PETCORE ANNUAL CONFERENCE 2021

Session 1: "2019 pet market, collection & recycling rates"
Working group: opaque and functional bottles

Alessandra Funcia – Head of Sales & Marketing - Sukano

02-03 June 2021

CONTENT

O&F WG Members

WORKING GROUP MODUS OPERANDI

WG OPAQUE & FUNCTIONAL BOTTLES

WORKING GROUPS

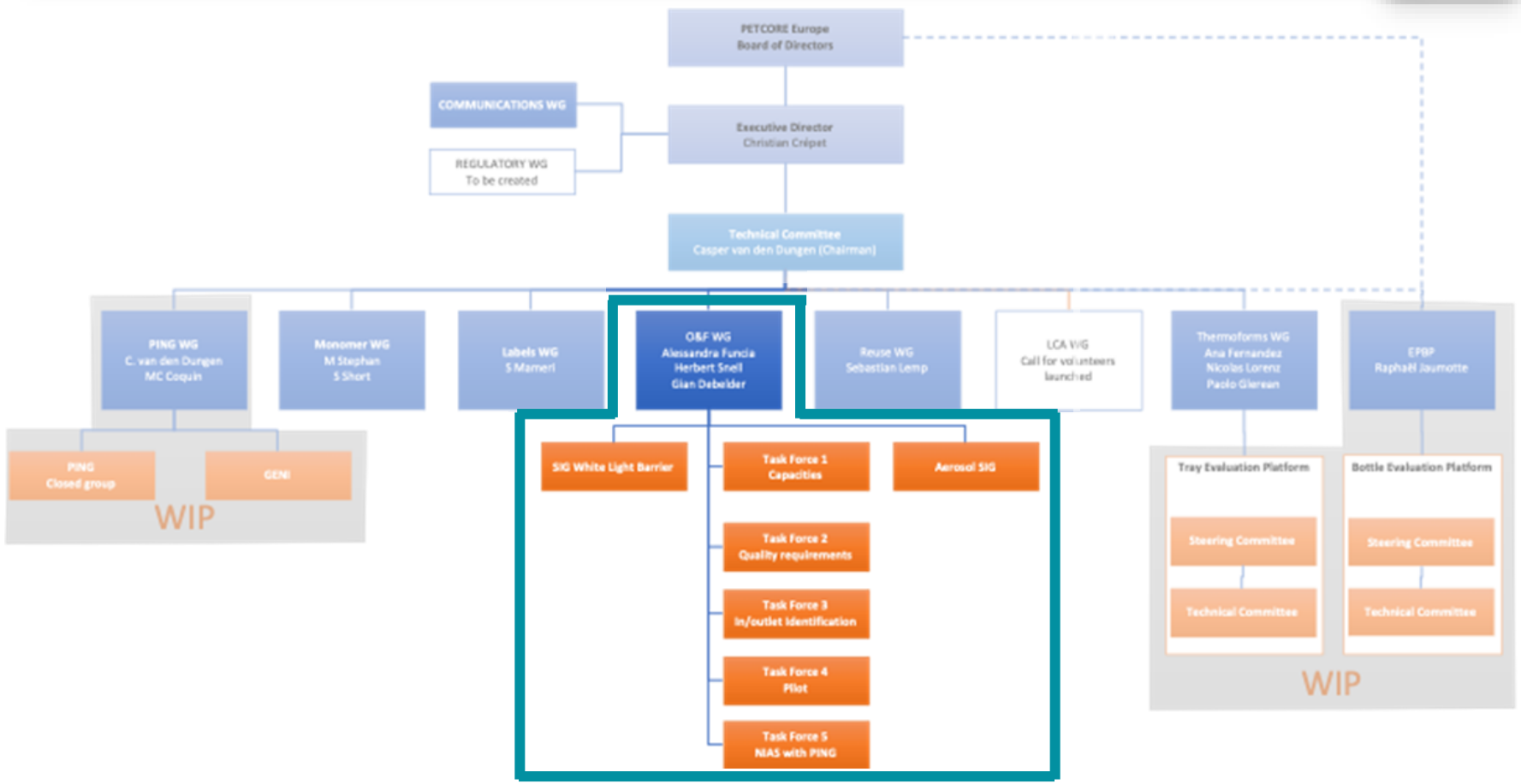
Aiming at increasing the volumes of PET recycling and promoting new solutions

