



# Plastics Sustainability

## The PVC Approach

Pedro Gonçalves - CIRES

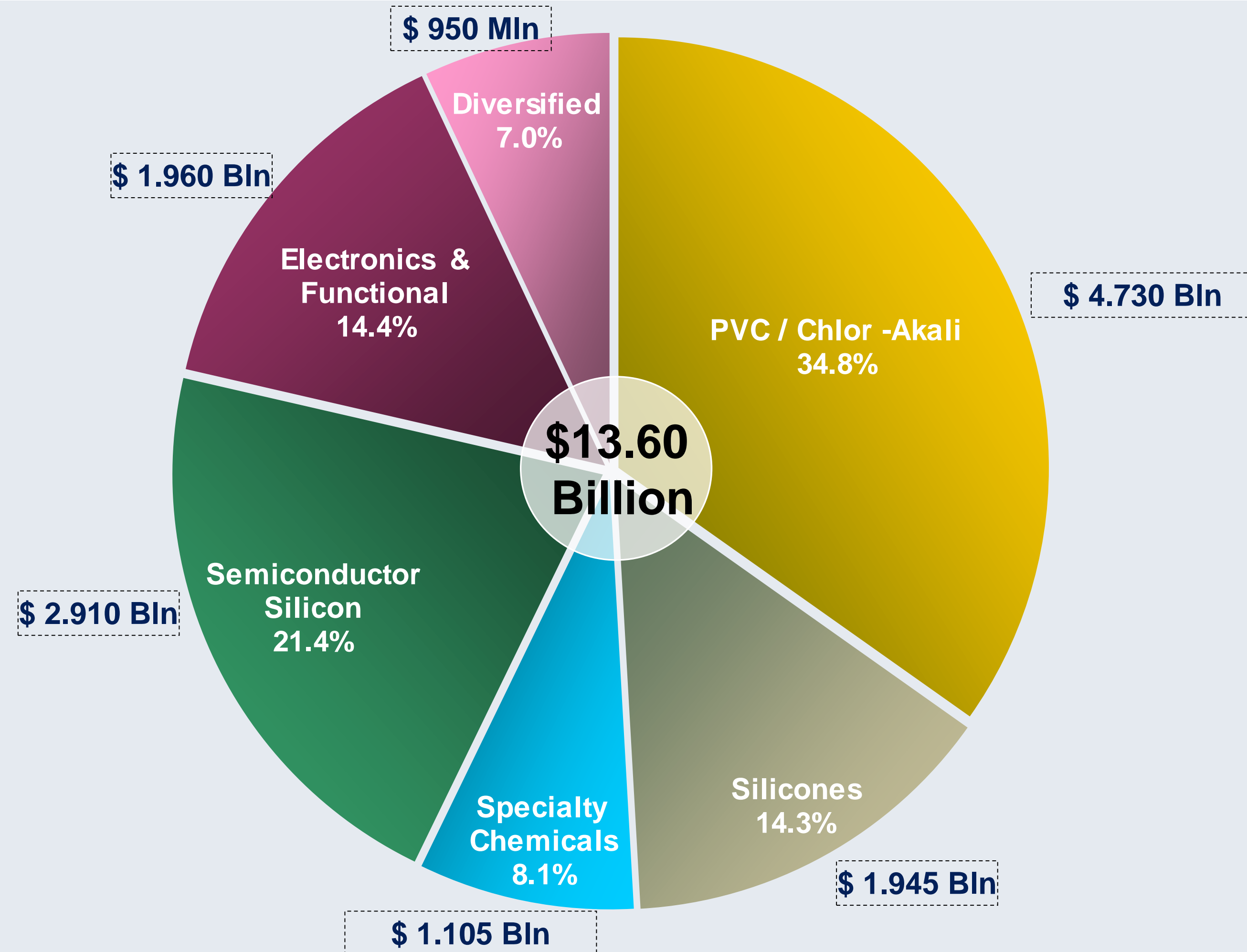
## AGENDA

- Shin-Etsu – CIRES
- Sustainability – The early approach
- The sectorial approach Vinyl 2010 / VinylPlus
- VinylPlus challenges



*The world's leading supplier of  
key materials*

# Shin-Etsu Business Segments 2018



## Shin-Etsu PVC World Capacity 2018

- Shintech USA:
  - Freeport, TX: 1,450 kt
  - Addis, LA: 890 kt
  - Plaquemine, LA: 600 kt
- Total USA 2,940 kt
  
- Shin-Etsu Kashima, Japan: 550 kt
- Shin-Etsu Rotterdam, Holland: 450 kt
- Cires Estarreja, Portugal: 210 kt
  
- **Total PVC capacity 2018:** 4,150 kt



Freeport Plant, Shintech Inc.

