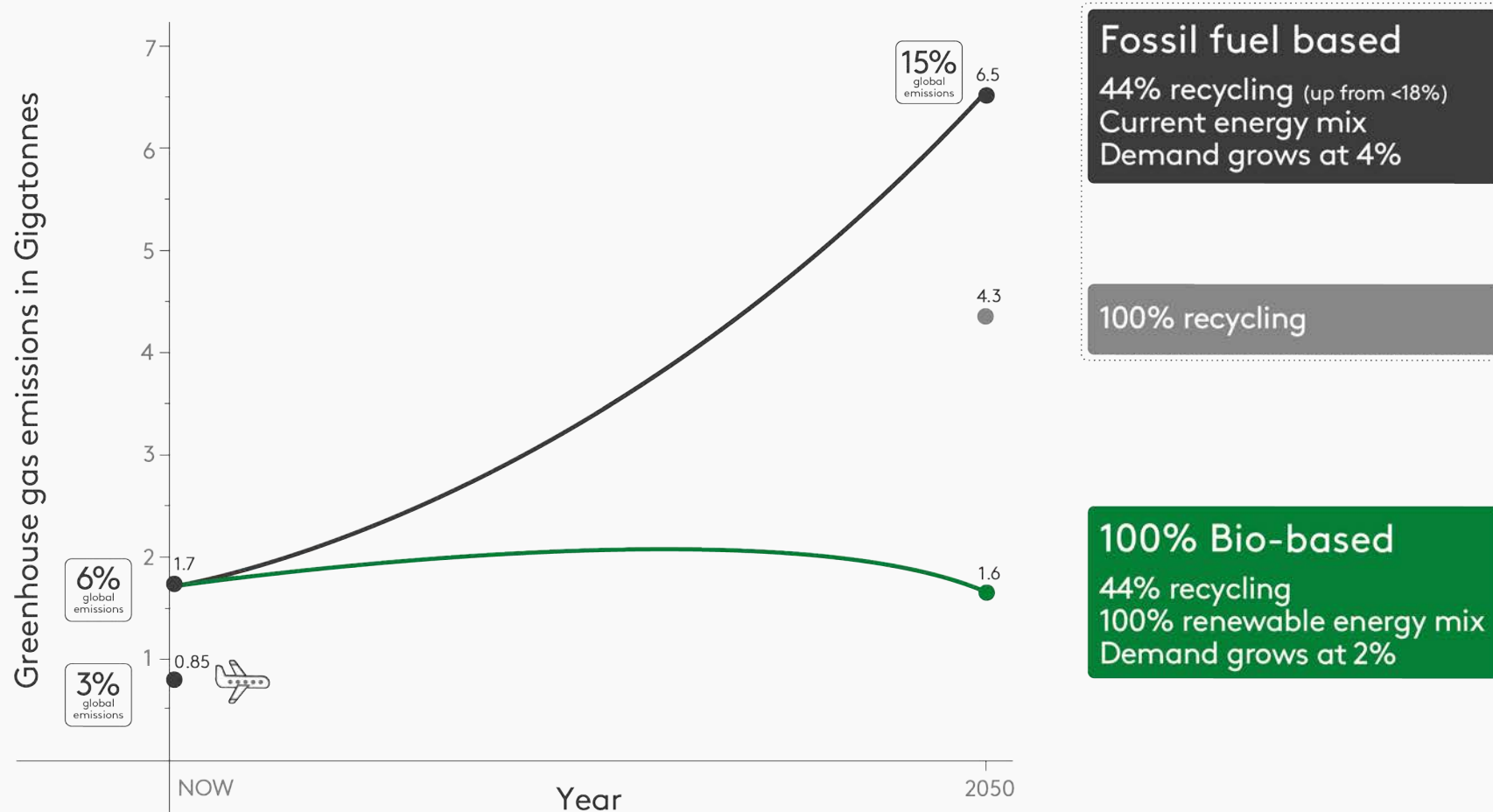




9<sup>th</sup> July 2019

Paul Mines, CEO

# The Plastic Life Cycle: Greenhouse Gas Emissions



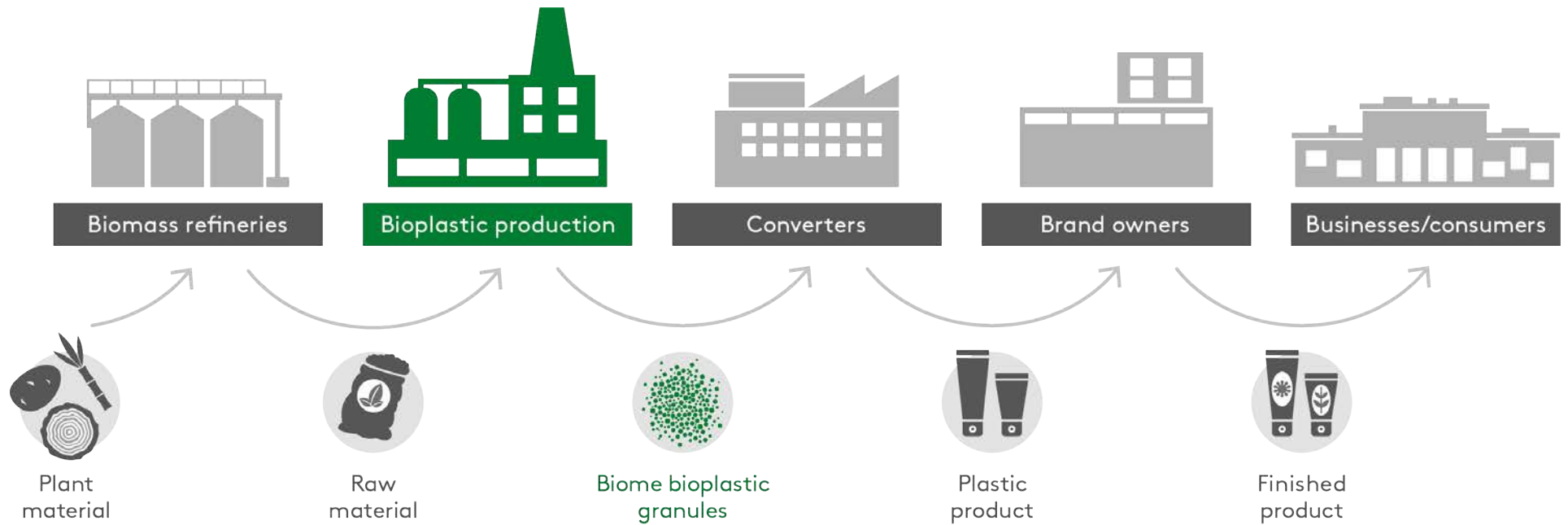
# Who we are

Biome designs and creates functional **bio-based** plastics, with a focus on **performance** and **compostability**.

- Listed on the AIM stock market
- 50 employees based in Southampton, UK
- Group turnover 2018 ca. £9 million and growing fast
- Serving a global customer base with design, manufacturing and technical support