O&F

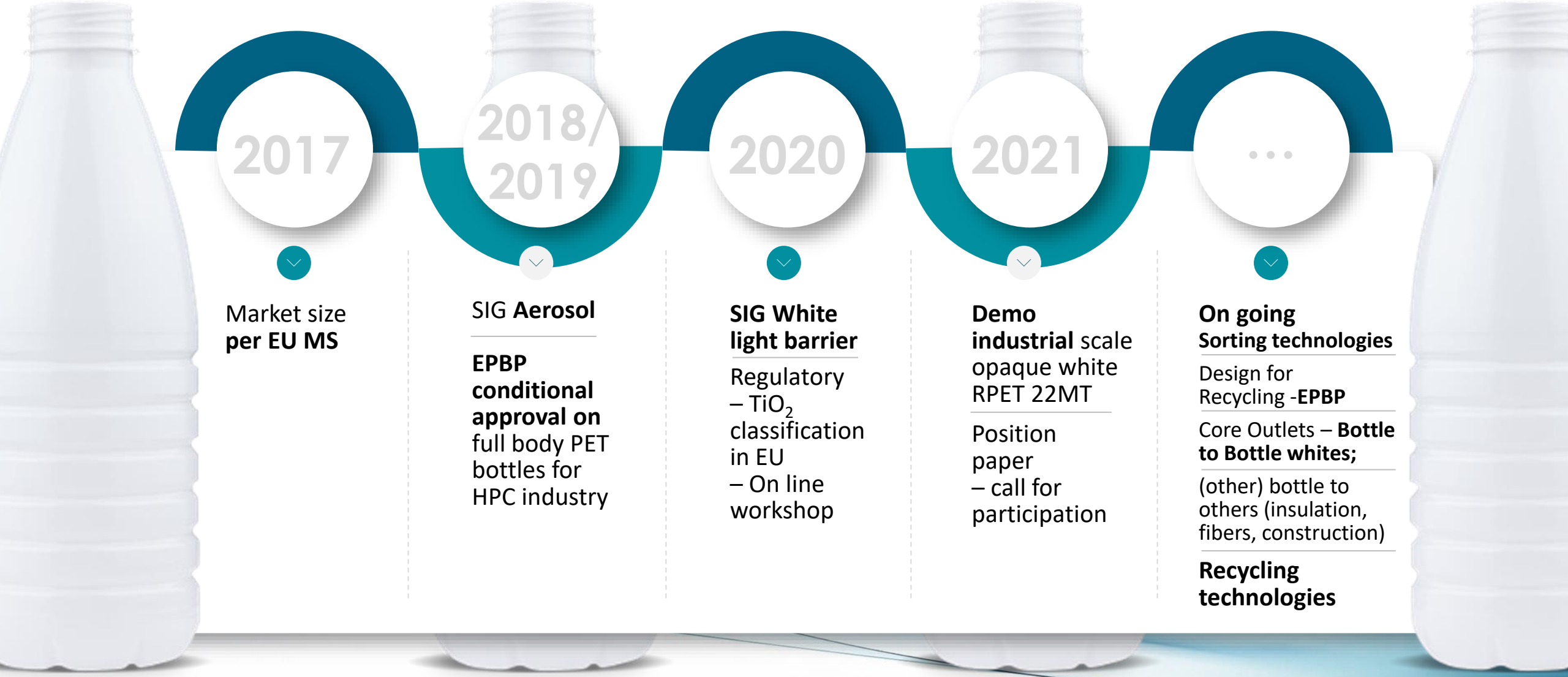
Mission: Identify, foster, communicate and promote outlets/end applications for non clear (opaques), sleeved and functional PET bottles

Vision: All opaque and functional PET bottles (and trays) are recyclable, collected, sorted and recycled

O&F WG STRUCTURE AND GOVERNANCE



DELIVERABLES



2017

Market size **per EU MS**

2018/ 2019

SIG **Aerosol**

EPBP conditional approval on full body PET bottles for HPC industry

2020

SIG White light barrier

Regulatory – TiO_2 classification in EU

– On line workshop

2021

Demo industrial scale opaque white RPET 22MT

Position paper – call for participation

...

