



How does Thailand apply a **Bio-Circular-Green** Economy in their urban agenda?

Circular City Hubs: Improving thriving, liveable, resilient urban centres
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Thailand BCG Model



Circular Economy



Big Rock Project

BCG MODEL: Economic Model for Sustainable Development



Bioeconomy



Circular economy

Green economy

BCG Economy: Thailand's Economic Model Post-COVID-19





Thailand BCG Model

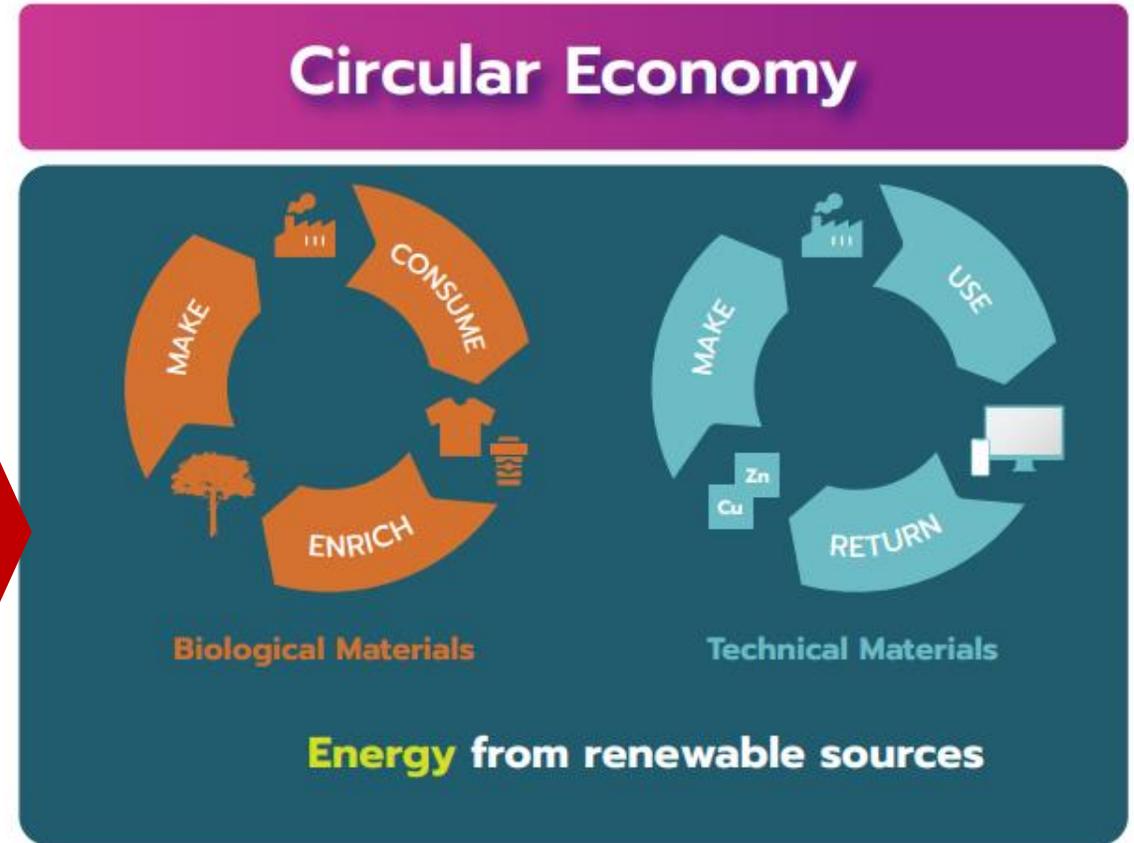
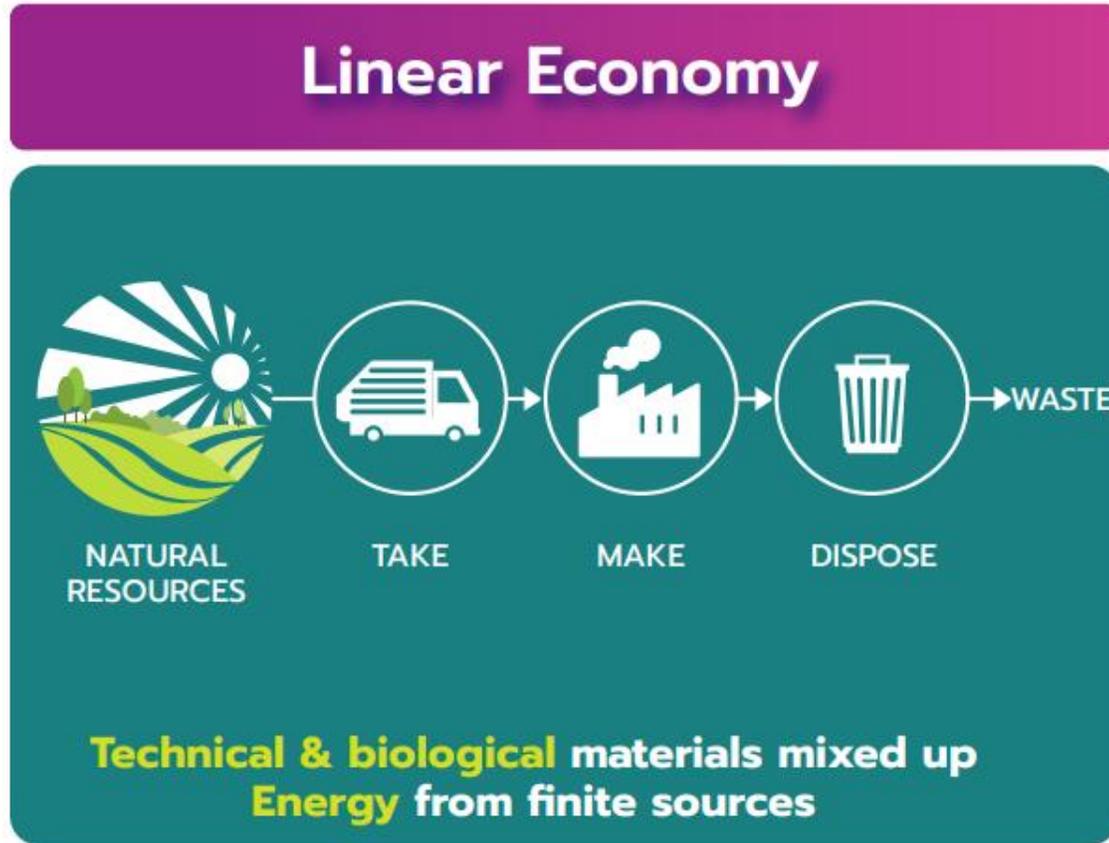