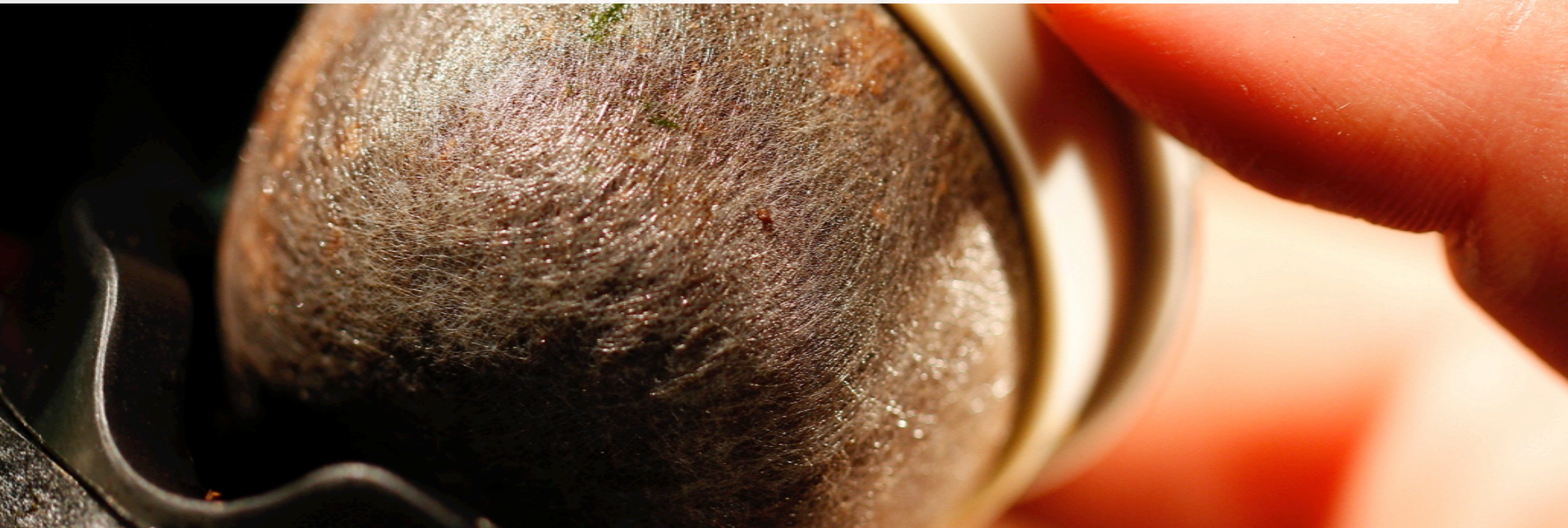
# What we do



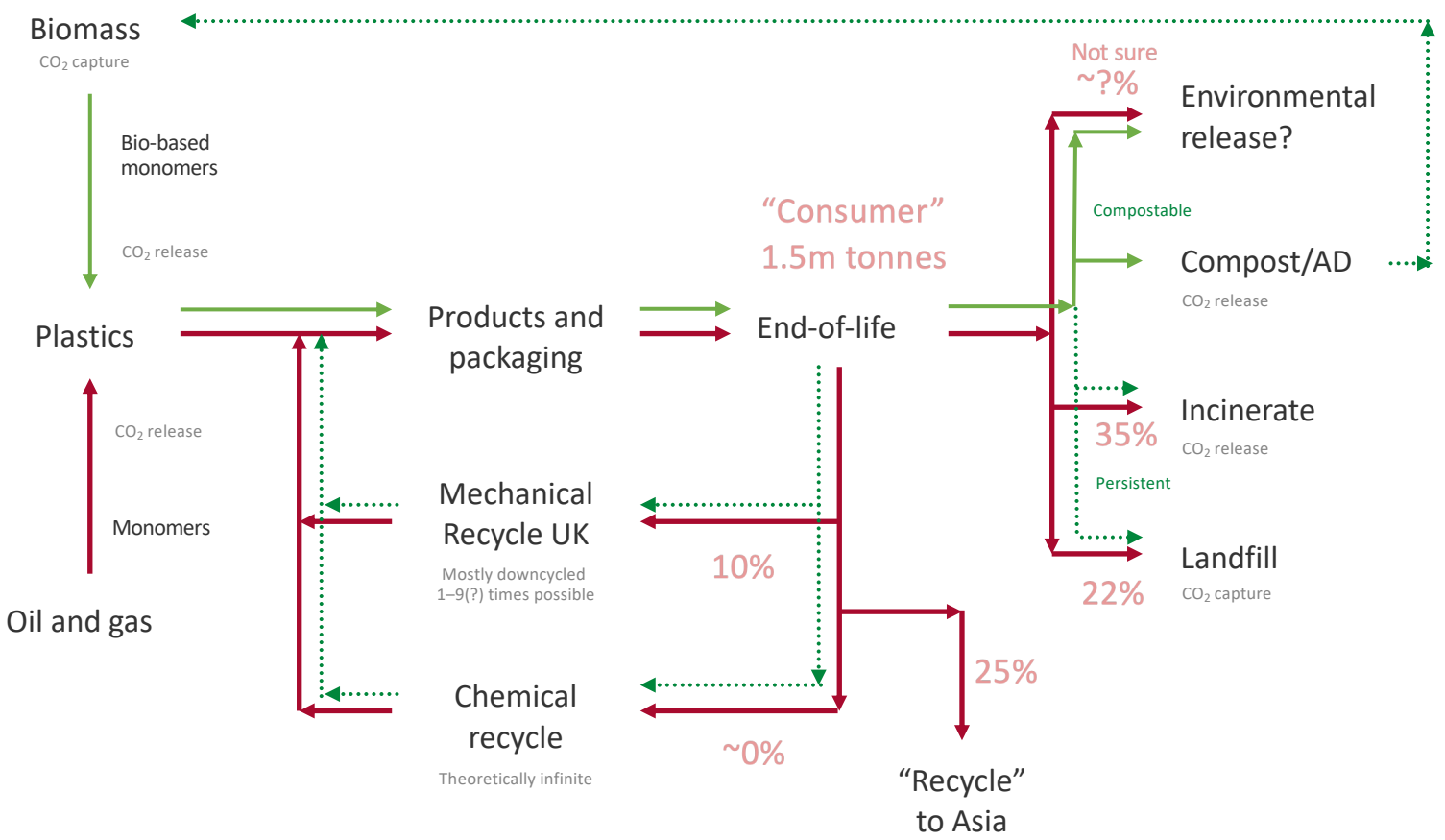
- Development of novel bioplastic granules and structures in UK
- Commercially manufacturing bioplastics in USA, Germany and UK (2019)

## Performance-focused

- Custom materials for demanding functional requirements such as high temperature performance, caps, hinges and valves
- Filmic structures with differentiating barrier and print performance
- Non-wovens/wovens with unique functional and compostable properties

