

# P&G and Biobridges Call for Innovative Solutions

Sustainable, Circular and Bio-Based Materials and Solutions in Braun and Oral-B products

## SPECIFICATIONS FOR CHALLENGE 2

### Oral-B Manual Toothbrushes Recyclability

#### What are the consumer needs?

Manual toothbrushes contribute to the waste issue: if everyone around the world changed their toothbrush 2-3 times a year like dentists recommend, that would mean billions of toothbrushes would get trashed annually in the landfill! One of Oral-B key challenges will be to drive responsible consumption and toothbrush recyclability to reduce overall waste and usage of virgin plastic.

#### Actual solution:

Currently synthetic plastic heads, bristles and handles are adopted. There are currently no recycling systems available for durables like manual toothbrushes, also no bio-based products in the Oral-B line of toothbrushes.

#### Why is a change needed?

Today, manual toothbrushes as such are not recycled for the following reasons:

- Lack of collection systems for the products to enter the recycling infrastructure at end-of-life
- Most of Oral-B brushes are made from two components: TPE = soft material for better consumer grip and in-use navigation and PP = hard material for durability. These two components cannot be separated by recycling facilities today.
- Bristles are primarily made of Nylon and bring in a third material / another level of complexity to the toothbrush

#### How does it tie to the business/ Company strategy?

Manual toothbrushes are the 3rd biggest form globally within oral care and a key focus area for continuous, sustainable growth. "Less throwaway" is a very clear expectation from today's consumers. Oral-B strategy is to enable everyone to be healthier through not just great oral care products but also a healthier planet as pollution has an evident impact on people's health and wellbeing. Making Oral-B toothbrushes recyclable would get us a step closer to executing Oral-B strategy and contributing to a healthier planet.

#### What is the need and what is the desired outcome of project?

The project should offer solutions that help us identify what is needed to recycle a manual toothbrush a) on the product side (what materials are allowed/not allowed) and b) on the circular economy side. Answers to how we can enter manual toothbrushes into the full circular economy cycle and minimize trash to the landfill.

#### Braun 1a: Identification of an alternative bio-based Cleaning Center liquid

##### Objectives:

- Enter the circular economy stream and minimize trash to the landfill;
- Identify sustainable PCR and bio-based alternatives to virgin fossil based plastics suitable for toothbrushes.

##### Challenge to be addressed by the new solution:

- (OB 1) Identify solutions that create a collection system for durables like manual toothbrushes to enter recycling systems
- (OB 2) Identify more sustainable solutions on the product design/ materials side (eco-design solutions, bio-based, biodegradability, etc.), keeping comparable performance (hygiene, cost, cleaning performance).
  - Find suitable alternatives to the actual two components: TPE = soft material for better consumer grip and in-use navigation and PP = hard material for durability. (These two components cannot be separated by recycling facilities today).
  - Find a bio-based alternative for the bristles (that are actually primarily made of PA/ Nylon and bring in a third material / another level of complexity to the toothbrush). Bio-based solutions should not jeopardize existing and/ or newly developed (OB 1) recycling streams

##### Characteristics and consumer's benefits:

- Cost-effective;
- Hygienic properties, complying with hygiene articles requirements and FDA guidelines for medical devices class 1;
- Pleasantness/ haptic feel of the material (e.g. bamboo toothbrushes are not perceived as pleasant by some users).

