



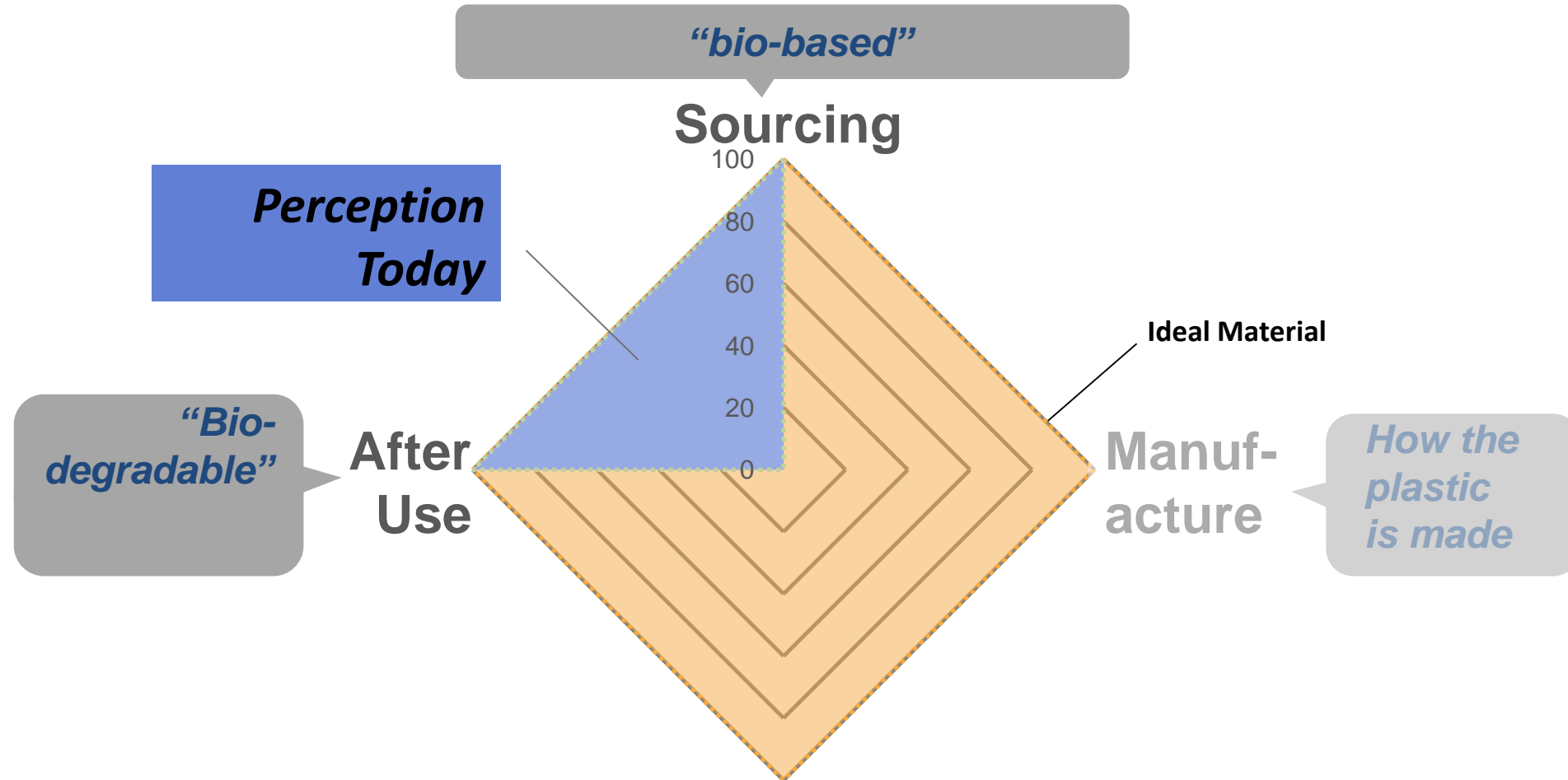
Ingeo PLA Applications

Ian Toh

Commercial Director, AP

June 28, 2019

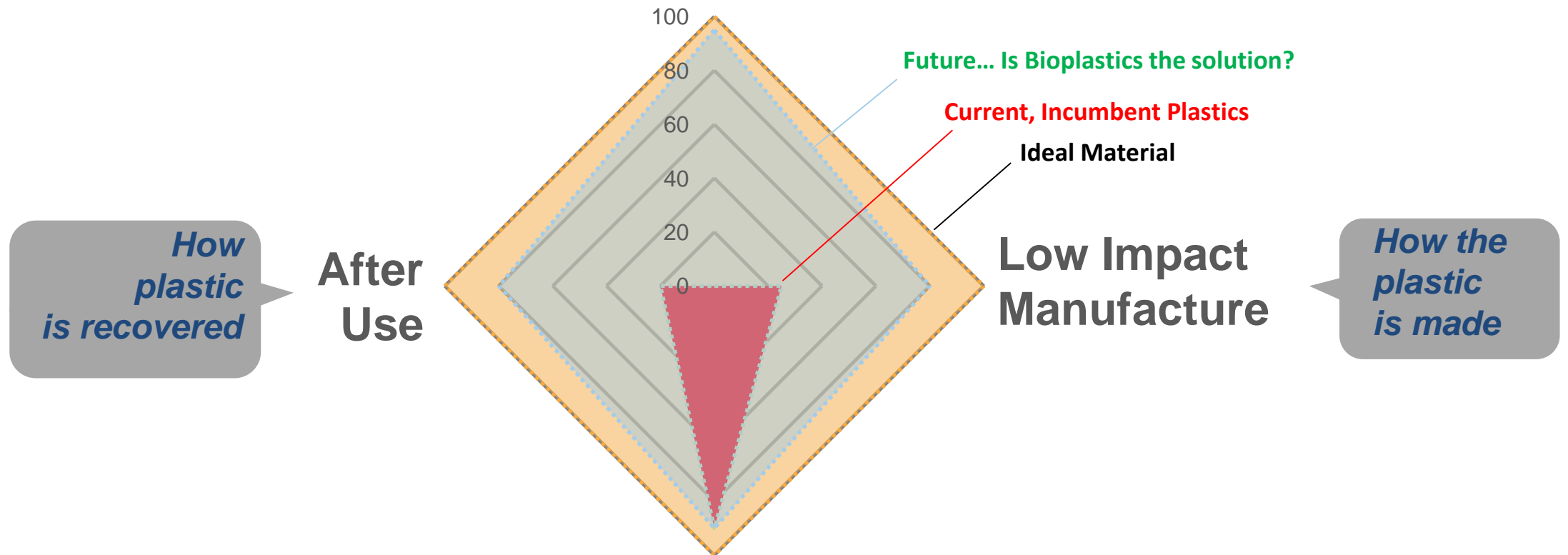
Bioplastics – until now – have only been seen as biobased, or “biodegradable”



The Plastics Industry is rethinking itself from a Circular Economy Perspective

What the plastic is made from...

