INDONESIA COUNTRY REPORT 2024

AFPI meeting Nanjing October 31th -November 3th 2024

Industry and Economy Update

Internal Factors

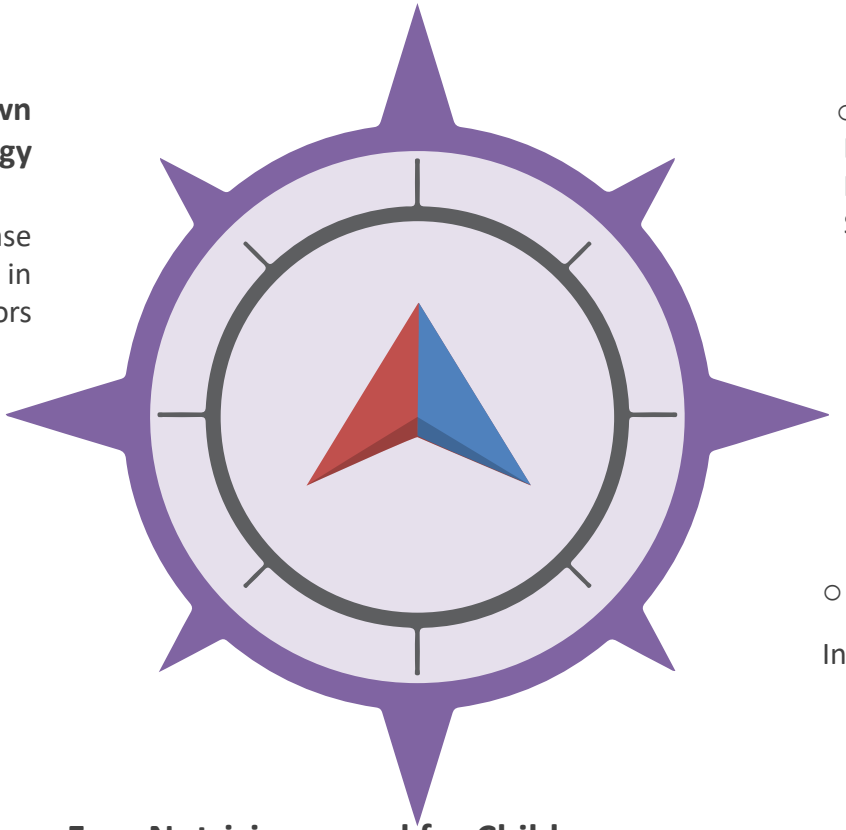
- Economy Growth rate (Q1 & Q2 2024) : 5,1 %
- Inflation 2,5% , down from 4% (deflation)
- Politics: General & regional election. Handover of Presidency
- Plastic demand slightly down to 4 %
- PMI Manufacturing down to 49 from 50%
- Average utilization of Plastic manufactures : 60%
- Flood of Resin and plastic import
- Some new Petrochemical project Investment are rescheduled,

External Factors

- Global Conflict and Economic Crisis & stability
- Multi VS Uni Polarity world

Golden Indonesia 2045 VISION

- **Hand Over of Indonesia Presidency** , JKW to Prabowo
October 20th 2024



- **Indonesia Natural Resources Down streaming development Strategy**

Income Per capita of Indonesia will increase significantly and boost investments in many sectors

- **Geopolitical Dynamic**

Global Political orientation will change from single polar dominance to multi polar power distribution.