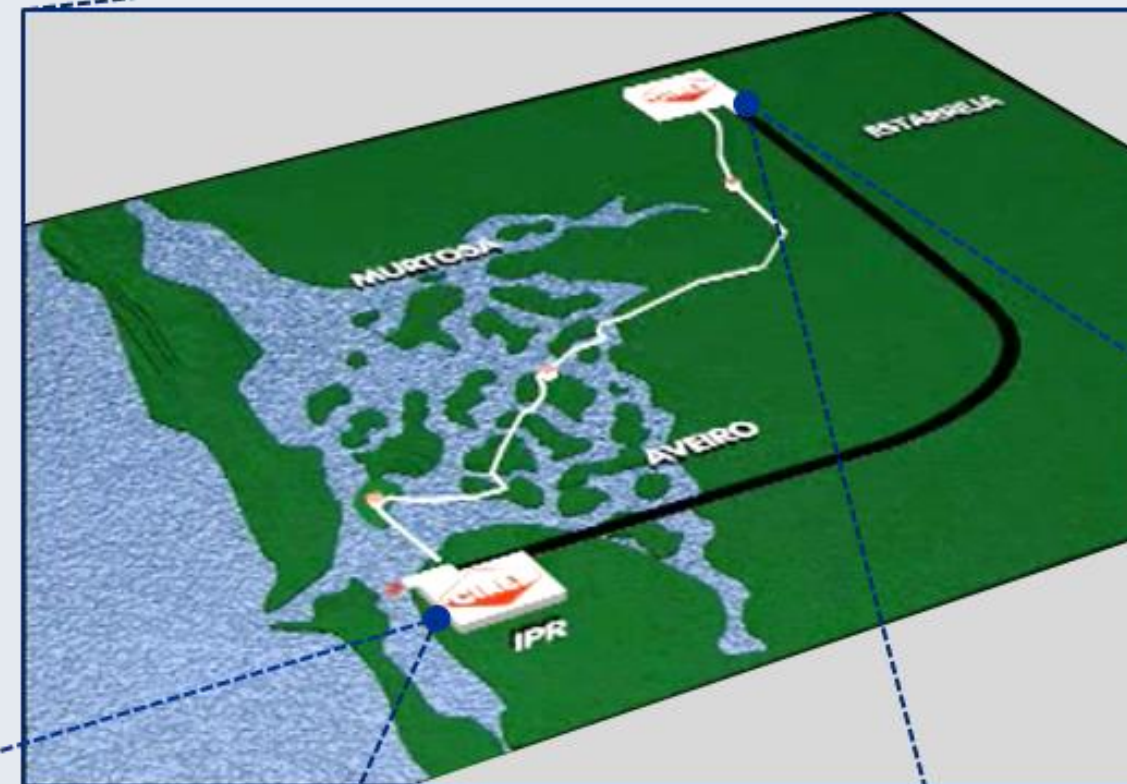


Addis Plant, Shintech Inc.