Circular Economy



Big Rock Project

A transition from unsustainable linear economy to a more sustainable circular economy



Linear economy; Take-make-dispose

We take resources from the ground to make products, which we use, and, when we no longer want them, throw them away

Circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems



Circular Economy Concept

UNIDO, 2021

Why we need a circular economy?



Resource Scarcity

Leading to economic and social risk of supply shortage



Over Consumption of Resources

: Business rely on increasing resource consumption to create growth



Severity of Pollution

Linear economy means increased consumption.... Leading to more waste and pollution



Effect of Global warming & Climate Change

Paris Agreement target of limiting global warming to as close as possible to 1.5 -2°C (113 mil tons CO₂eq)



Actions to achieve a Better and More Sustainable Future for All



Maximize Resource Efficiency and Eliminate Waste



New Economic Opportunities

- Boost GDP
- Glowing green business/startups
- Job creation/Green job



Alignment with Government Policy

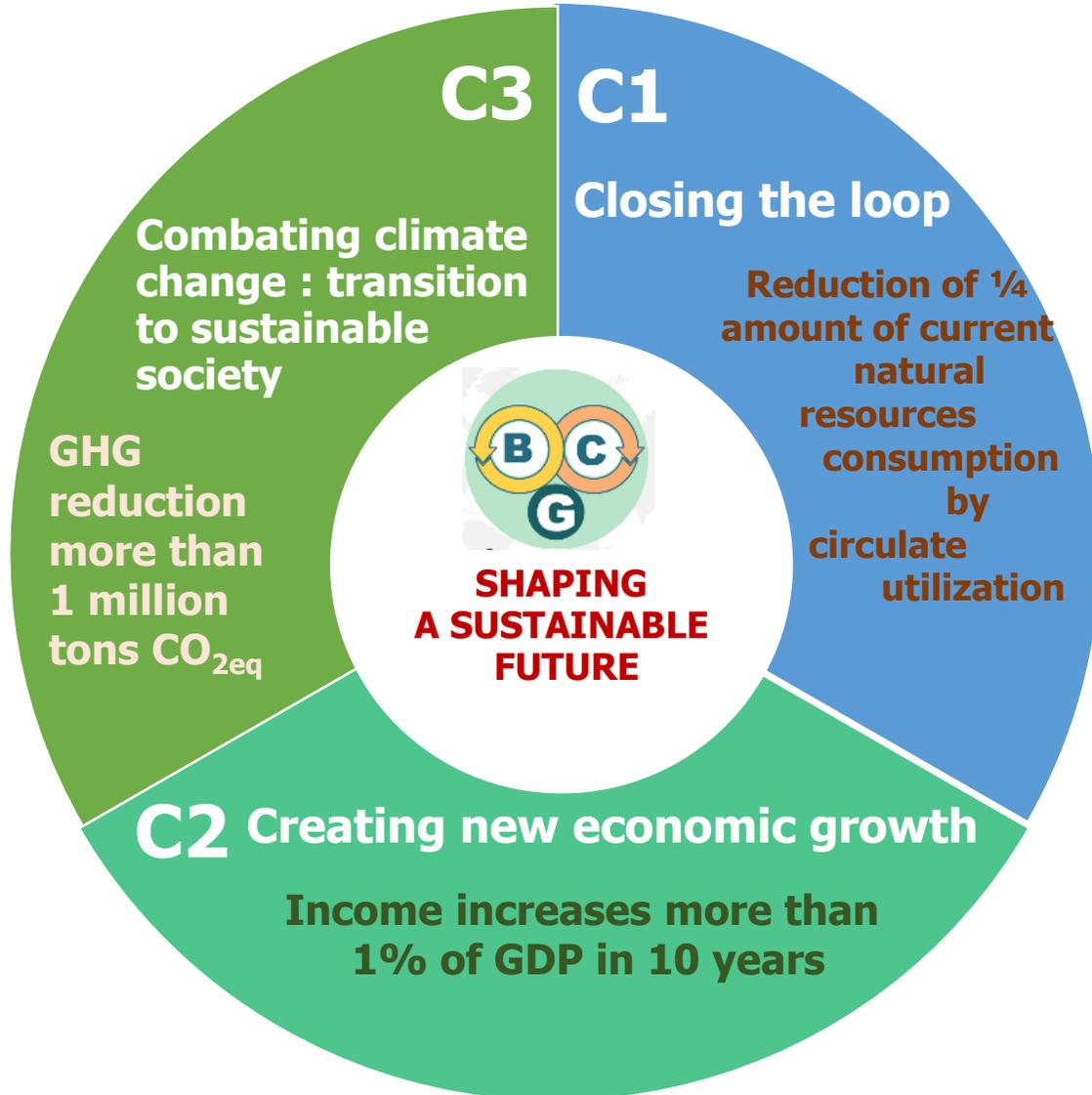
- Bio-Circular-Green(BCG) economic model and Thai Plastic Roadmap

BCG in Circular Economy

Driving mechanism

: Delivering through key project/Focus sector
Co-benefits to create success model

Target Sectors



Plastic Waste



- : Waste reduction
- : Improving Segregation & collection system
- : Encourage recycling

Agriculture & Food Industry



- : Increasing resource use efficiency;
- Agricultural waste - Stop open burning
- : Food loss/food waste reduction
- : Increasing consumer awareness

Construction Sector



- : Strengthening innovation & technology capability
- : Promoting environmental friendly construction to support smart city policy

Circular Economy Model (under the BCG Economic Model)

Closed-loop Plastic Waste Management sorting, collection, storage and recycling

Recycling

Cooperation mechanisms of the public, private and public sectors (PPP)

- Increase the use of plastic reused and recycled. Developing new approaches in recycling plastics.
- Create a market for upcycling products
- Develop innovation & technology
- Amend rules and regulations that barrier the recycled plastics market
- Measures to encourage manufacturers to use packaging with an increasing proportion of recycled plastic content

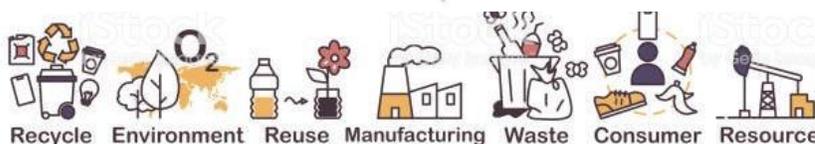


Reduce and sorting

- Consumers reduce the use of plastic
- Sort waste at the household and community levels.

Collection, storage and treatment

- Public-private cooperation to develop an integrated infrastructure and system for waste collection and sorting through innovation



To reduce plastic marine debris by at least **50%** by **2027**.