- **Integrated Refinery & Petchem**

Increase Product competitifness Domestically and eksport potensial

- **Expected Indonesia Economic Growth**

Boost Economic Growth to > 6%
Income per capita will increase to $30,000 from $6,500

- **Indonesia Regional Development**

Open more opportunity to increase plastic demand in East Indonesia Region and New Capital City in Kalimantan

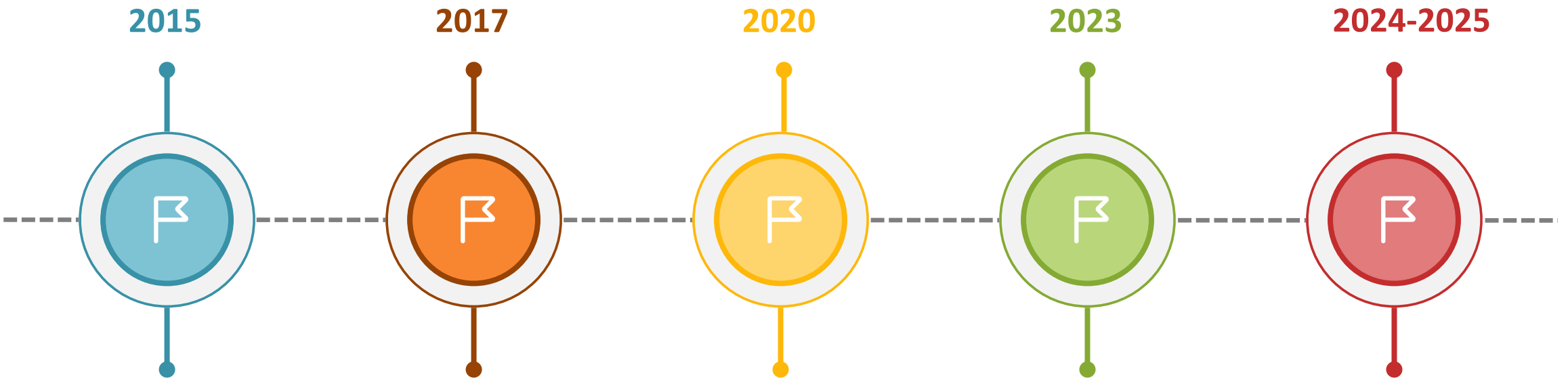
- **Food Security**

Increase plastic demand for Agriculture.

- **Free Nutrisious meal for Children**

Working Opportunity for SME and absorb the Agriculture products and food Industry

INAPLAS Waste Management Milestone



2015

Jenna Jambeck
Riset sampah plastik masuk ke laut.
Indonesia pengotor laut nomor 2

2017

MASARO-INAPLAS
Inaplas introduce Zero waste concept MASARO

2020

W2V -INAPLAS,
Introduction of Waste to Value management concept

2023

Waste Management Projects

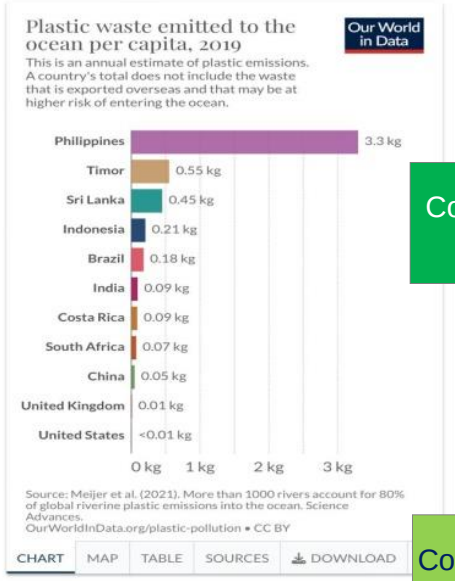
1. Masaro plant
2. Plastic road Construction
3. Micro Waste Manajgement
4. HIPOH –Food resilience ND SECURITY
5. RDF 100 ton Capacity

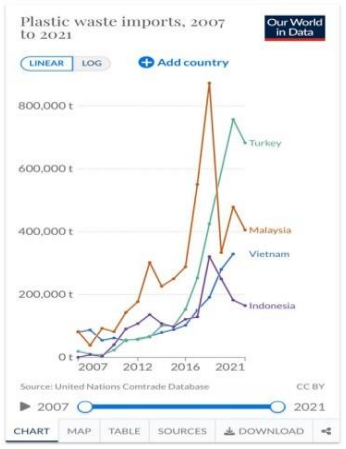
2024-2025

1.Circular Economi Development
2. RDF as soil conditioner
3. Waste to Energy EV charging
4. Waste to Energy Gasification