On going

Sorting technologies

Design for Recycling -**EPBP**

Core Outlets – **Bottle to Bottle whites;**

(other) bottle to others (insulation, fibers, construction)

Recycling technologies

REGULATORY SCENARIO: TiO_2 CLASSIFICATION UPDATES

TiO_2 CLASSIFICATION

Scope: TiO_2 in a powder form containing **1% or more of particles** with aerodynamic diameter ≤ 10 µm

Member guidance doc distributed early Dec2020

Up to date: most of the leading international TiO_2 supplier have not identified any product grades suitable for PET applications, **that trigger classification and therefore will not apply classification labels** to its products under the current law

For continuously updated information please visit: **https://tdma.info**

Petcore Europe
Avenue de Broqueville 12
1150 Brussels, Belgium
Phone : +32 (0) 2 315 24 88
Email: info@petcore-europe.org
Website: www.petcore-europe.org

Petcore Europe Member Guidance
Substance Titanium dioxide

Name Titanium dioxide | **Synonyms:** TiO_2, Titania, Titanium (IV) oxide, Titanium white, Pigment White 6 (PW6), or CI 77891 | **EU Info card Information on TiO_2:** https://echa.europa.eu/nl/substance-information/-/substanceinfo/100.033.327

The European Commission has classified certain forms of titanium dioxide (TiO_2) as a category 2 carcinogen by inhalation according to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging (CLP) of substances and mixtures. This means that certain forms of TiO_2 and mixtures containing these forms of TiO_2 may require special labelling. These requirements will apply from 1st October 2021.

The new entry for TiO_2 in Annex VI of the CLP is interesting as the classification is limited to inhalation and is accompanied by several specific notes intended to further limit its scope. Additionally, there is terminology which is new to CLP. The terminology is ambiguous and could be subject to multiple interpretations.

This could be seen as an opportunity to showcase PET as a major contributor to the Circular Economy by demonstrating how the whole PET value chain from Producer to Recycler can come together to manage this regulatory change safely and efficiently.

The objective of this guidance is to provide Petcore Europe Members with help in the interpretation of the scope and application of the TiO_2 harmonised classification. This help is targeted at downstream users of TiO_2 including recyclers, to support the application of this classification. There are uncertainties inherent in this classification and alternative interpretations may exist, however it is recommended that Petcore Europe members should try to implement the following interpretation, at least until clarification in late 2021.

Scope – European Union markets

The CLP is about the Classification, Labelling and Packaging of substances and mixtures. Within the CLP three definitions are applicable:

- A Substance means a chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition;
- A Mixture means a mixture or solution composed of two or more substances;
- An Article means an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition

Handling of TiO_2 powder – i.e. TiO_2 in powder form used to produce Masterbatches and compounds
The vast majority of TiO_2 placed on the market is very likely to fit the description of TiO_2 in powder form i.e. composed of particles with an aerodynamic diameter of less than 10µm and is therefore expected to be classified as a Category 2 Carcinogen by Inhalation (only). As such, users of the powder form must implement the relevant worker protection measures if not yet already long available and in place, as standard procedures of safety protection at workplace when dealing with powder mixtures.