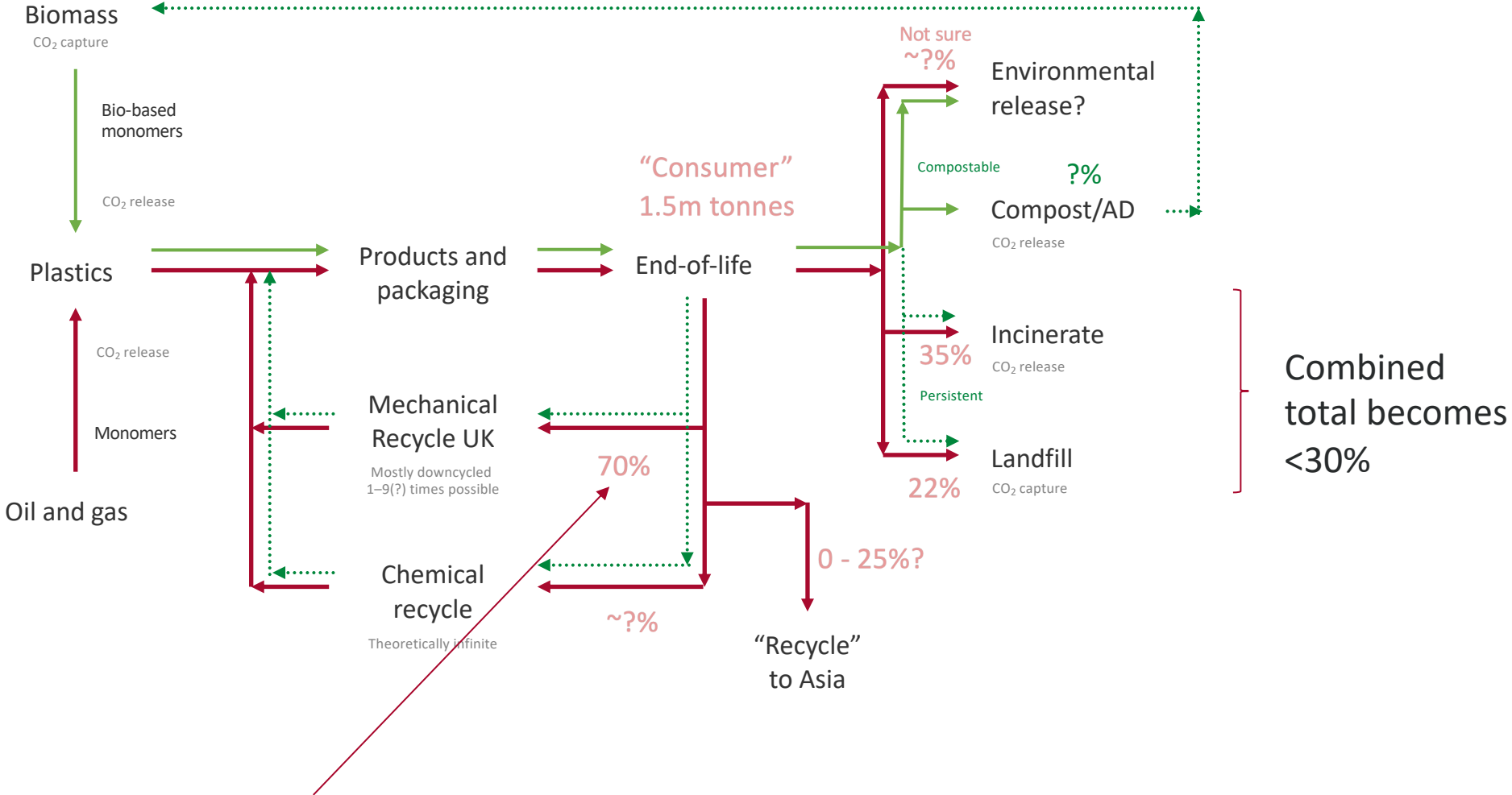


# Estimated UK plastics waste flows



# Envisaged UK plastics waste flows 2025 on 2017 data?

NB: analysis ignores changes to reusable



At 70% UKPP target recycling 150kt becomes 1050kt – 7 fold increase  
 If recycling remains at current level becomes 650kt – 4.5 fold increase

# So what's the opportunity: understanding the current UK market

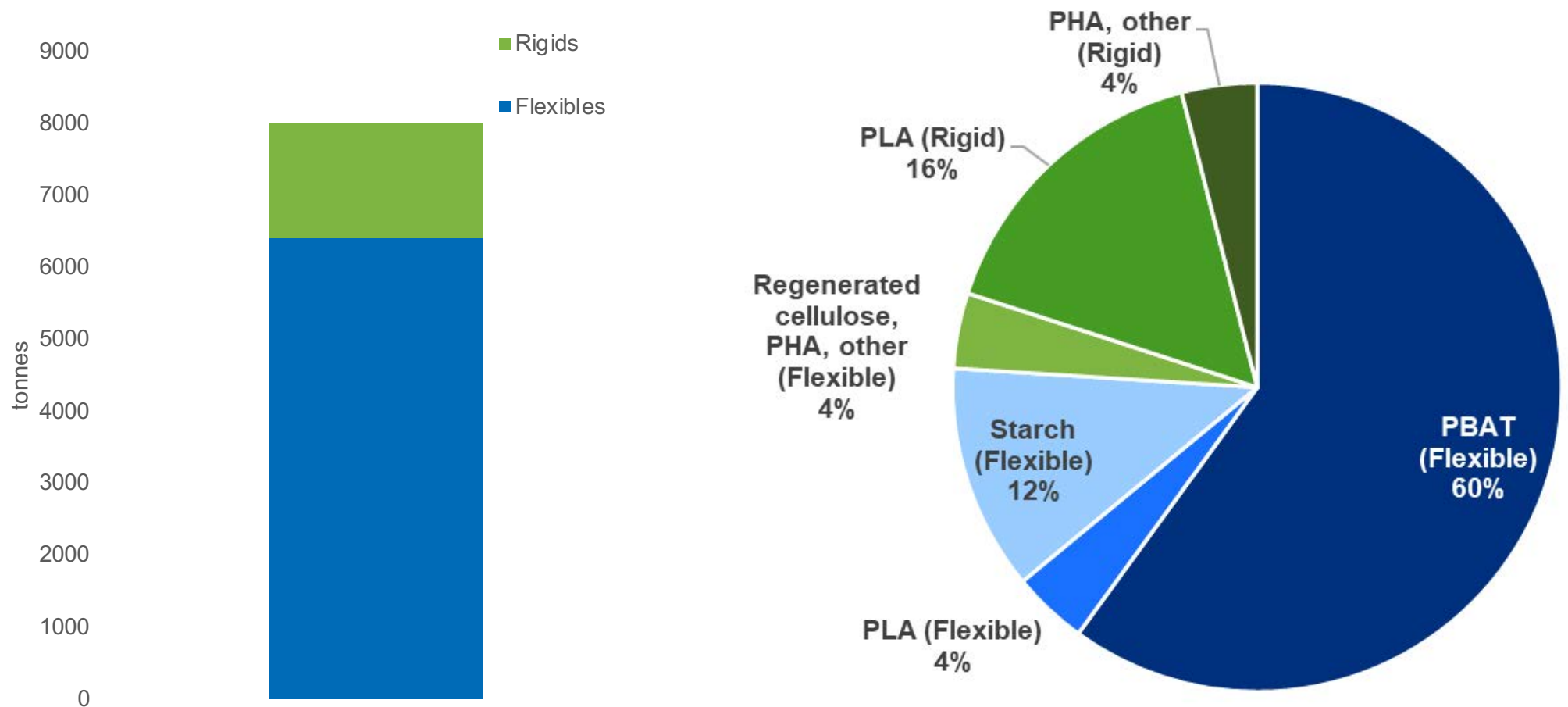
- In 2017, it was estimated that **2.361Mt** tonnes of plastic packaging was placed on the UK market in of which approximately **1.523Mt** (65%) is defined as consumer packaging.

