facilities to deal with the hazardous waste generated.
 - ▶ To tackle the issue of "historical waste which has been temporarily stocked until it can be efficiently managed"

Legislative and regulatory framework; Conclusions

- ▶ Our review of the EU and Greek legislative and regulatory framework on the Circular Economy, as well as the legislative and regulatory barriers identified through our cross sectorial assessment, revealed:
 - A. Delays in implementation and failures in actual implementation of the European legal framework on the Circular Economy and the existence of concurrent and contradictory legislations and regulations
 - B. Non transparent and deficient licensing regimes for Circular Economy activities
 - C. Lack of law enforcement and absence of sufficient audit mechanisms and subsequent delays in the imposition of administrative fines

Legislative and regulatory framework

- ▶ Way forward
 - ▶ Development of a national roadmap for the transition to the Circular Economy, including:
 - ▶ Effective handling of legislative distortions
 - ▶ Establishment of audit mechanisms
 - ▶ Alignment of public procurement criteria to promote circular economy activities
 - ▶ Establishment of fair market conditions
 - ▶ Fiscal measures and incentives
 - ▶ Review and alignment of the National Waste Management Plan with the proposed roadmap

Section 2: What is the current state of the Circular Economy in Greece?

The business perspective

Kiara Konti | Manager EY

The business perspective; A sector by sector analysis against the Circular Economy

Approach

- ▶ Stakeholder engagement
- ▶ Desk-based research
- ▶ Limitations

Methodology

- ▶ Identification of main Circular Economy topics for each specific sector
- ▶ Documentation of material and product flows
- ▶ Development of assessment criteria for the sectors under scope

Technical cycles

ENERGY

1. Primarily non-renewable
2. Primarily mix
3. Primarily renewable



FEEDSTOCK

1. Primarily virgin
2. Primarily mix
3. Primarily reused / recycled



WASTE

1. Primarily landfilling
2. Primarily recycling
3. Primarily reuse/remanufacture



Biological cycles

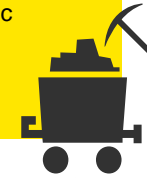
ENERGY

1. Primarily non-renewable
2. Primarily mix
3. Primarily renewable



FEEDSTOCK

1. Primarily non organic
2. Primarily mix
3. Primarily organic



WASTE

1. No resource recovery
2. Limited reuse, energy or material recovery
3. Common reuse, energy or material recovery



BUSINESS MODEL

1. No CE models adopted
2. At least one CE model widely adopted
3. Various CE models widely adopted



Sectors under scope



Aluminium

Cement

Construction

Electricity

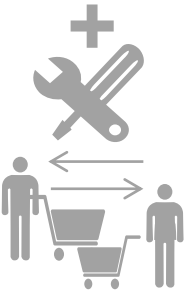


**Food &
Beverage**

**Information and
Communication
Technology
(ICT)**

Refining

Steel



Key findings; Circularity & Energy



Overall level of circularity

Linear	3
Transitional	5
Circular	0



Energy

Linear Primarily non-renewable	8
Transitional Primarily mix	0
Circular Primarily renewable	0



Key findings; Feedstock



Biological feedstock (Food & Beverage Sector)

Linear

Primarily non organic

1

Transitional

Primarily mix

0

Circular

Primarily organic

0



Technical feedstock (Excluding F&B)

Linear

Primarily virgin

6

Transitional

Primarily mix

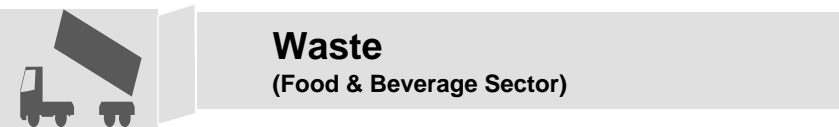
0

Circular

Primarily reused/recycled

1

Key findings; Waste



Linear

No resource recovery

0

Transitional

Limited reuse, energy or material recovery

1

Circular

Common reuse, energy or material recovery

0



Linear

Primarily landfilling

3

Transitional

Primarily recycling

3

Circular

Primarily reuse/remanufacture

1

Key findings; Circular models applied



Main conclusions

01

Need for legislative and regulatory reform towards the Circular Economy

02

Fragmented adoption of circular models, in the context of inefficient systemic approach

03

Emphasis is placed on the 'end of life' stage, rather than on the design stage

04

Recycling and recovery of construction and demolition waste requires considerable improvement

05

Low penetration of secondary fuels in some industrial applications

06

Bio-waste and food waste recovery is limited, resulting in significant economic and environmental impacts

07

Need for law enforcement of hazardous waste legislation

08

Addressing waste market barriers

Way forward

01

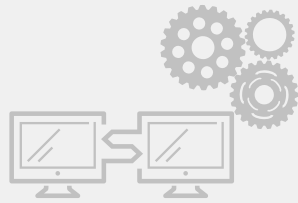
Development of a national roadmap for the transition to the Circular Economy

1010110
100100
110101



02

Development of collaboration platforms



03

Sectorial level assessments

1010110
1001001
1101010



04

Awareness raising at consumer level



Thank you for your attention