Renewable Sourcing



Use

plastic characteristics - functionality and performance

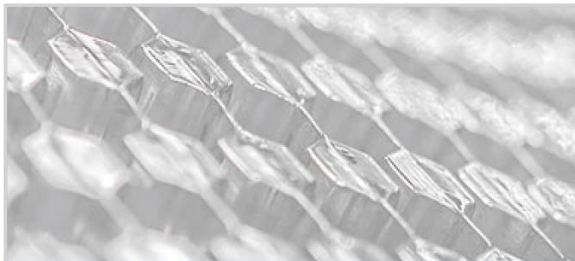
Ingeo in Use



3D PRINTING



BEAUTY AND HOUSEHOLD



BUILDING AND CONSTRUCTION



FOOD AND BEVERAGE
PACKAGING



ELECTRONICS AND APPLIANCES



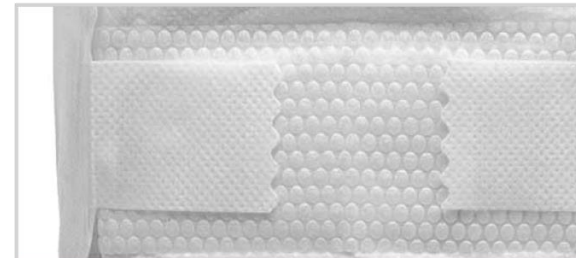
ADVANCED NONWOVENS FOR
FILTRATION & INFUSION