Consumer plastic packaging tonnage by format and polymer (2017) (kt)									
	HDPE	LDPE	PE	PET	PP	PS	PVC	Other	Total
Film (exc. carrier bags)	71	110	21	28	110	2	9	17	368
<i>Carrier bags</i>	18	9							27
Bottles	268	0	1	347	17	0	0	0	633
PTTs	9	1	4	155	85	32	13	2	301
Other	55	23	1	40	76	3	2	0	200
<b>Total</b>	<b>403</b>	<b>134</b>	<b>27</b>	<b>570</b>	<b>288</b>	<b>37</b>	<b>24</b>	<b>19</b>	<b>1,529</b>





# Bioplastics placed on the UK market

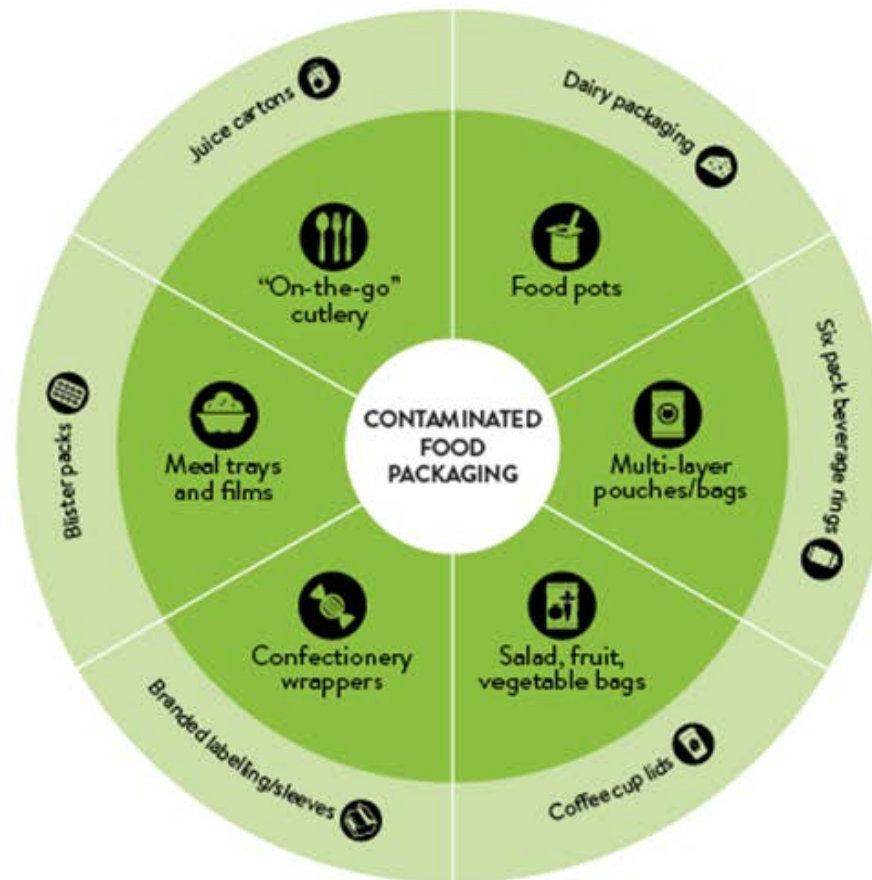
The current UK market for compostable bioplastics is estimated at approximately **8,000 tonnes** (+/- 1,000t).