Target 1 Reduce and replace some single use plastic by using environmentally friendly products



Target 2 Recycle target plastic waste by applying circular economy principle



Thailand Roadmap's Target



Circular Economy Model (under the BCG Economic Model)

Sub-Committee

under the Driven BCG Model Committee

CE Model chaired by Dr. Wijarn Simachaya

Driven BCG Model Committee chaired by the Minister of MHESI

BCG Model Committee

chaired by the Prime Minister



Thailand BCG Model



Circular Economy



Big Rock Project

Operational Guideline



01

Creating business opportunity and marketing by CE Model



02

Promoting technology and innovation to create new products and services from recycled wastes



03

Development of platforms and infrastructure to promote a systematic CE



04

Creation of a management mechanism that facilitates CE



05

Building manpower with knowledge and understanding on CE and raising awareness of sustainable production and consumption to drive CE.



Big Rock Project

To create major changes in Thailand



Project 1: Comprehensive plastic waste management including segregation, collection, and circulation for sustainable use



Project 2: Management and Integrated information for reduction of food loss and food waste at the national level



Project 3: Development and application of CE Model in construction sector



Indicators



แนวโน้มการใช้ทรัพยากรโน้มเพิ่มมากขึ้น
กว่า **600** ล้านตันต่อปี



1 Reduce national's resources consumption by 25% within 2027



2 Create investment opportunities for growth and employment with the new economy, resulting in a 1% increase in GDP by 2027



ปริมาณก๊าซเรือนกระจก
มากกว่า **354** ล้านตันคาร์บอนไดออกไซด์เทียบเท่า



3 Reduce Green House Gas Emissions at least 1 million tons CO_{2eq} by 2027



PPP Plastics

Press Conference and MOU Signing: June 5, 2018

Public Private Partnership for Sustainable Plastic and Waste Management (PPP Plastics)



Organization



Government sector



Private sector



PPP Plastics

International organization



PPP Plastics
Network Partners

Educational institution



40 ORGANIZATIONS

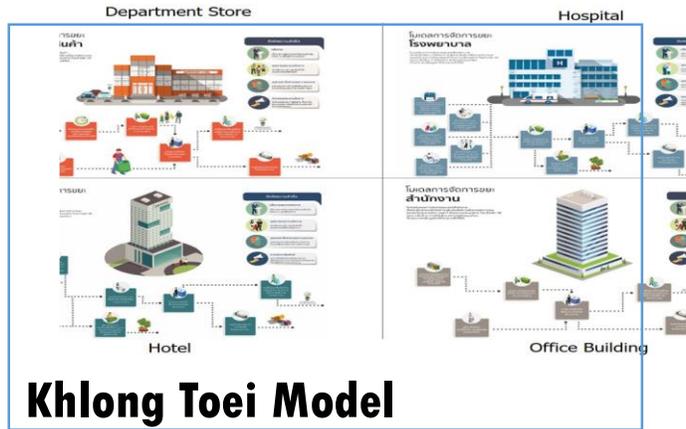
City Model : PPP Plastics 's Infrastructure Circular Economy Model



PPP Plastics

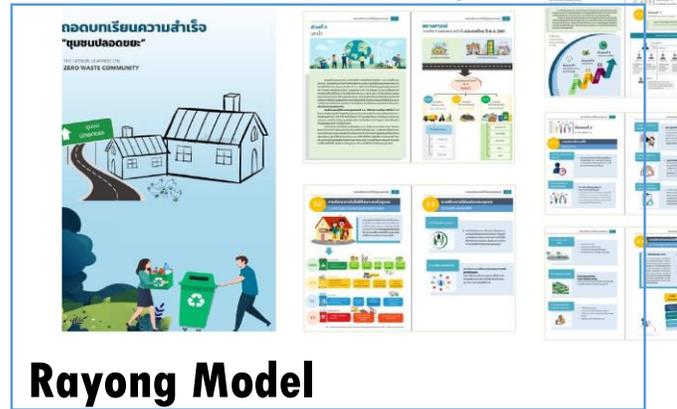
Circular
Economy
Model in
Urban Area

Four sub-models



Guidebook for community model

Example



ถุงพลาสติก
เกิดใหม่!!
มาร่วมกันชุบชีวิตถุงพลาสติก
ด้วยมือคุณ

Drop Point Project



PPP Plastics

Big City Waste Management with Circular Economy

Created waste management models focusing on increasing recycle rate by improving waste separation facilities and process.