INDONESIA PLASTIC CONSUMPTION 2023
(Plastic Flow Index)

INAPLAS





Country Capacity
3.276 MMT

Country Production
3.103 MMT

Import
1.766 MMT

Raw material plastic
6.758 MMT

Recycle
1.500 MMT

Household
1.351 MMT
(20%)

Packaging
2.703 MMT
(40%)

Building
1.104 MMT
(15 %)

Shopping bag
0.406 MMT
(6,5 %)

packaging
Stereoform
0.020 MMT
(0.3 %)

Others
1.230 MMT
(18,2 %)

Finished Goods
Plastic Impor
1.200 MMT

Plastic Waste
2.187 MMT
(30 %)

Managed
Waste
1.900 MMT

Marine
debris
0.287 MMT

Material still consuming
4.041 (53 %)

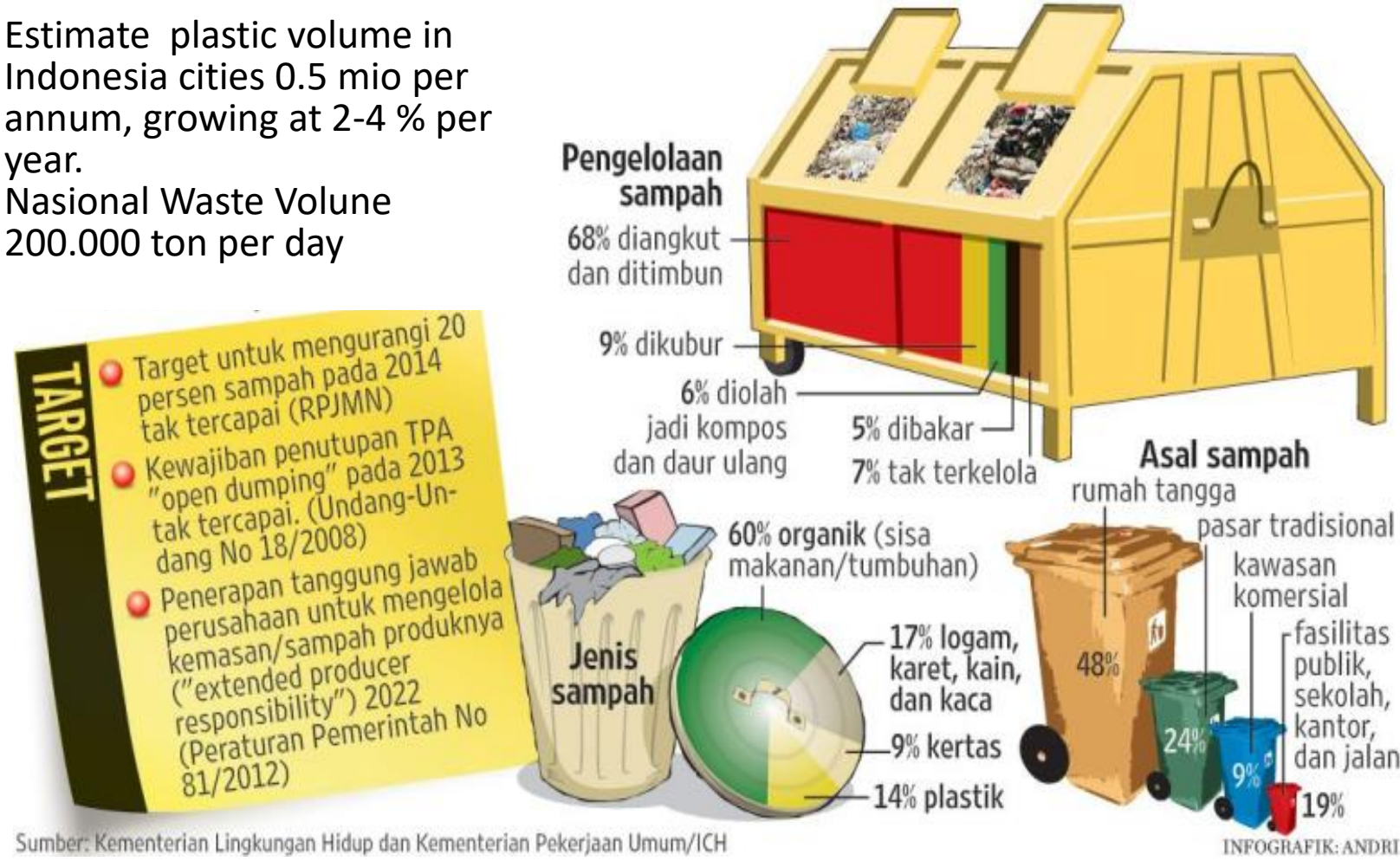
Material
Recycle
1.296 MMT(17 %)

