Stakeholder Virtual Meeting

Hosted by HHI

November 26, 2020

BIOPLASTICS EUROPE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 860407 BIO-PLASTICS EUROPE project website: https://bioplasticseurope.eu/

HENG HIAP

Current Realities of Biodegradable and Biobased Plastics in Circular Economy

AGENDA

4.00 pm	**Company Introduction** Heng Hiap Industries Sdn Bhd
4.15 pm	**Project Introduction** H2020 Bio-Plastic Europe
4.30 pm	**Current Realities of Biodegradable and Biobased Plastics in Circular Economy**
4.45 pm	**Open Dialogue**
5.00 pm	**End**

HENG HIAP - a modern recycling business

Quick facts

- Established in 2002
- Head count of 130
- Factory build-up of 7,590 m²
- 7 extrusion lines
- Plastic scrap sourcing of 60,000 metric tons per year
- More than 70% of output are exported to 33 countries
- 18 Intellectual Properties and 1 trademark filed

Smart Factory: GBI 'Gold' Award

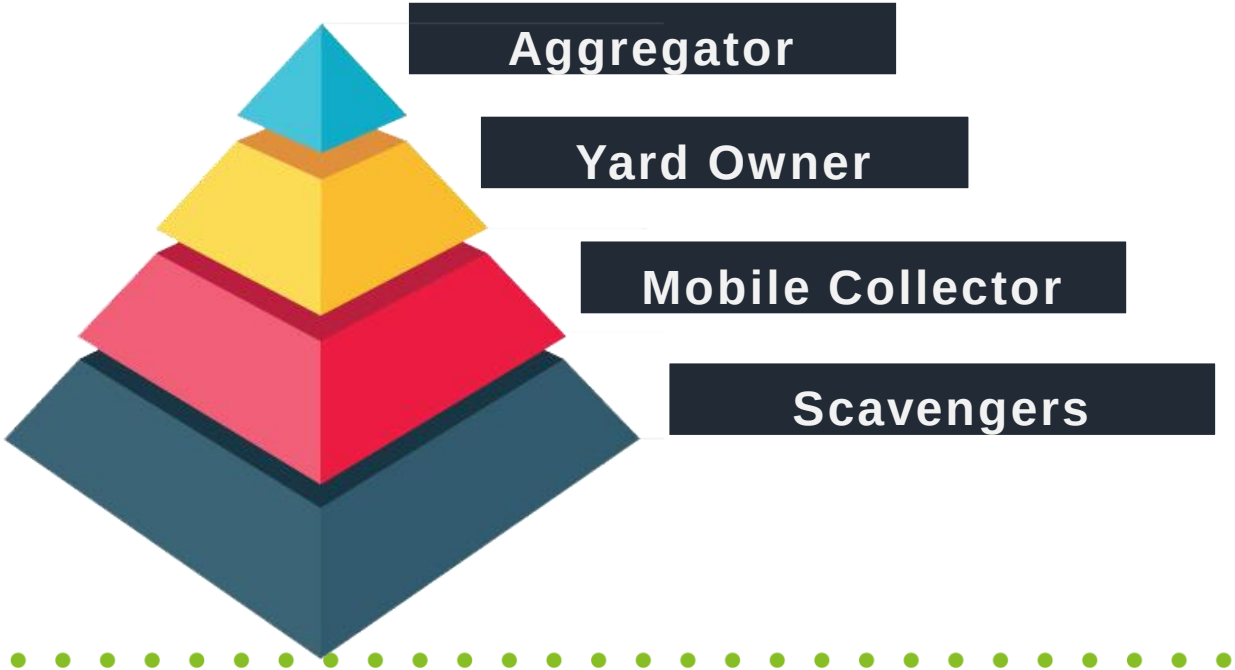
- Rainwater harvesting
- Building orientation to maximise natural ventilation
- Energy efficient ventilation and lighting