# COMPOSTABLE PLASTIC PACKAGING TO REMOVE FOOD WASTE FROM HOUSEHOLD WASTE AND RECYCLING STREAMS

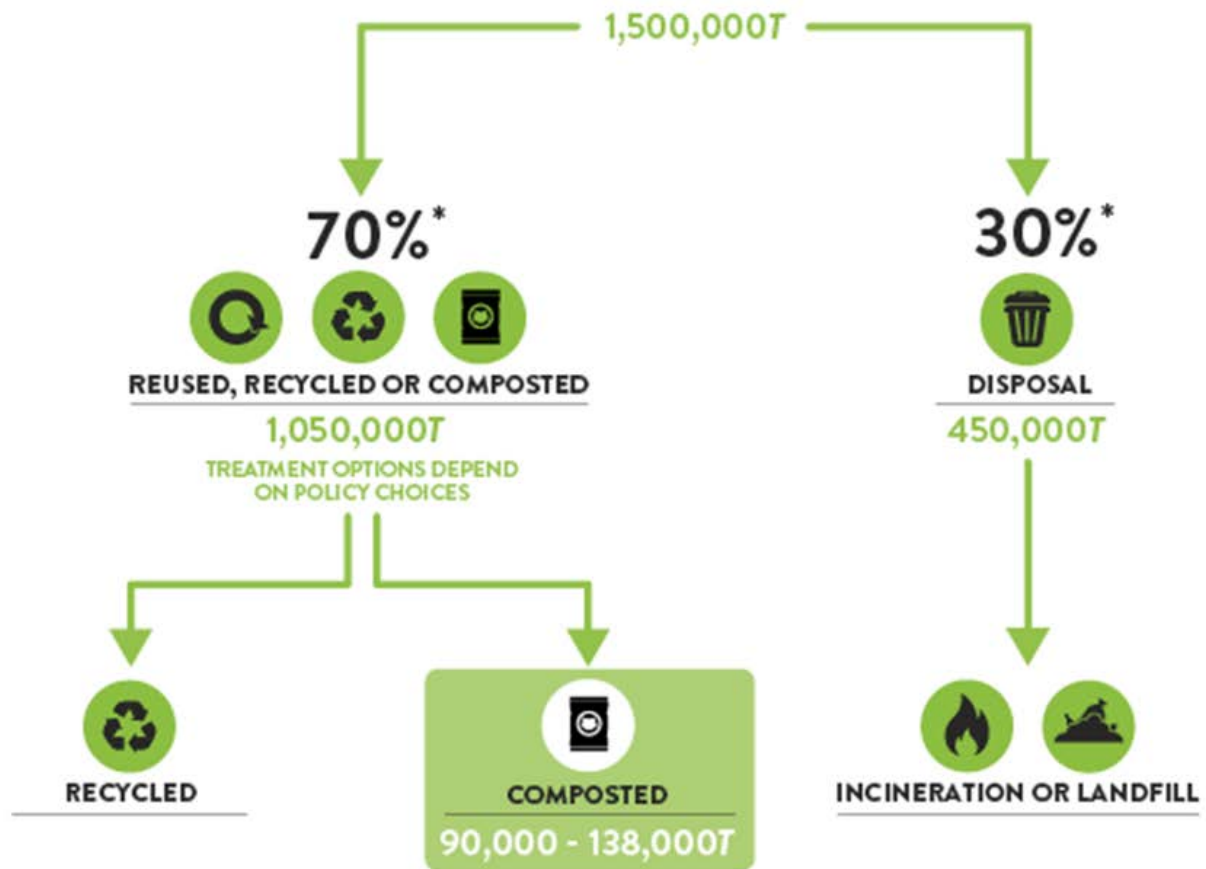
Traditional plastic packaging often becomes too contaminated with food waste to be recycled so is sent to landfill or for incineration. This is where substituting compostable plastic offers significant value.

-  Already available/available in the short term
-  Potential substitution/available in the medium term



This is a selection of compostable packaging substitution potentials. For the full assessment of plastic packaging applications by polymer type, see the Plastics in the Bioeconomy report.