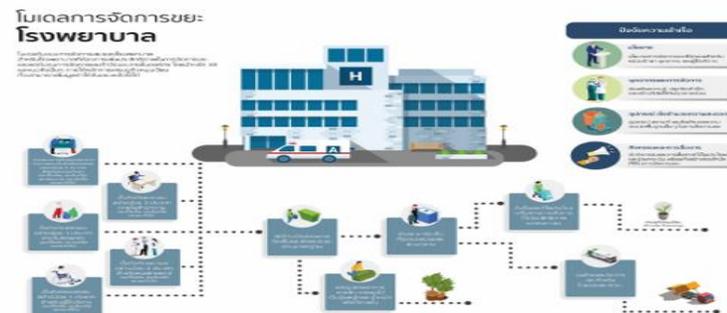
- General waste of the 7 participating buildings decrease **21.0 %**
- Recycle rate increase more than **55.8 %** or **358 kilograms/month.**

Four sub-models

Department Store



Hospital

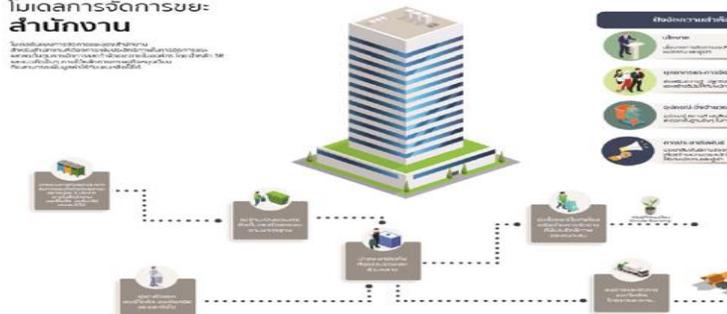


โรงแรม



Hotel

สำนักงาน



Office Building

Khlong Toei City Model



PPP PLASTICS

คู่มือการจัดการขยะสำหรับองค์กร

โดยโครงการจัดทำแผนต้นแบบการบริหารจัดการขยะพลาสติกขององค์กรในพื้นที่เขตคลองเตย





Circular Economy in Action

Drop Point Project

“Magic Hand x Won”



- Creating a plastic waste collection system
- Closed Loop Film Packaging Management
- Target plastic bag and film packaging
- Target used-plastic is value 5 baht/kg for donation to marine life conservation program



>350

Place Used-Plastic Box

>40

Drop Point Contributor

7

Recycler & Picker

17,390

Kg. of Cumulative used-plastic bag and film packaging

15,113

Kg. of CO2 emission reduction

8.8

Rai of Teak



Circular Economy Business Model : PPP Plastic-Rayong Model



10 Aug' 18
Meeting with Rayong governor

18 Dec' 18
MOU ceremony
PPP Plastic Rayong

23 Jan' 19
Bi-monthly meeting#1

12 Mar' 19
Bi-monthly meeting#2

7 May' 19
Bi-monthly meeting#3

16 Aug 19
Bi-monthly meeting#4

6 Nov 19
Annually Performance Meeting



18 Dec' 18
Waste management workshop
with communities

5 Mar' 19
Outside exhibition

2 Apr' 19
Waste management workshop
with schools

3 Nov 19
Waste management sharing



“Rayong Less-Waste project” aimed to expand the community and local waste management model with a circular economy in Rayong Province by transferring knowledge to create knowledge and understanding of waste management to cover all 68 municipalities of Rayong Province, and to generate income, a career, good quality of life and reduce the amount of plastic waste that goes to landfills in Rayong which it is counting the days to have less area.