Responsible Innovator: Upstream Recycling

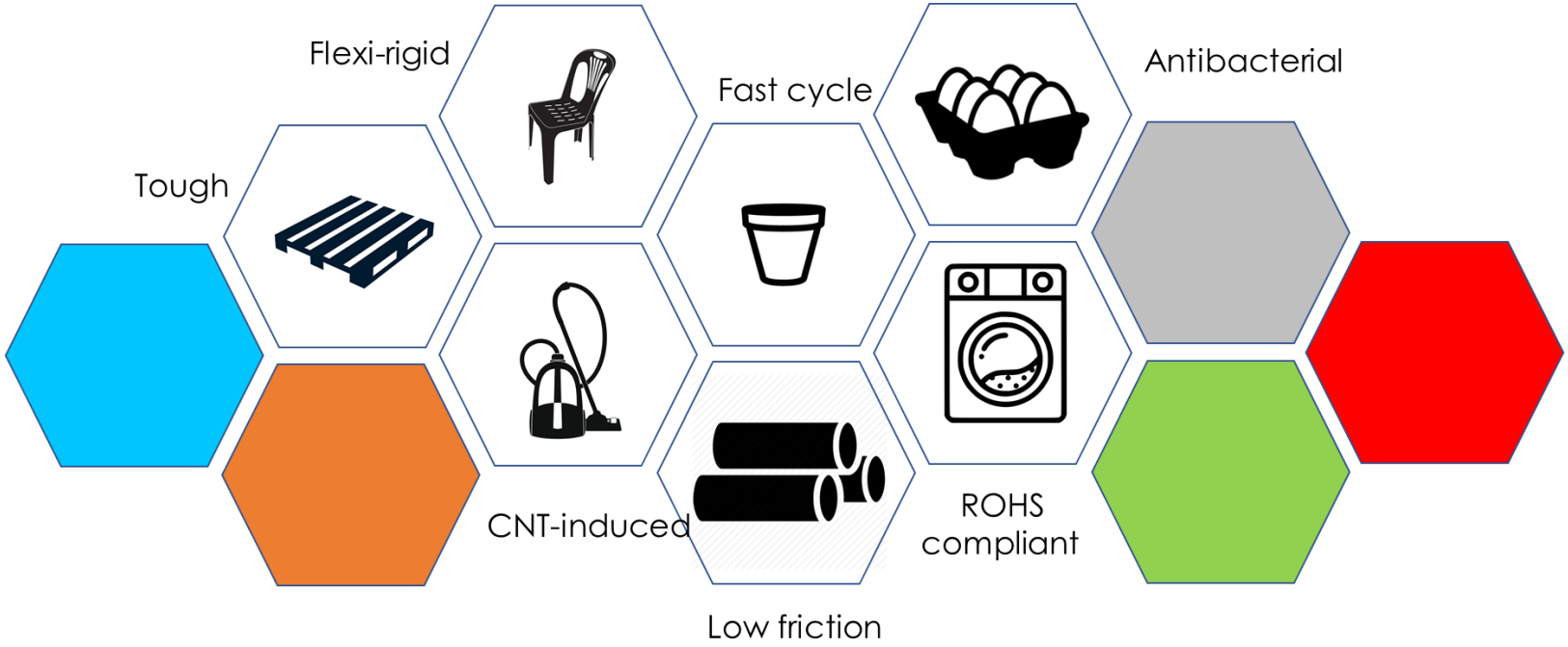
With over 18 years of network built across Malaysia

28,000 accounts of informal community of plastic suppliers

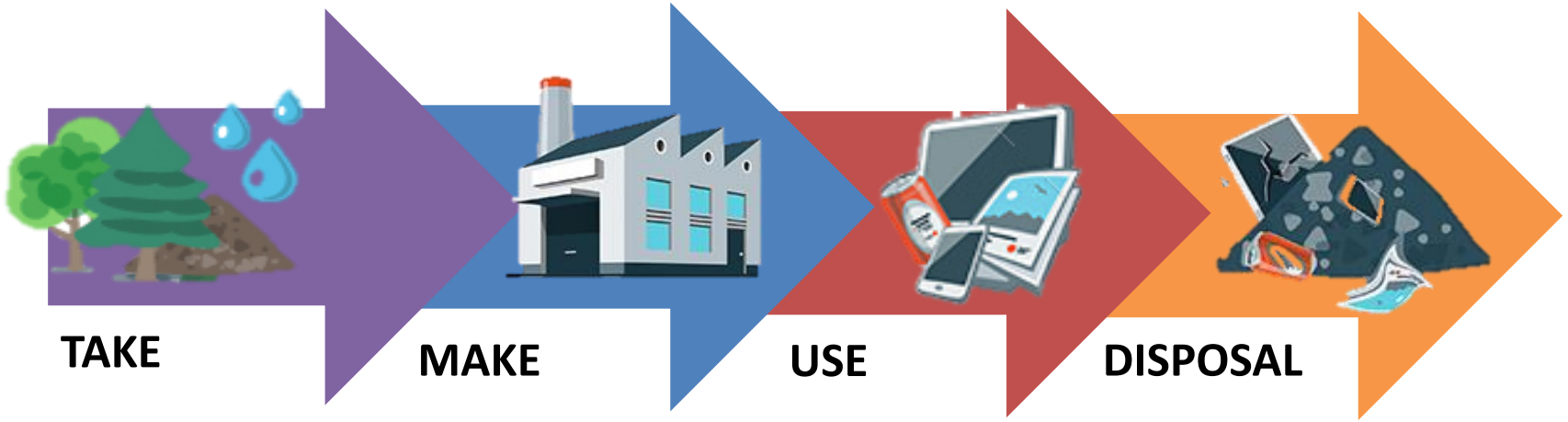
Having 3 collection yards in Kuala Lumpur, Johor Bahru & Penang for easy access for suppliers and walk-in customers