# POTENTIAL FOR CONSUMER PLASTIC PACKAGING DISPOSAL IN 2025



T=Tonnes

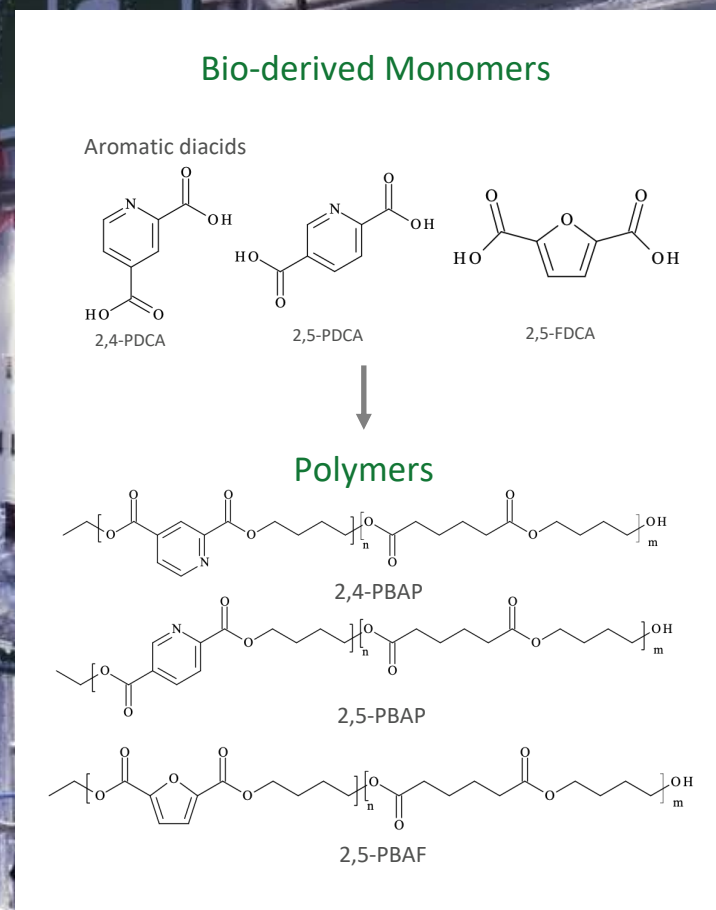
Amounts based on 2018 figures

\* Targets set by UK Plastics Pact (2018), to be achieved by 2025

© BBNet

# The future

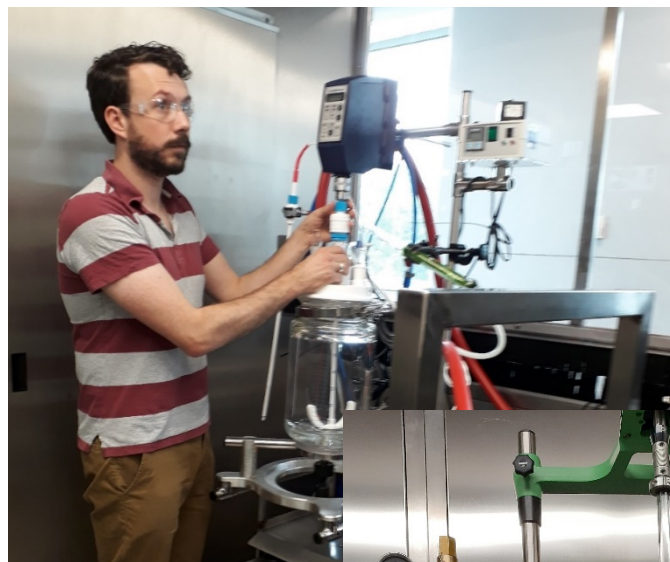
- Targeting industrial scale production of highly functional novel materials using engineered bacteria and enzymes
- A £6.5m programme over 6 years
- Enhancing the performance of aromatic polyesters and their bio-based building block monomers
- A 25-strong team, with partners including the Universities of Nottingham, Leeds, Liverpool and the Centre for Process Innovation (CPI)
- Scaling to kilograms of materials alongside commercial and technical testing