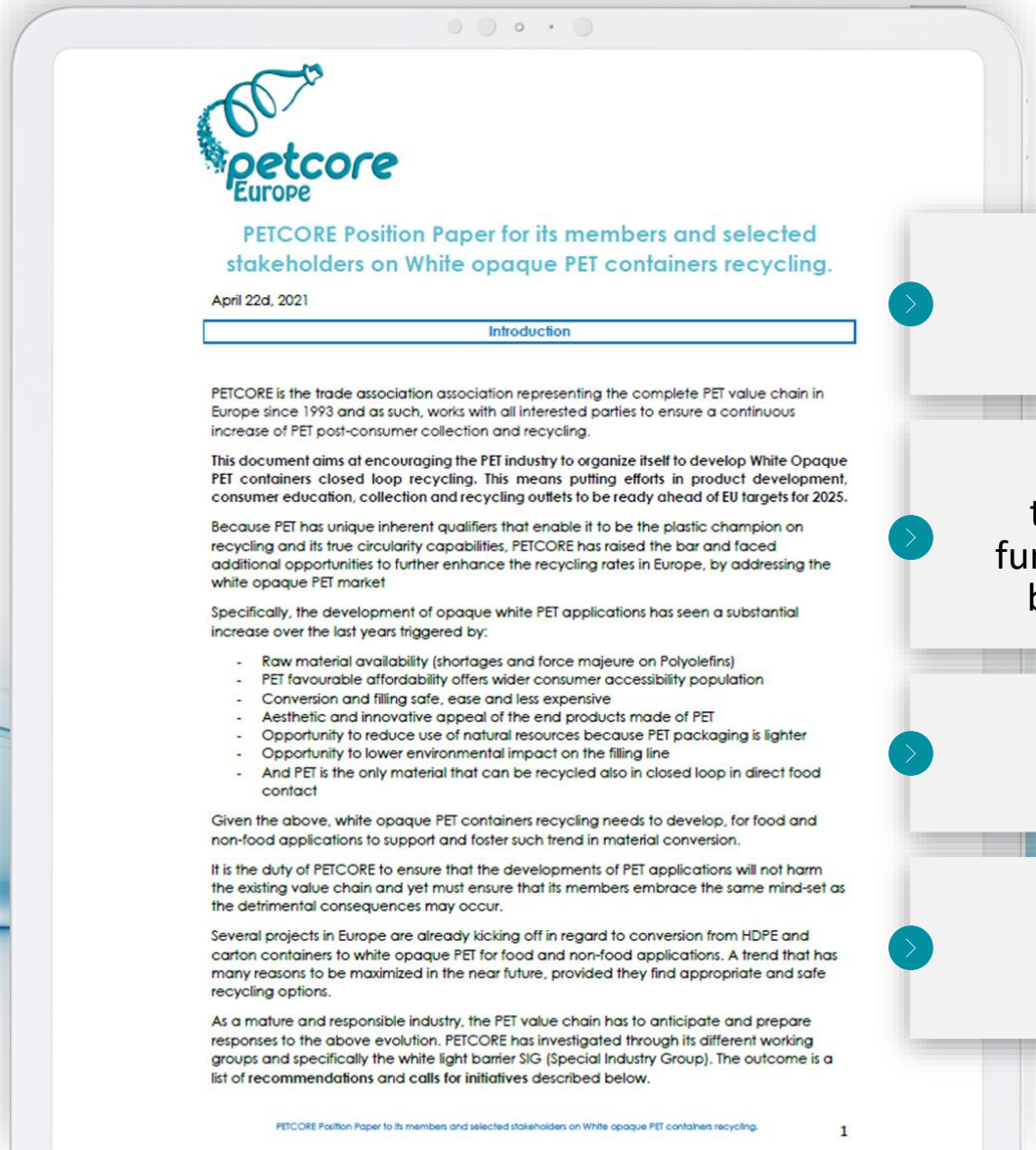
Solid mixtures – polymer granules, masterbatches concentrated mixtures containing TiO_2 and compounds
A powder is considered a solid in the CLP, as it does not meet the definitions of liquid or gas. The CLP also states that solids can include granules, flakes, pellets and powders. A solid mixture is only classified when it is in powder form unless the mixture contains other hazardous substances. Polymer granules

1/3

Lead: Mike Neal

PILOT DEMO INDUSTRIAL SCALE UP RPETo

WG O&F: POSITION PAPER



petcore Europe

PETCORE Position Paper for its members and selected stakeholders on White opaque PET containers recycling.