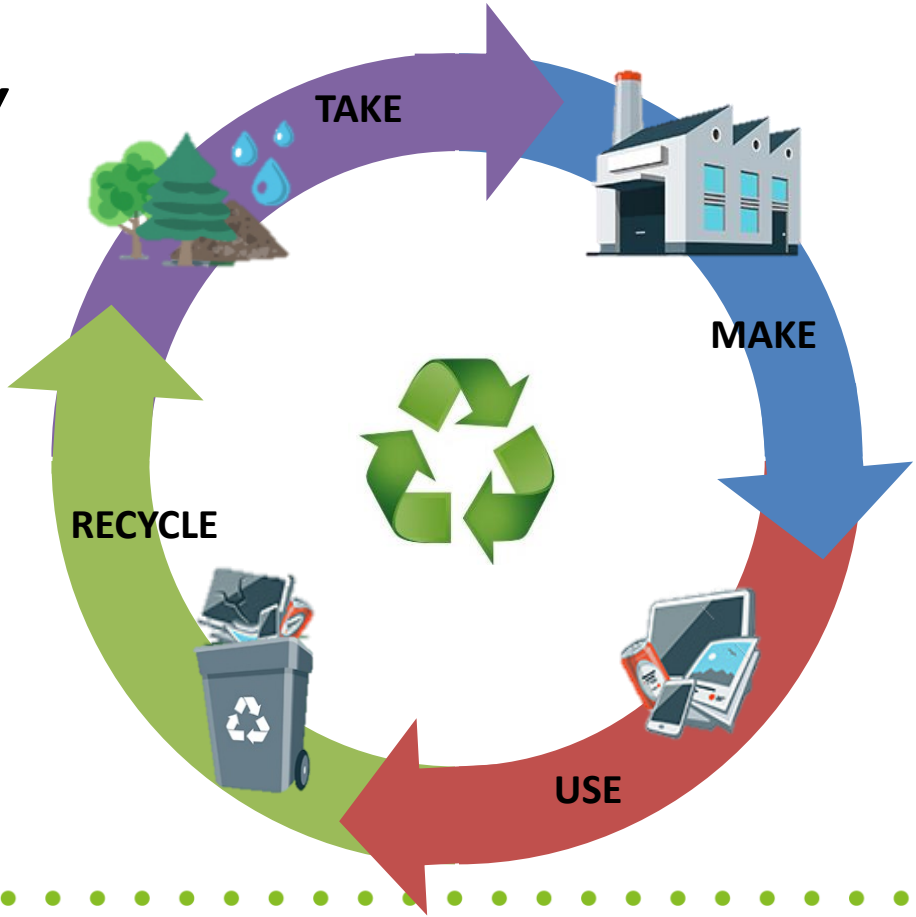
HHI ‘Smart Plastic’ Portfolio



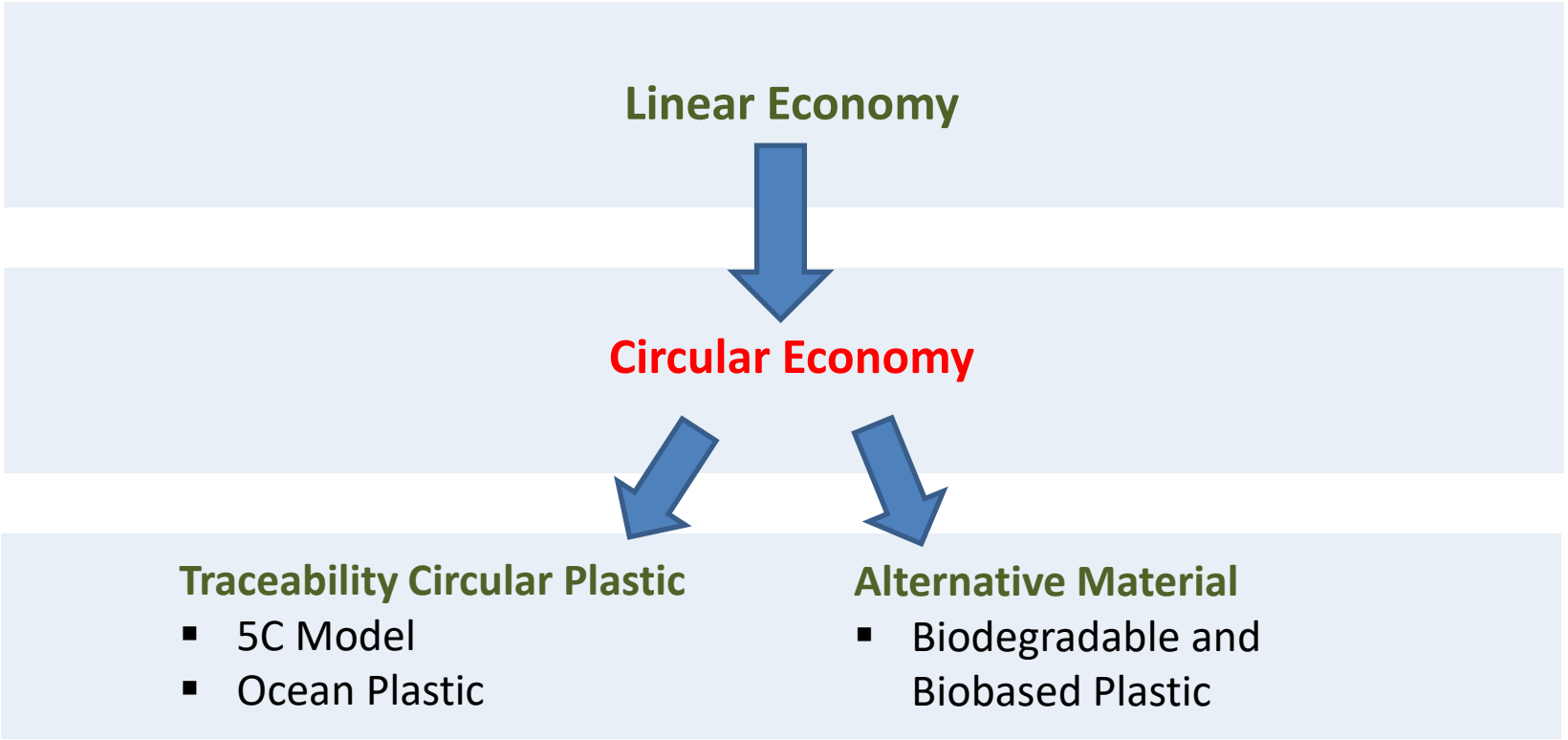
LINEAR ECONOMY



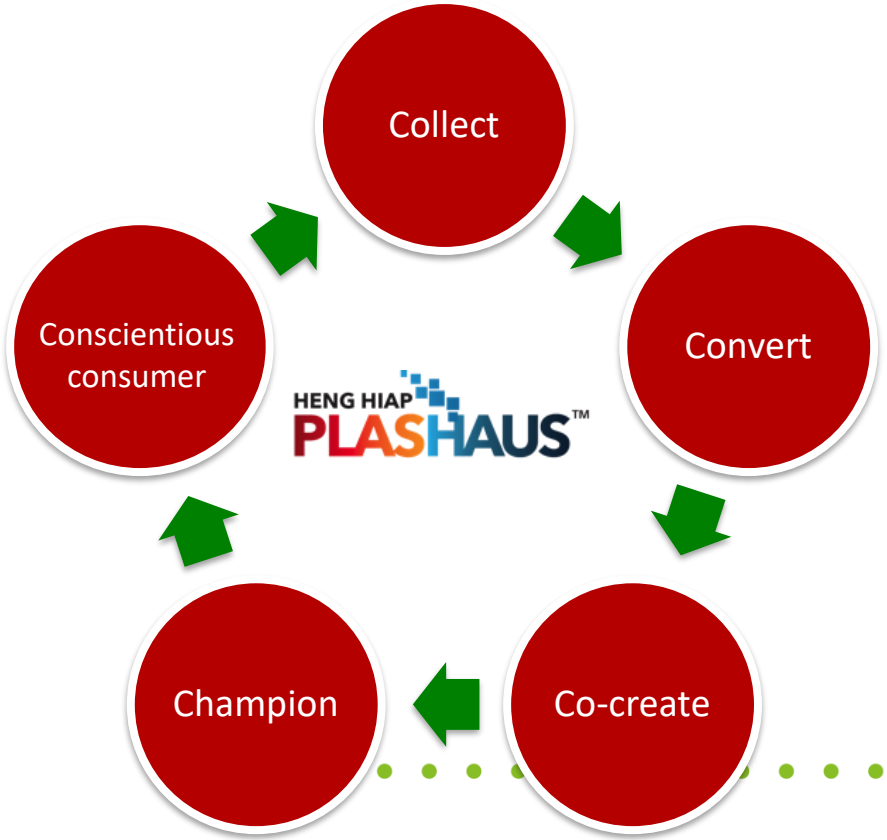
CIRCULAR ECONOMY



Collaboration for Sustainability



The PLASHAUS Circular Economy



- Ocean-bound plastics collected by HHI are getting a second life by transforming the waste into plastic chairs.
- In collaboration with Plantation Company, HHI developed technology to upcycle discarded fertiliser bags into plastic chairs.

OCEAN PLASTIC Traceability