# Current scale

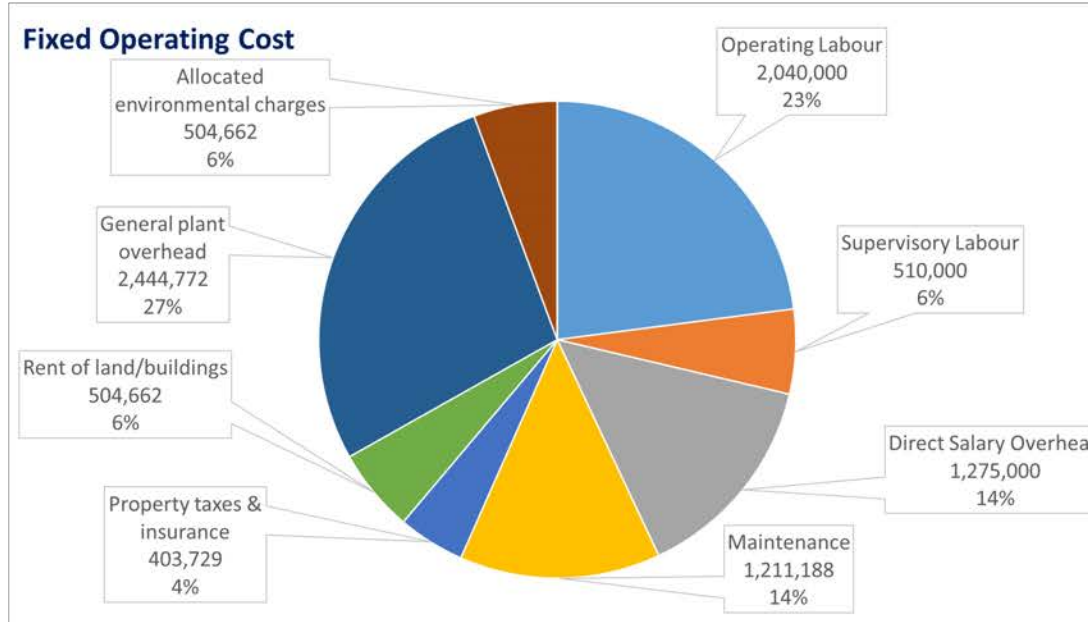
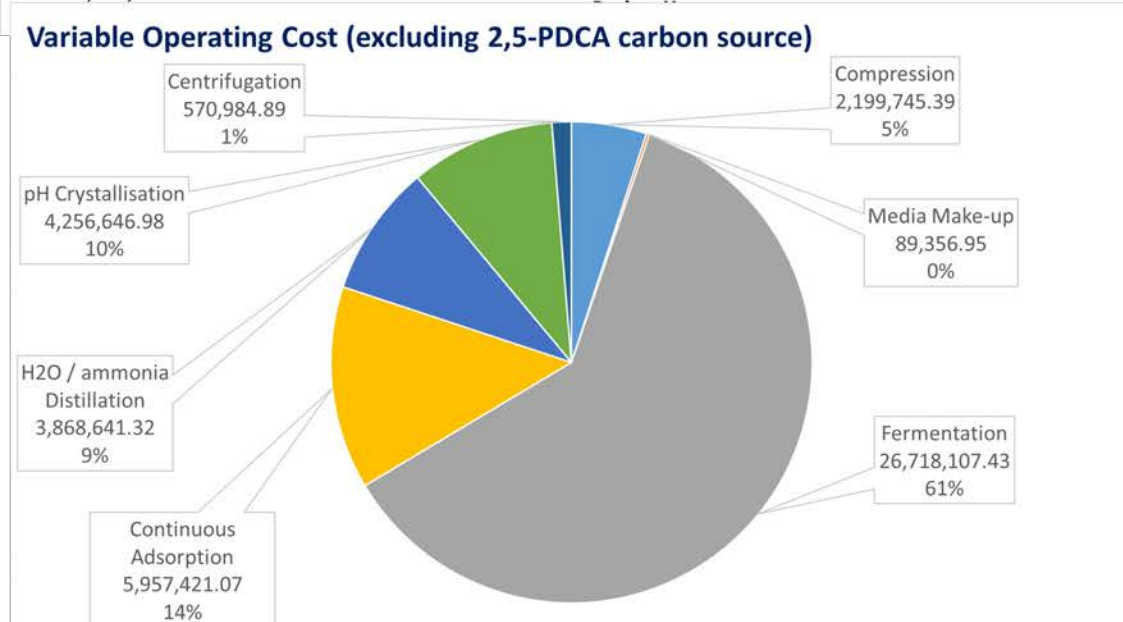
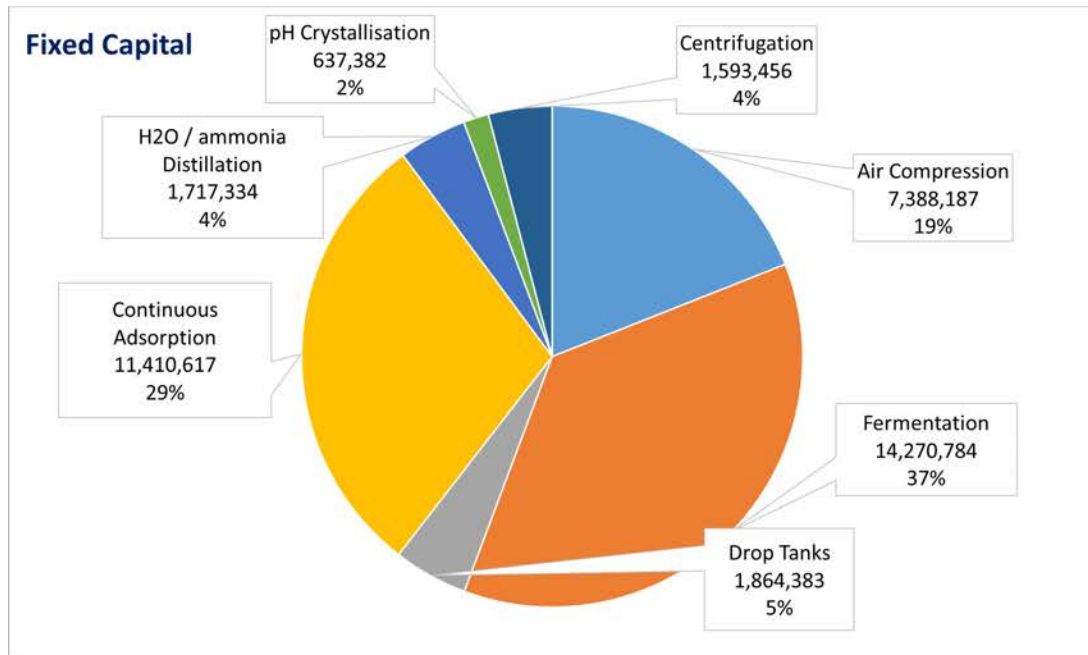
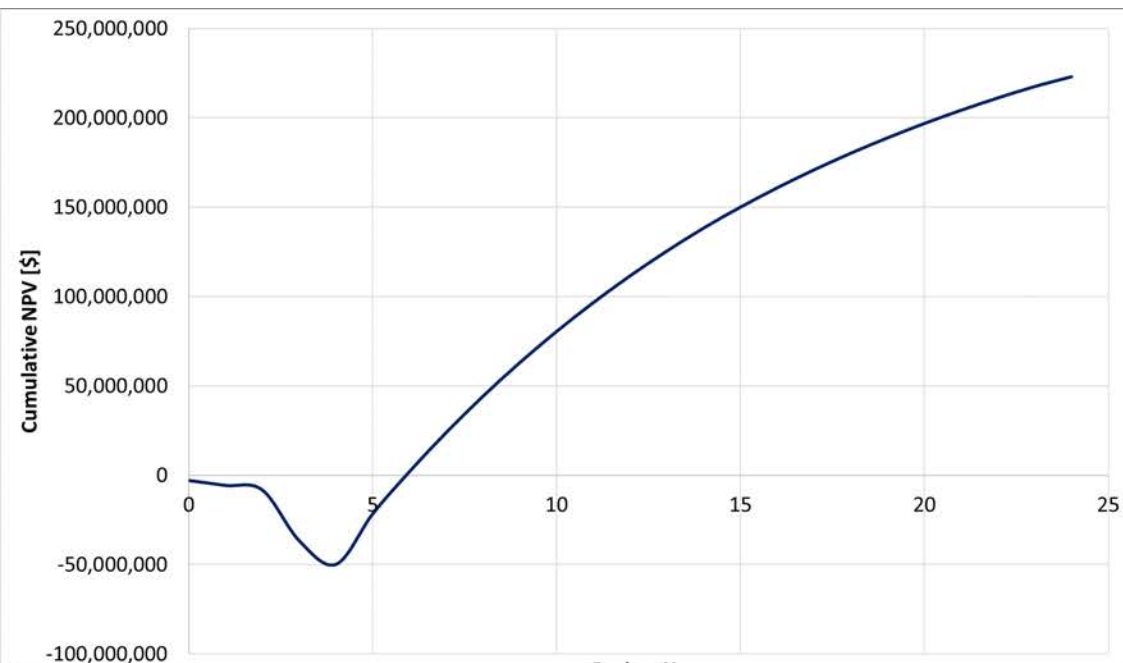


**Monomers  
(0.5kg - 1kg)**



**Polymers (1kg – 5kg)**

# Techno-economic analysis



# Thank you.

Website: [biomebioplastics.com](http://biomebioplastics.com)

Twitter: [@BiomePlastics](https://twitter.com/BiomePlastics)