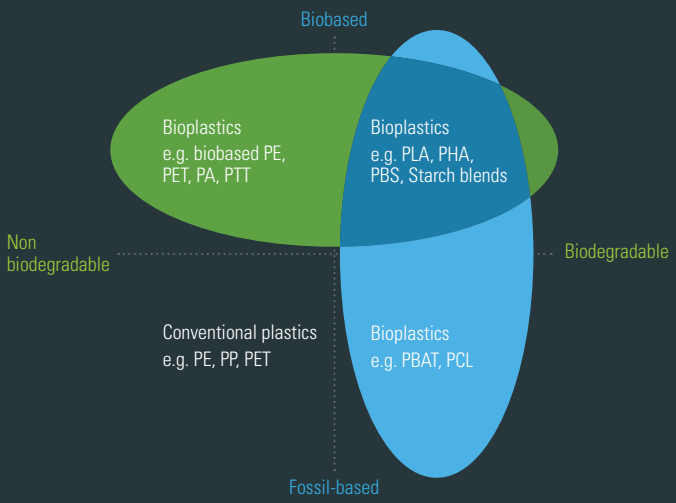
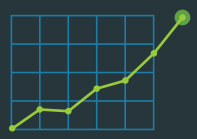
BIOPLASTICS. BIOBASED OR BIODEGRADABLE?

The term ‘bioplastics’ describes plastics that are either biobased, biodegradable or feature both properties.

Biobased plastics are either partially or fully derived from renewable sources, such as algae, corn or sugarcane.

Biodegradable plastics are those that degrade under certain conditions into natural substances such as carbon dioxide, methane and water through biodegradation. This is a chemical process caused by micro-organisms in the environment, and thus the process depends on factors such as location and temperature.





6.1 million tonnes

The market for Bioplastics is expected to grow from 4.2 million tonnes in 2016 to 6.1 million tonnes by 2021. Although this still only represents 1-2% of global plastic produced*

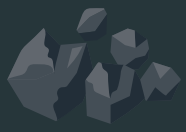
*European Bioplastics, nova-institute (2016)

39%

of bioplastics are used in plastic packaging. Other uses include in the automotive, agricultural, textiles and building sectors.

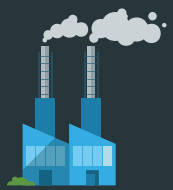
BENEFITS OF BIOPLASTICS

Reduced dependency on fossil fuels that are a limited resource.



Biodegradable materials may compost in gardens or need to be industrially degraded offering an alternative end of life to landfill. This needs to be communicated clearly to consumers so that biodegradable materials do not contaminate plastic recycling streams.

Bioplastics can have significantly reduce CO_2e emissions associated with raw materials when comparing with fossil fuel based plastics.



Biobased plastics offer a broad range of end-of-life options as many can still be recycled or reused.

WHAT IS RPCs POSITION ON BIOPLASTICS?

RPC considers the use of a bioplastics where such materials are economically viable, available in suitable, reliable quantities and offer the same or increased performance properties for the specified packaging. If these conditions are met or if a customer specifically requests bioplastic material use then RPC will work with supply chain partners to develop such products.

RPC Promens has worked with using sugar cane resources to produce the Green Politaner™, which is a biobased product made from over 80% renewable resources.

RPC Bebo designed these compostable B2nature™ coffee capsules that will reduce to a minor amount of material after 12 weeks of industrial composting. The capsule still retains comparable strength and durability to protect the contents despite the alternative material makeup.

RPC Promens Consumer Nordics developed this one litre milk bottle made entirely from a biobased polymer!

A mineral filler was also inserted to reduce the amount of polymer used in each bottle to lightweight and enhance the environmental impact.

With an expected population increase to 9.8 billion by 2050, RPC recognises the increased pressure that will be put on global food resources. RPC therefore believes it is preferable that the biomass source used to make biobased polymers are not grown in direct competition or conflict with any food resources.

Downstream end-of-life environmental issues also need to be taken into account when working with bioplastics. Consideration, for example, should be given to how products made from or containing bioplastics will be disposed of at end-of-life so that where possible they should be compatible with current recycling systems, or conditions are in place for the correct disposal route e.g. composting.

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