- Scrap plastic collectors whose territories have ocean-bound plastic are included in the Heng Hiap traceability program
- Supply chain of such plastic is tracked-and-traced all the way back to the Heng Hiap factory
- Chain of custody is fully qualified, verified and certified by Control Union

Certified by multiple organization

HAW HAMBURG Coordinator

Presented by: Dr. Jelena Barbir
(Lead Project Manager)

BIO-PLASTICS EUROPE

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BIO-PLASTICS EUROPE project website: www.bioplasticseurope.eu

BIO-PLASTICS EUROPE

Developing and Implementing Sustainability-Based Solutions for Bio-Based Plastic Production and Use to Preserve Land and Sea Environmental Quality in Europe

October 2019 – September 2023

Project kicked-off in October 2019

HAW Hamburg

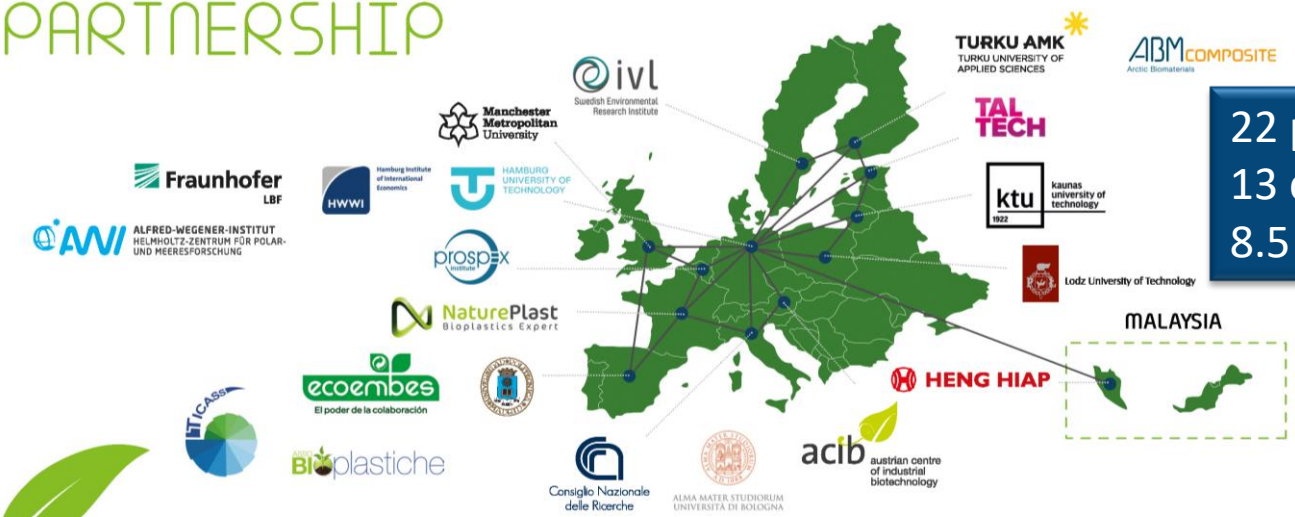
Prof. Walter Leal
Project Coordinator

Our Team

Ms. Silke Kuehl	Dr. Jelena Barbir	Ms. Cintia Nunes	Ms. Franziska Wolf	Ms. Caroline Paul	Ms. Liza Tuladhar	Ms. Maren Fendt	Ms. Marie Hornbogen
							