Carry over
plastic waste before
0.359 MMT

Waste Management in Indonesia – Overview

Kategori Sampah	% Berat	% Volume
Kertas dan bahan -bahan kertas	32,98	62,61
Kayu/produkdari kayu	0,38	0,15
Plastik, kulit, dan produk karet	6,84	9,06
Kain dan produk tekstil	6,36	5,1
Gelas	16,06	5,31
Logam	10,74	9,12
Bahan batu, pasir	0,26	0,07
Sampah organic	26,38	8,58

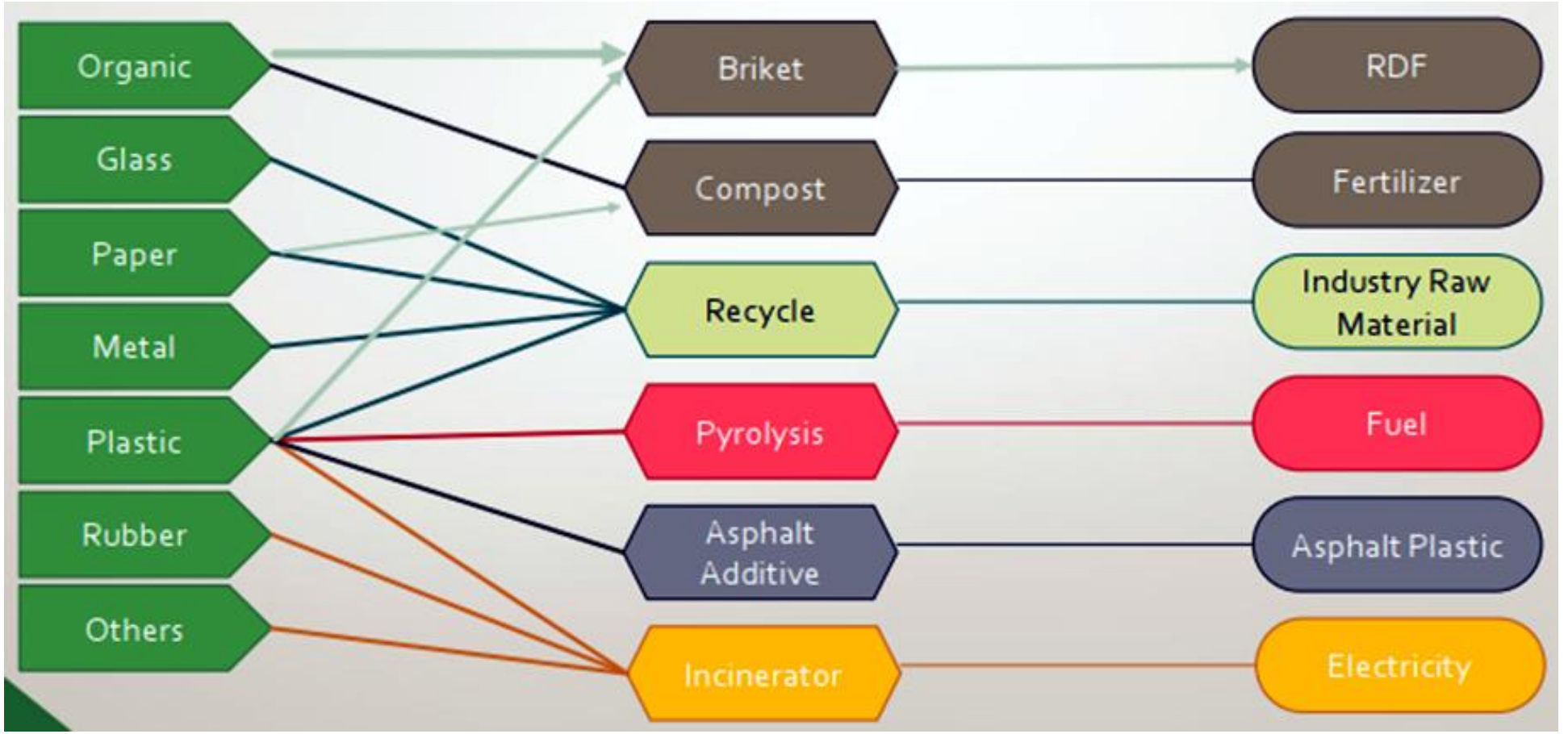
Estimate plastic volume in Indonesia cities 0.5 mio per annum, growing at 2-4 % per year.
Nasional Waste Volume 200.000 ton per day