Pernis Plant, Shin-Etsu PVC

## Cires in Estarreja Portugal



Aveiro - VCM Spheres: 11 kt



Estarreja - PVC: 210 kt/year



VCM Pipeline  
Length: 22.5 km  
Capacity: 300 kt/year



**Sustainability:  
The '90s "Approach"**

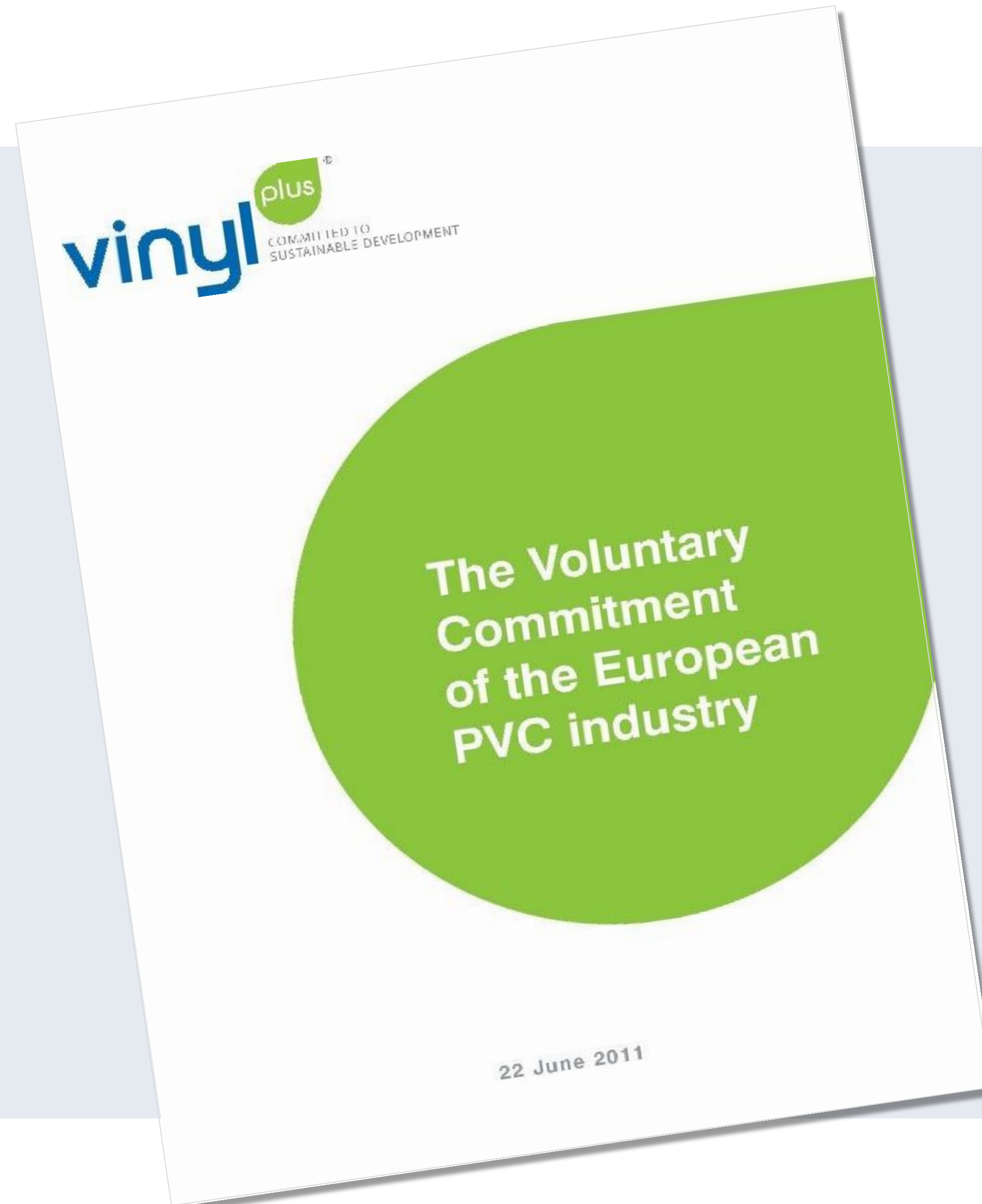


*ECVM INDUSTRY CHARTER  
FOR THE PRODUCTION OF VCM AND PVC*

*ECVM's Contribution To Responsible Care ®*