Financial Officer	Lead Project Manager	Project Manager	Senior Project Manager	Student Assistant	Student Assistant	Student Assistant	Student Assistant

BIO PLASTICS EUROPE

PARTNERSHIP



22 partners
13 countries
8.5 million Euros

CONTACT INFO

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SCAN ME

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BIO PLASTICS EUROPE

The main objective:

To develop sustainable strategies and solutions for bio-based plastic products, as well as the to develop approaches focused on circular innovation for the whole bioplastics system. These may be deployed to support policy-making, innovation and technology transfer.

WP1: Ethics

WP2: Project Management

WP3: Identification and tests of innovative product design

WP4: Plastic waste collection, recycling, and littering

WP5: Pre-normative research and field tests

WP6: Bio-based plastic safety components

WP7: Replication, policy-making, capacity-building and upscaling

WP8: Environmental and economic assessments of product life cycles and business models

WP9: Information, communication and dissemination of the results

BIO-PLASTICS EUROPE

Pushes towards circular economy

- **WP3** Identification and test of innovative product design
- **WP4** Plastic waste collection, recycling and littering
- **WP5** Prenormative research and field tests
- **WP6** Health and environmental safety
- **WP7** Replication, policy-making, capacity-building and upscaling
- **WP8** Life cycle assessment environmental and economic
- **WP9** Information, communication, and dissemination of results

HAW HAMBURG

EXPECTED RESULTS

FOCUS
Cutlery, Soft and Rigid Packaging,

Agricultural Mulch Film, Toys and Aquatic Materials

INNOVATIVE MATERIALS
to foster and encourage deployment of innovative bio-based and biodegradable materials

STAKEHOLDERS ENGAGEMENT
to ensure strong commitment of producers, politicians, industrial and private consumers

BUSINESS MODELS
to experiment with innovative business models by incorporating circularity and sustainability
to maximize the value of materials along the entire value chain

SAFETY PROTOCOLS
to ensure the safe use and end-of-life management on innovative bio-based plastics

Where we stand now….

Within the BIO-PLASTICS EUROPE project, the following end-products are experimented:

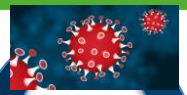
- **PACKAGING (rigid and flexible)**
- **TOYS**
- **AGRICULTURAL MULCH FILM**
- **CUTLERY**
- **AQUATIC MATERIALS: geo-membrane, fishing baits, fishing cradles**

First group of 5 materials developed

5 MATERIALS:
The materials under investigation are:

1. **BPE-FP-PBS**
2. **BPE-RP-PLA**
3. **BPE-T-PHBV**
4. **BPE-AMF-PLA**
5. **BPE-C-PLA**

From this list mainly PLA is already commercially in use and well available according to very recent application notes from various companies.



SENT FOR LABORATORY AND FIELD TESTS

- **Samples prepared-received**
- **Test Protocols finished**
- **Tests started 1st of September**
- **First preliminary results obtained**

MODIFICATION of the materials after 1st round tests

2nd round of TESTS

12 ONLINE STAKEHOLDER PROMOTION EVENTS

September – December 2020

BIO PLASTICS EUROPE

2nd event 4th of November

LinkedIn: over 250 members
Preparing events
Foster communication
Share experience