APA yang disebut WASTE TO VALUE (W2V)?

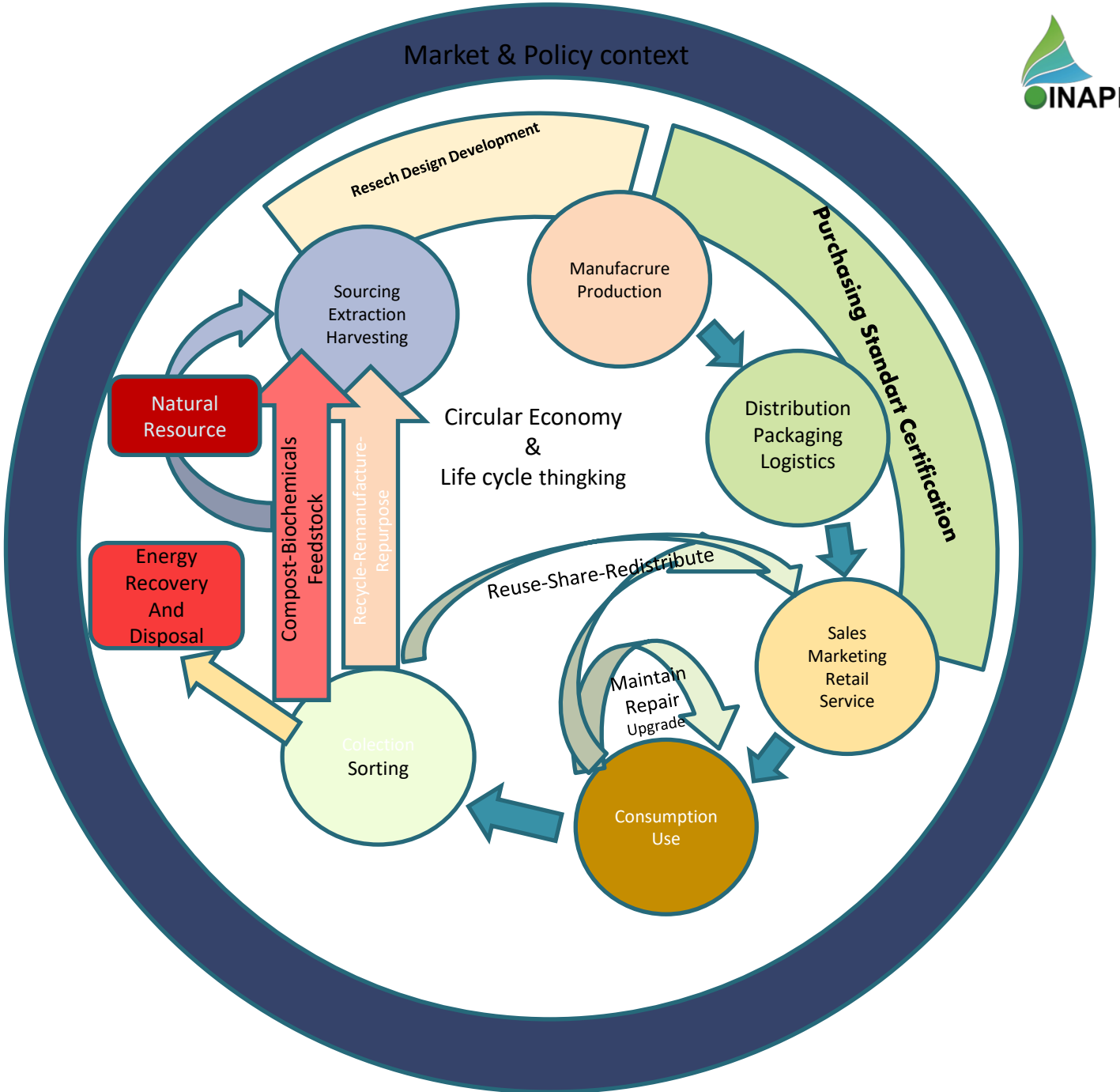
Unit usaha pengolahan sampah menjadi produk yang akan memiliki nilai jual (Circular Economy)

Potential Technology Solution - ZERO WASTE to WASTE TO VALUE Concept



Circular Economi

Circular Economy is “Economic Model on production to consumption approach system, which minimizing resources and pile of waste, maintain material usefullness and regenerative in nature”



MASARO

Manajemen sampah zero waste

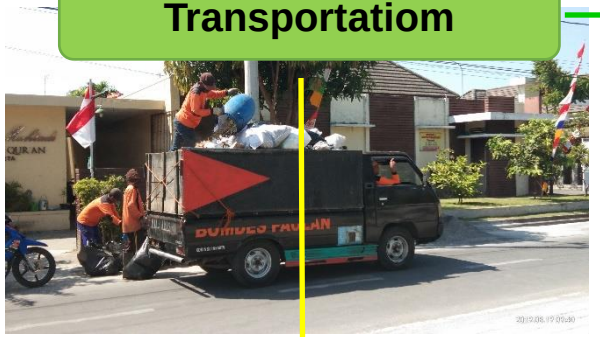
1. Conversion of plastic waste nd residu sampah plastik dan sampah residu to become a usefull produk
2. Recycle material
3. Energy source for RDF, production , House Hold electricity , Salt and Sudar production.
4. Soil Media
5. Pesticide
6. 5th Generation Model

Projek-projek Inovasi waste Manajeman Inaplas

Micro Waste Management

House hold waste

Transportatiom



Organic

Fermentation

Liquid Fertilizer

Chopped

Composting

Anorganik

Un economic

Incenerator

Distilated Smoke Pestiside

Dust for building construction/ brick

Ekonomical

Processed/sell

CAP Circular Economy Activities

Circular Economy to Support Waste Management

Commitment and Implementation

Chandra Asri is committed to implementing a circular economy ecosystem to maximize the circular use of materials in order to reduce waste production by recovering and reusing as much as possible, in a systematic and repeated manner. In waste management, waste segregation is a key factor to maximize the use of each material until the end of its lifespan.