FOOD SERVICEWARE



LANDSCAPE AND AGRICULTURE



MEDICAL AND HYGIENE



PERFORMANCE CHEMICALS

Established Portfolio Of Certified Compostable Ingeo Products



Fully Functional, Compostable, Packaging

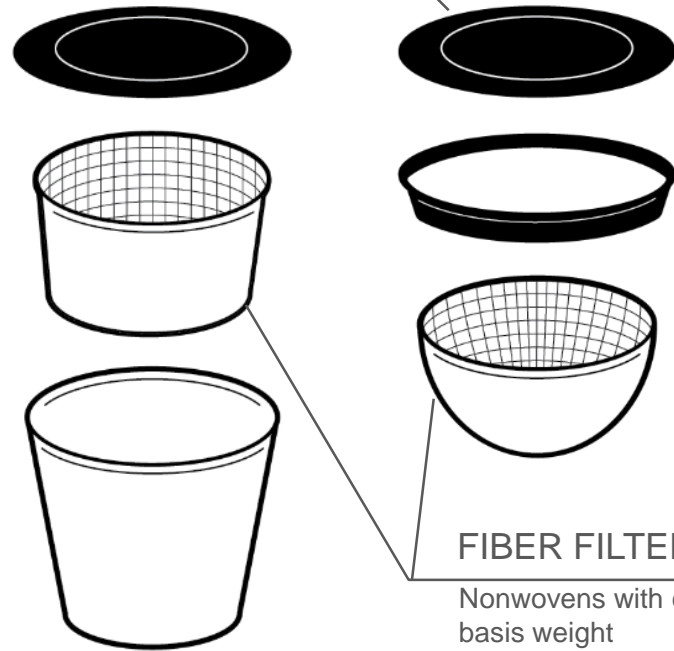


*designed for
organics recovery*

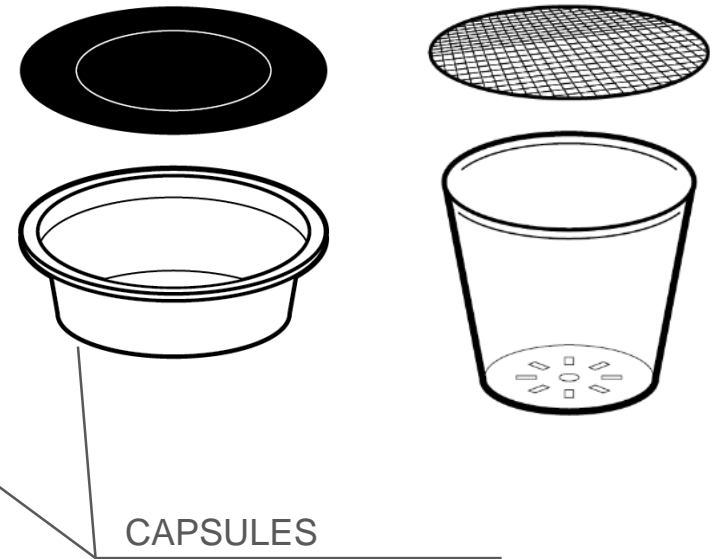
**The Composters want
their coffee grounds
back...**

We're designing functional Ingeo materials to perform in multitude of capsule designs & components

FILM LIDDING



FIBER LIDDING



CAPSULES

**For high & low pressure systems

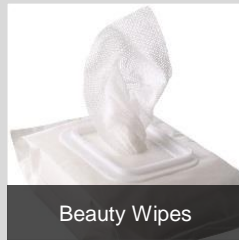
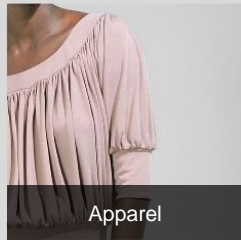
Compression molding

Thermoforming

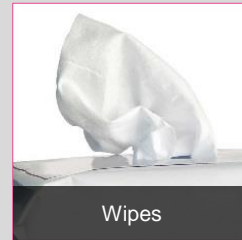
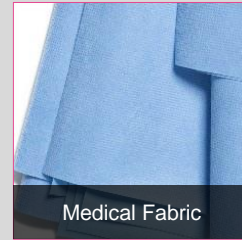
Injection Molding