17th February 2021- Companies

Connect cities
Preparing events
Exchange experience
Offer solutions

2nd event 15th of December

March 2021- WORKSHOP

BIO PLASTICS EUROPE

HAMBURG UNIVERSITY OF APPLIED SCIENCES

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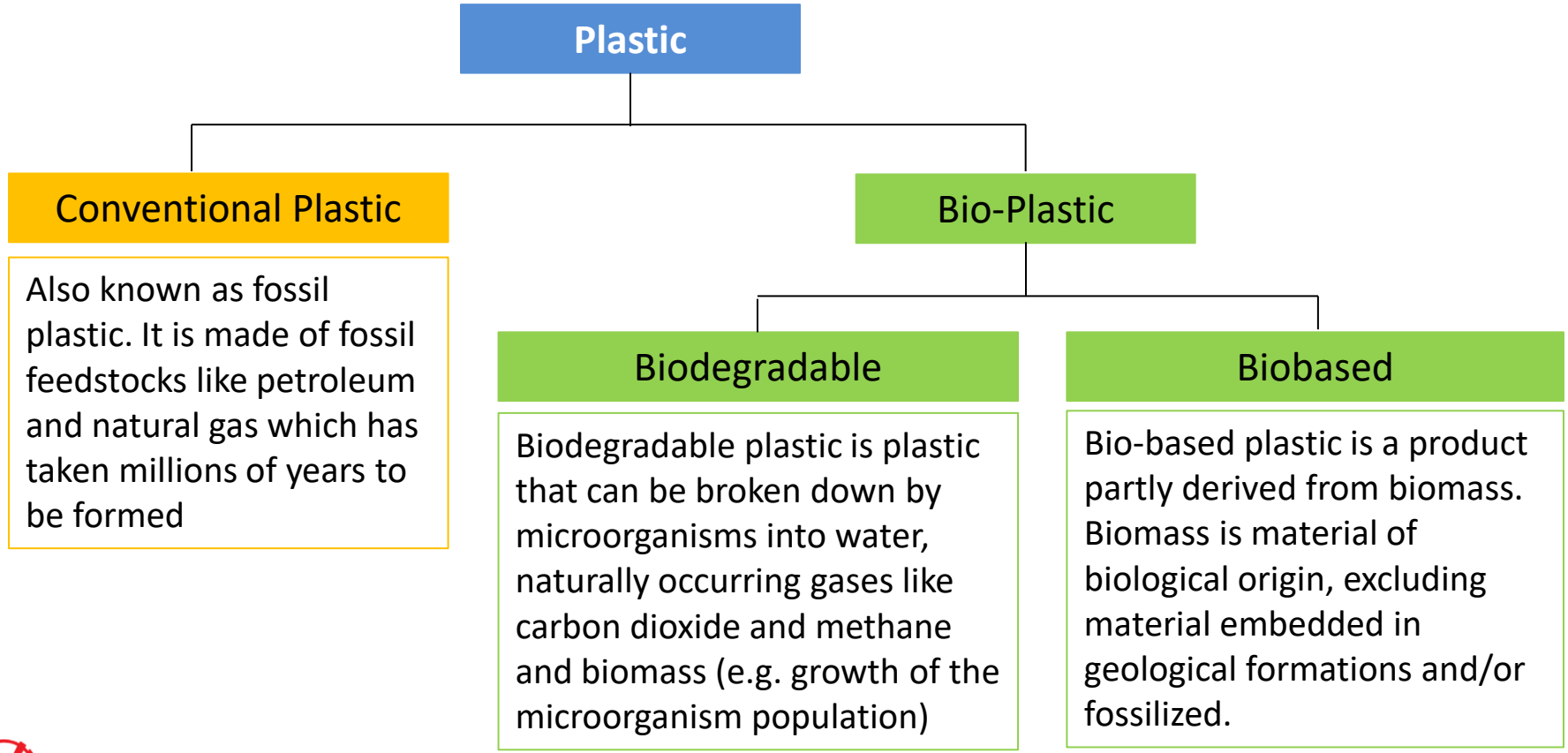
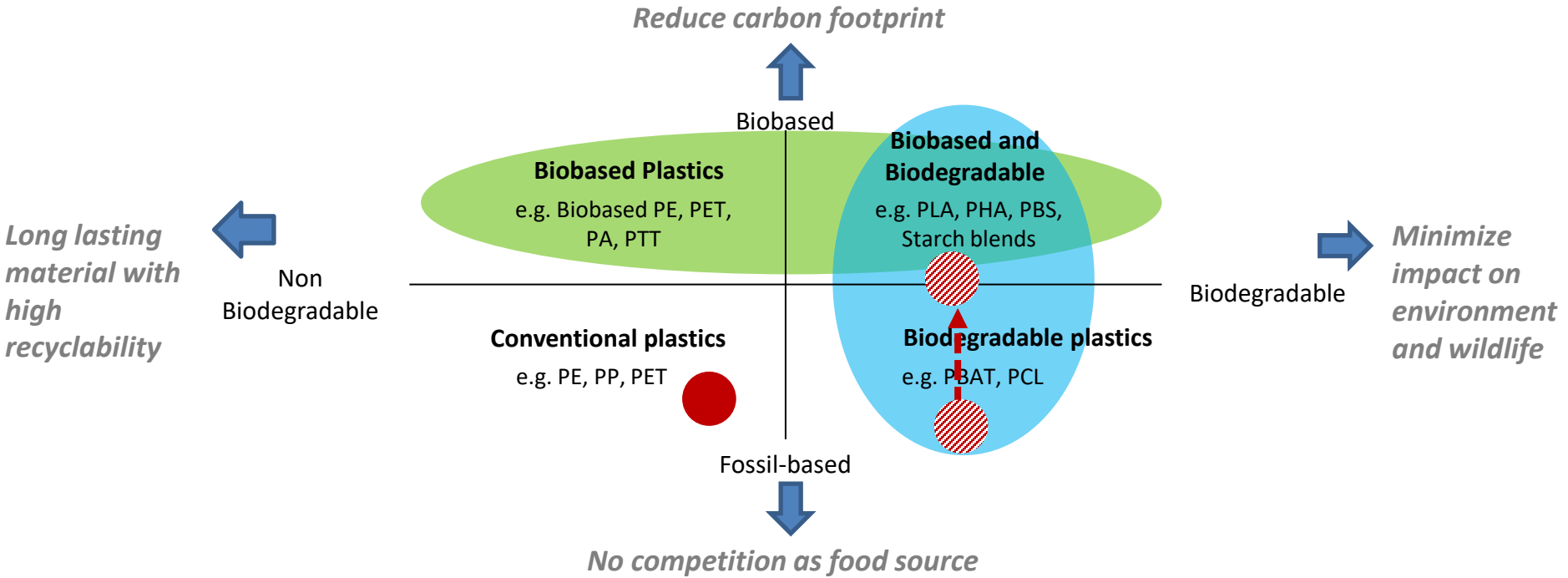
HAW Hamburg