April 22d, 2021

Introduction

PETCORE is the trade association association representing the complete PET value chain in Europe since 1993 and as such, works with all interested parties to ensure a continuous increase of PET post-consumer collection and recycling.

This document aims at encouraging the PET industry to organize itself to develop White Opaque PET containers closed loop recycling. This means putting efforts in product development, consumer education, collection and recycling outlets to be ready ahead of EU targets for 2025.

Because PET has unique inherent qualifiers that enable it to be the plastic champion on recycling and its true circularity capabilities, PETCORE has raised the bar and faced additional opportunities to further enhance the recycling rates in Europe, by addressing the white opaque PET market

Specifically, the development of opaque white PET applications has seen a substantial increase over the last years triggered by:

- Raw material availability (shortages and force majeure on Polyolefins)
- PET favourable affordability offers wider consumer accessibility population
- Conversion and filling safe, ease and less expensive
- Aesthetic and innovative appeal of the end products made of PET
- Opportunity to reduce use of natural resources because PET packaging is lighter
- Opportunity to lower environmental impact on the filling line
- And PET is the only material that can be recycled also in closed loop in direct food contact

Given the above, white opaque PET containers recycling needs to develop, for food and non-food applications to support and foster such trend in material conversion.

It is the duty of PETCORE to ensure that the developments of PET applications will not harm the existing value chain and yet must ensure that its members embrace the same mind-set as the detrimental consequences may occur.

Several projects in Europe are already kicking off in regard to conversion from HDPE and carton containers to white opaque PET for food and non-food applications. A trend that has many reasons to be maximized in the near future, provided they find appropriate and safe recycling options.

As a mature and responsible industry, the PET value chain has to anticipate and prepare responses to the above evolution. PETCORE has investigated through its different working groups and specifically the white light barrier SIG (Special Industry Group). The outcome is a list of **recommendations and calls for initiatives** described below.

PETCORE Position Paper to its members and selected stakeholders on White opaque PET containers recycling. 1

Call for key stakeholders pilot demo of RPET opaque recyclability scaled up to industrial quantities

Encourage and facilitate the PET industry to organize itself to develop **White Opaque PET containers closed loop recycling**

PETCORE supports the industry to raise the bar and face additional opportunities to further enhance the recycling rates in Europe, by addressing the white opaque PET market

For food and non-food applications in different fractions

With the main application target being **bottle to bottle food grade closed loop applications** – EPBP DfR guidelines

CALL FOR PARTICIPANTS OF THE PILOT

22MT WHITE Mono/ Multi RPETo DEMO

- Kerbside
- DRS
- Collection points

- Sorting food vs non food (holygrail, digitalwatermarks)
- Sorting white from clear and opaques colored
- Sorting multi layer from monolayer

Lead: Vincent Collard – CITEO

QUALITY REQUIREMENTS CONSIDERATIONS

Collection of technical properties requirements for RPETo and MS recycling capabilities

OUTLETS RPETo QUALITY REQUIREMENTS

Sorting technologies (TF2-Johan Kerver)

- Opaques
  - Whites
    - Monolayer
      - Food
      - Non Food
    - Multilayer
      - Food
      - Food
  - Opaque colors
    - Mix of dark shade
      - Non Food
- Functional
  - New tech barriers
    - Clear PET
  - Conventional Barriers

Mechanical recycling (TF1-Karsten Fritsch)

- Bottle to Bottle monolayer
- Non food PET applications (e.g insulation, fiber, etc)
- Bottle to Bottle middle layer

Monomer Recycling

PETCORE EUROPE

The Nestwork
Avenue de Broqueville 12
1150 Brussels
Belgium

Tel.: +32 (0)2 315 24 88
Email: management@petcore-europe.org
Contact: Julie Legrain
Website: www.petcore-europe.org