1. Asphalt Plastic Road

Improving stability by up to 40% by incorporating 4-6% of plastic shopping bag waste into asphalt mixtures.

This initiative aligns with Presidential Regulation No. 83 of 2018. On 2023 we are successfully achieved 120.83 km plastic asphalt implementation exceeding our 100 km target that we declared on Our Ocean Conference

Implementation Status

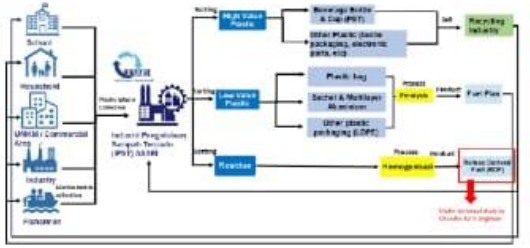
(end of 2023)

120.83 KM

using **144.75 million sheets**

2. *End-to-end Plastic Waste Management System*

Developing waste management based on the Circular Economy concept in Cilegon, in collaboration with local community organizations. The collected plastic waste will be sold to the recycling industry and turned into 'plastic fuel' for various uses in the community. The implementation will also include marine waste collected by local fishermen, which will then be converted into gasoline-plast to replace gasoline/diesel for fishing activities.



- **IPST ASARI**

A waste processing center in Serdag that covers waste collection from one sub-district. This is an integrated waste management area guided by Chandra Asri to empower the local community. IPST ASARI is equipped with a pyrolysis machine to process low-value plastic waste into fuel for community use.

36,951.2 kg Plastic waste managed, avoided to landfill

14.149 liter Pyrolysis oil product

- **SAGARA**

Collaboration with fishermen to collect marine plastic waste in their fishing areas. This initiative supports the government's target to reduce marine waste.

The collected plastic waste will be sent to IPST ASARI for segregation and pyrolysis processing. The resulting plastic fuel will be used by the fishermen for fishing, reducing their fuel costs

450.2 ton Waste managed

1,748 People participation

3. *Campaign and Education*

- **KOLASE**

An abbreviation of Collaboration for Managing Circular Economy Waste in Schools in Cilegon City.

It is an initiative program for educating on waste management and its benefits to raise awareness among the school community.

1,970 kg Waste managed and avoided to Landfill

1,024 Participation

- **Office Waste Management**

140.218 kg ≈ 56% Waste managed and avoided to Landfill

A waste segregation program based on four categories: Plastic, Paper, Organic, and Others, implemented at Chandra Asri Group office environment.

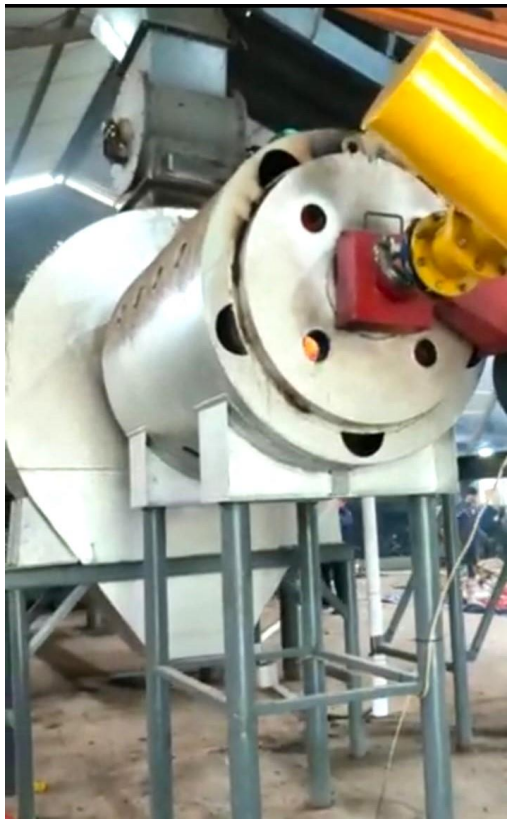
Projek-projek Inovasi waste Manajeman Inaplas