Fibers Nonwoven Global Market Participation

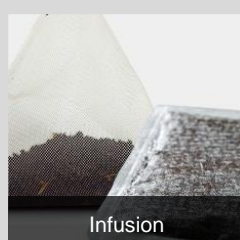
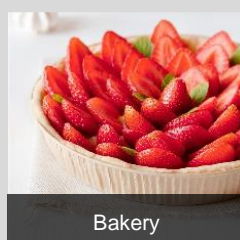
Beauty & Household



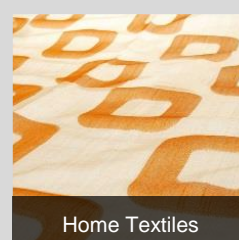
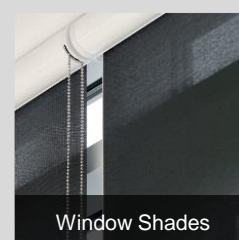
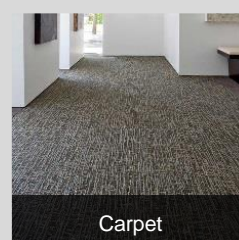
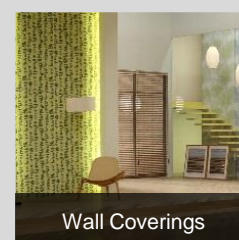
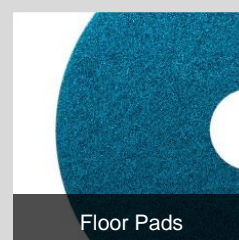
Medical & Hygiene



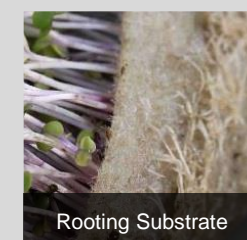
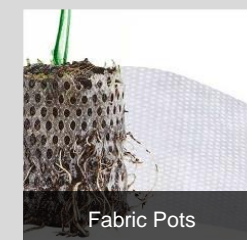
Food & Beverage



Building & Construction



Landscape & Agriculture



BRITAIN'S TEA HABIT HAS A PLASTIC PROBLEM

By Rosie Spinks | February 19, 2018

www.nonwovensnews.com

Converting the 'Cuppa'

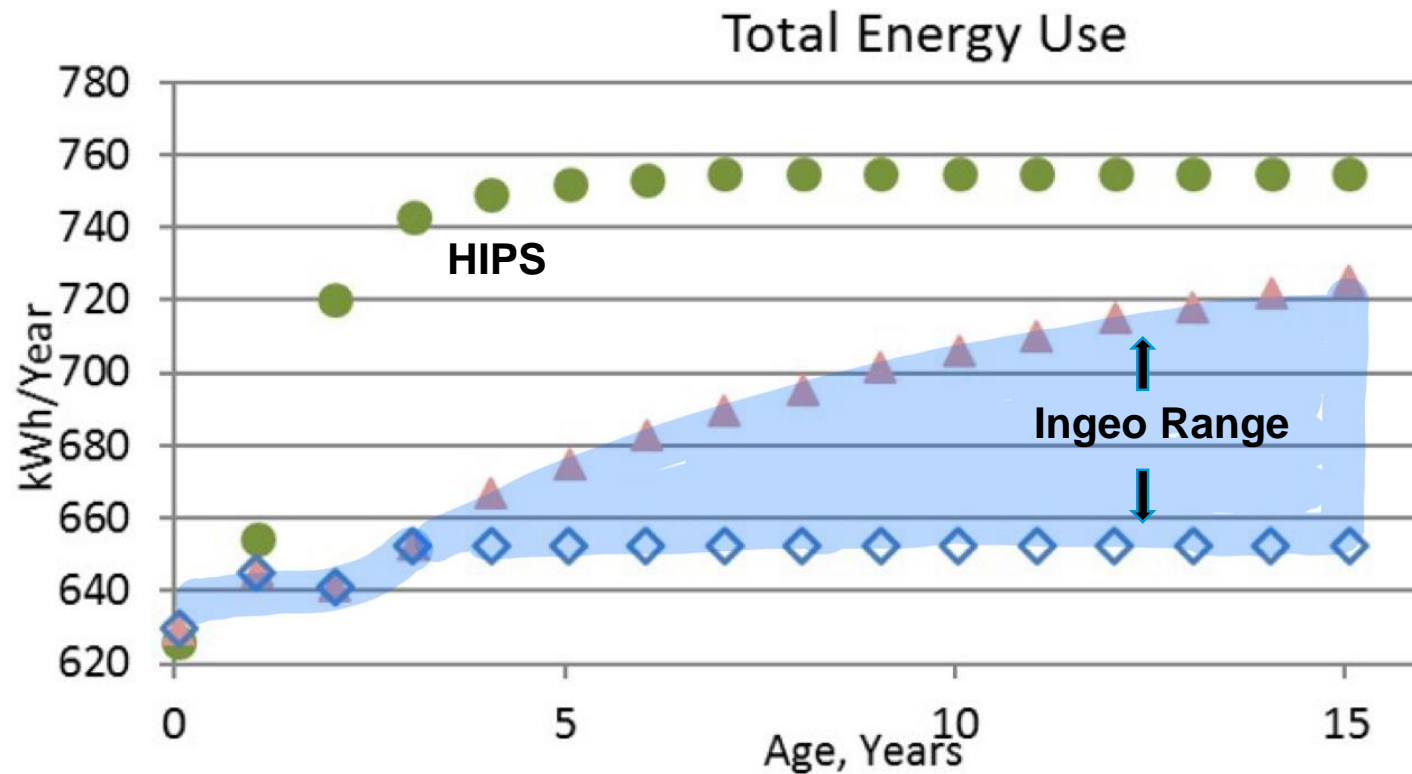
Consumers are putting the pressure on tea companies to make a simple sustainable switch.