Horizon 2020

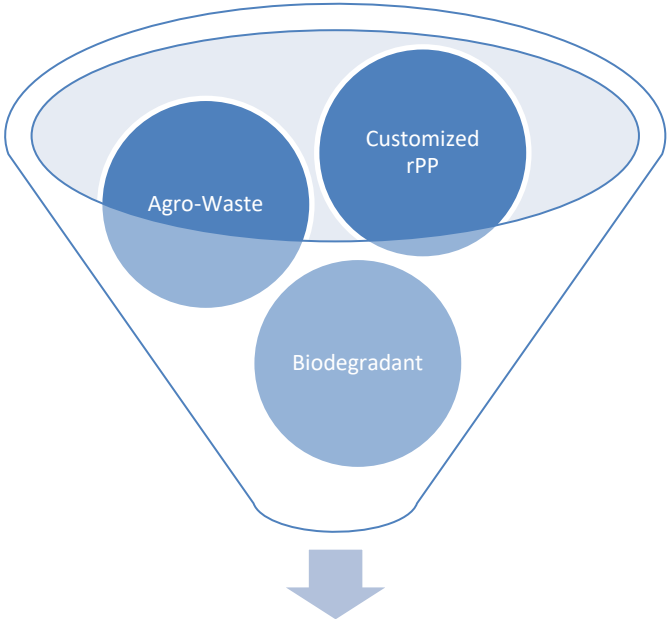
Current Realities of Biodegradable and Biobased Plastics in Circular Economy


Plastic
Conventional Plastic
Also known as fossil plastic. It is made of fossil feedstocks like petroleum and natural gas which has taken millions of years to be formed
Bio-Plastic
Biodegradable
Biodegradable plastic is plastic that can be broken down by microorganisms into water, naturally occurring gases like carbon dioxide and methane and biomass (e.g. growth of the microorganism population)
Biobased
Bio-based plastic is a product partly derived from biomass. Biomass is material of biological origin, excluding material embedded in geological formations and/or fossilized.

HHI's view of bioplastic landscape



HHI's Case Study



Biodegradable + Biobased rPP

Open Dialogue

Reframe/Rethink/Redesign the Future of Plastic

Build a Sustainable Plastic Economy

Heng Hiap Industries Sdn Bhd

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Twitter :https://twitter.com/home

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HENG HIAP

Horizon 2020

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(European Bioplastics Research & Networking