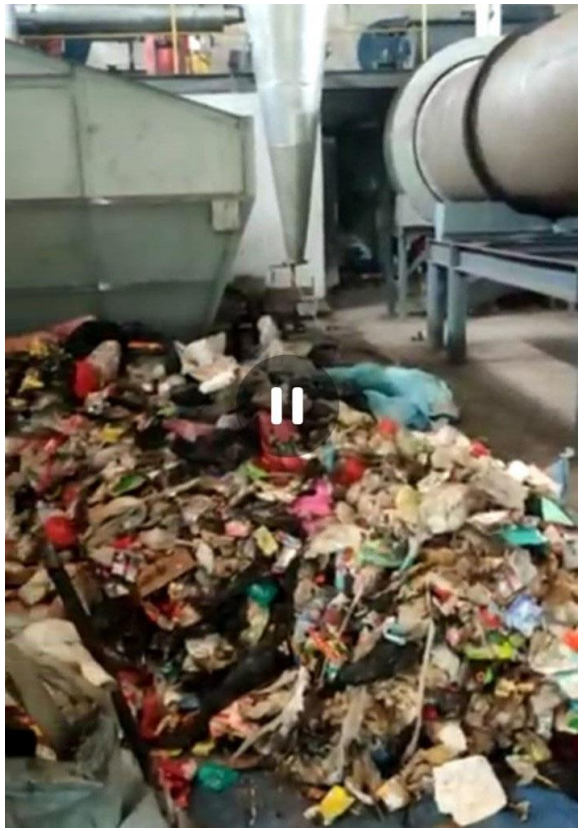
120 Km Plastic Road Construction

By end of April 2024, 1020 Km plastic road have been done.
Use 1160 ton plastic waste collected from final waste disposal site

Projek-projek Inovasi waste Manajeman Inaplas

Refuse Derived Fuel (RDF)





- Capacity 100 ton per day
- Calorie Value >5000 Kcal

Innovasion Projects in waste Manajemen by Inaplas

800% Productivity Increase
HIPOH-C hilli Plantation

- Acommodate 10 times trees in same size of area compare to traditional method
- Increase productivity by 8 times
- Reduce 80% chemical fertilizer
- Employ half of work forces (farmers)
- Having 5 demo-plot in Bogor area

Recycle plastic Polybag

Compost planting Media

RICE FARMING DEMO PLOT TEGAL DISTRICT, CENTRAL JAVA
March 2021 Cooperation between Inaplas and Tegal Authority

High Productivity Record 11,7 Ton/ Ha

Waste to EV Charging

Waste to Energy by Gasification Process in Solo Central Java

CARBON FREE STEAM & COLD GENERATION BASED ON WARP GASIFICATION PROCESS

UNIVASTUM

RESUME

Using WARP UNIVASTUM technology, one gasification complex produces steam and cold from various types of waste with minimal or zero CO2 emissions.

Complex parameters:

Parameter	Unit	Value	Note
Waste processing	T/Hour	2	Treated waste: 2 t/hour, untreated waste: 3-3,8 tons/hour
Operating hours a day	Hour	24	Continuous operation 24/7
Annual operation hours	Hour	8000	Maintenance break once a year
Project implementation period	Month	12	From design to launch

WASTE

- Municipal solid waste (MSW)
- Tires, rubber
- Agricultural waste (husks, straw, bird droppings, oil cake, etc.)
- Oil sludge, pet coke, oil-contaminated soil
- Coal (brown coal, hard/stone coal)
- Sewage sludge
- Plastics
- Food production waste (sludge, waste, packaging)
- Industrial waste