Rayong Less-Waste

พนักกำลังสร้างระยองต้นแบบจัดการขยะยั่งยืน



Circular Economy Business Model

Target

- % Reduction of plastic waste to landfill
- Municipalities engagement

2019

30%
19

2020

• 50%
• 24

2021

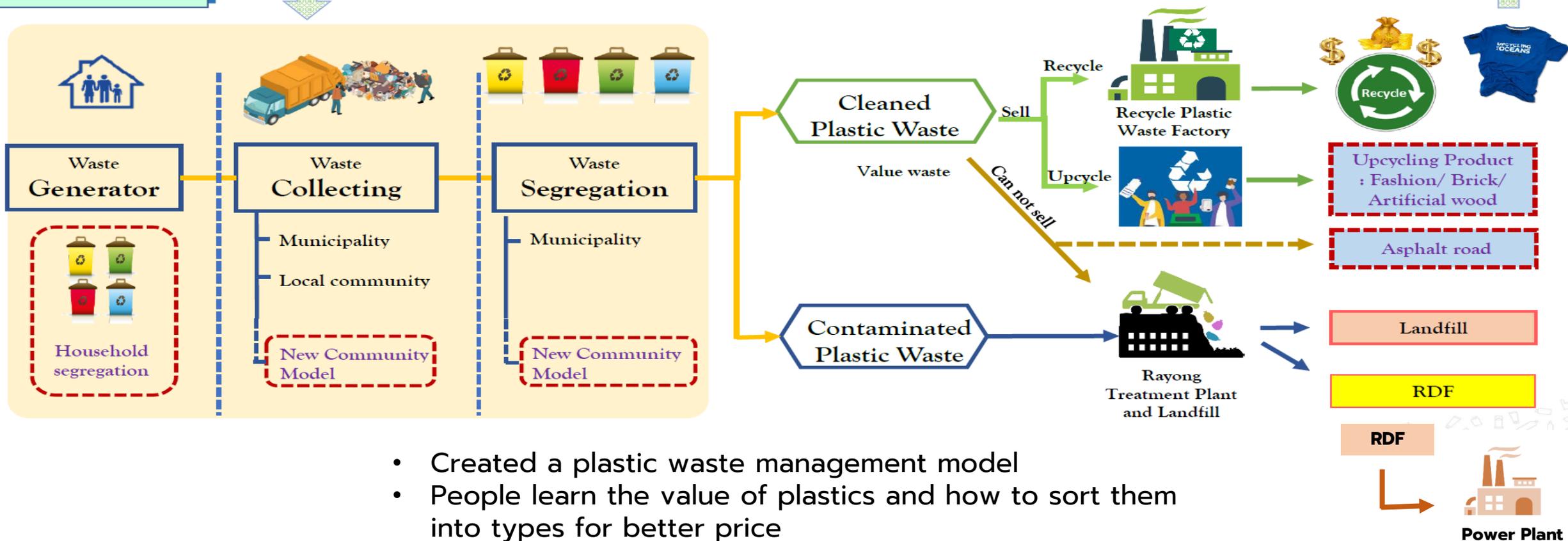
2022

• 70%
• 48

2023

• Zero plastic waste
• 68

Rayong Model



- Created a plastic waste management model
- People learn the value of plastics and how to sort them into types for better price
- The model can be replicated to other communities
- 300 tons of plastic waste were recycled

Innovation : Mechanical recycling

Plastic Waste → Recycled Plastic Road

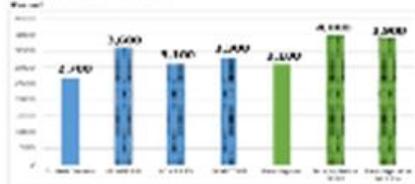
Recycled Plastic Road ... One of the Innovation in Circular Economy



15.17Kilometer of Plastic Road built with waste for the use of an environmental symbol

Why should you consider and modify:

- Carbon footprint (CO2)
- 15% of the world's plastic is recycled
- 10% of the world's plastic is recycled
- 10% of the world's plastic is recycled



PP/HDPE → bins

No Waste, More Resources

We start the "circular economy"

from the internal loop from waste to resources

It's a re-process, a re-design

and finally an innovation.

It's a real value creation.



Plastic & Sand → Plastic Bricks



PET bottle → fashion product

Upcycling Oceans, Thailand Proj^oGC

Upcycling Oceans, Thailand Project (UTO) where we turn PET bottles into modern style products like t-shirt and backpack.



Plastic Waste & Saw dust → Artificial woods



Drivers Mechanism of BCG-Circular Economy in the City Context

Driving by Key project/ Focus sector

- : create success model
- : accelerating the scale-up of circular economy

CE Solution Platforms

- : develop CE platforms and link to users (e.g. CE design platform)
- : strengthening innovation & technology capability

Public-Private Partnerships

- : bringing together leaders from the private, public and not-for-profit sectors



Build CE Society and Citizens

- : education and communication to change social behavior of consumers e.g. CE curriculum in general education
- : enhancing skills of manufactures/businesses

Create CE Market

- : regulatory reforms
- : unlock policy & regulatory barriers for CE market
- : introduce tax incentives/ financial support
- : create measures to stimulate demand e.g. green public procurement (GPP)



Thank You

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