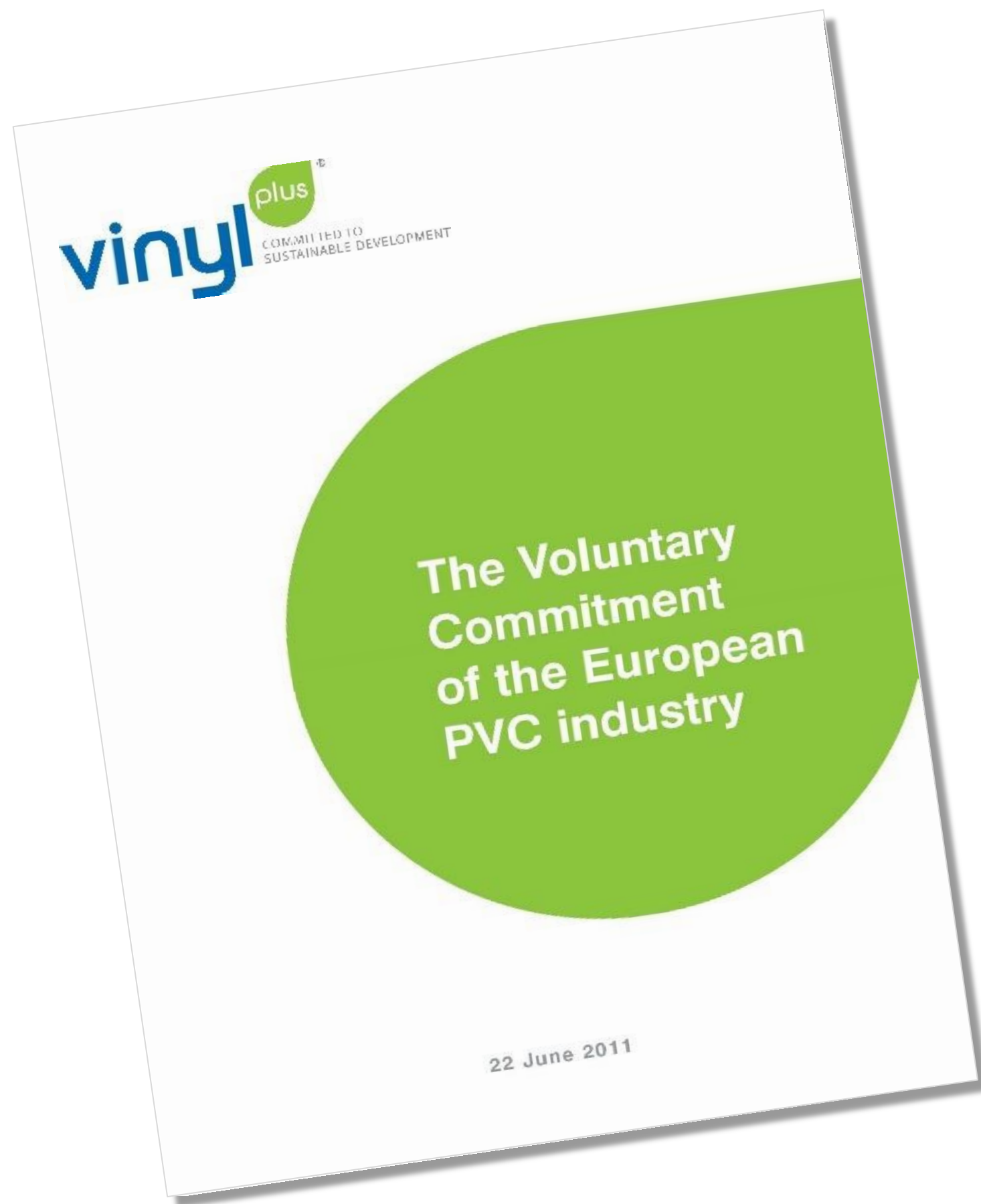


# A United PVC Value Chain



# VinylPlus Voluntary Commitment

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## ● 5 challenges, 35 measurable targets

1. Controlled-loop management
2. Reducing emissions
3. Sustainable use of additives
4. Reducing energy consumption
5. Sustainability awareness