In 2018... in UK
60 bn CUPS of tea annually



Comparative Energy use of Refrigerator-Freezer with HIPS vs Ingeo Liners



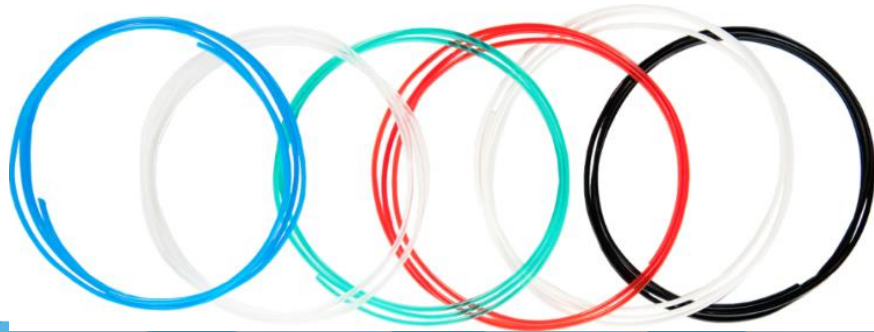
Collaboration with Oak Ridge National Lab, USA



3D Printing - New Material Innovation Fueling Wholly New Markets ...

Ingeo Performance in a (rapidly) emerging end market

- Low polymer thermal shrinkage means high resolution printing of the most complex parts
- Strong Ingeo fusing performance means it's easy to use and performs well on most prints
- Low Ingeo melt point means safer, lower temperature printing.
- Very low emissions with Ingeo means no unpleasant odors



October 29, 2018, the Ellen MacArthur Foundation announced that NatureWorks, along with other global companies, have signed the New Plastics Economy Global Commitment.

NatureWorks committed to the following goals in support of sustainable agriculture for bioplastics:



2019

60% of our feedstock will be certified as sustainably and responsibly managed via ISCC PLUS.

2020

100% of our feedstock will be certified as sustainably and responsibly managed via ISCC PLUS.

2025

100% of new feedstocks for additional manufacturing capacity will be certified as sustainably and responsibly managed via an independent, 3rd party program.



Naturally advanced materials made from locally abundant and sustainable natural resources

Ian Toh

Mobile: +65-8399 8498

ian_toh@natureworkspla.com



@natureworks



Like us on Facebook



Connect with us on LinkedIn



www.natureworksllc.com