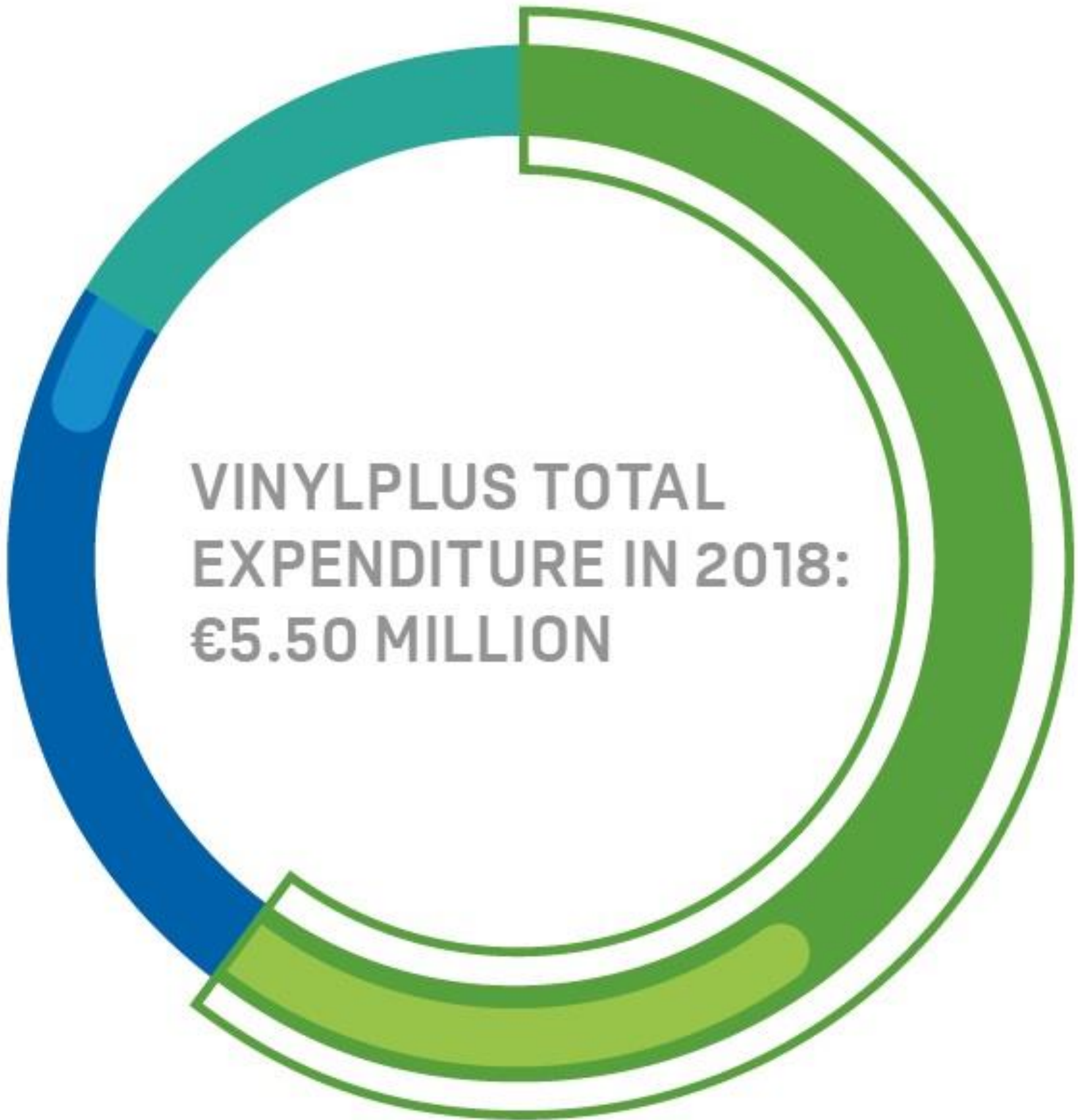
● Independently audited yearly *Progress Reports*

● Overseen by a **Monitoring Committee**

# VinylPlus Contribution to the UN SDGs



# VinylPlus Expenditure in 2018



**60.6%**  
Waste management and technical projects, including national and sectoral co-funding amounting to **17.8%** of total industry funding

**23.6%**  
Communications, including national and sectoral co-funding amounting to **2.4%** of total industry funding

**15.9%**  
Overheads and Voluntary Commitment development

CHALLENGE

1

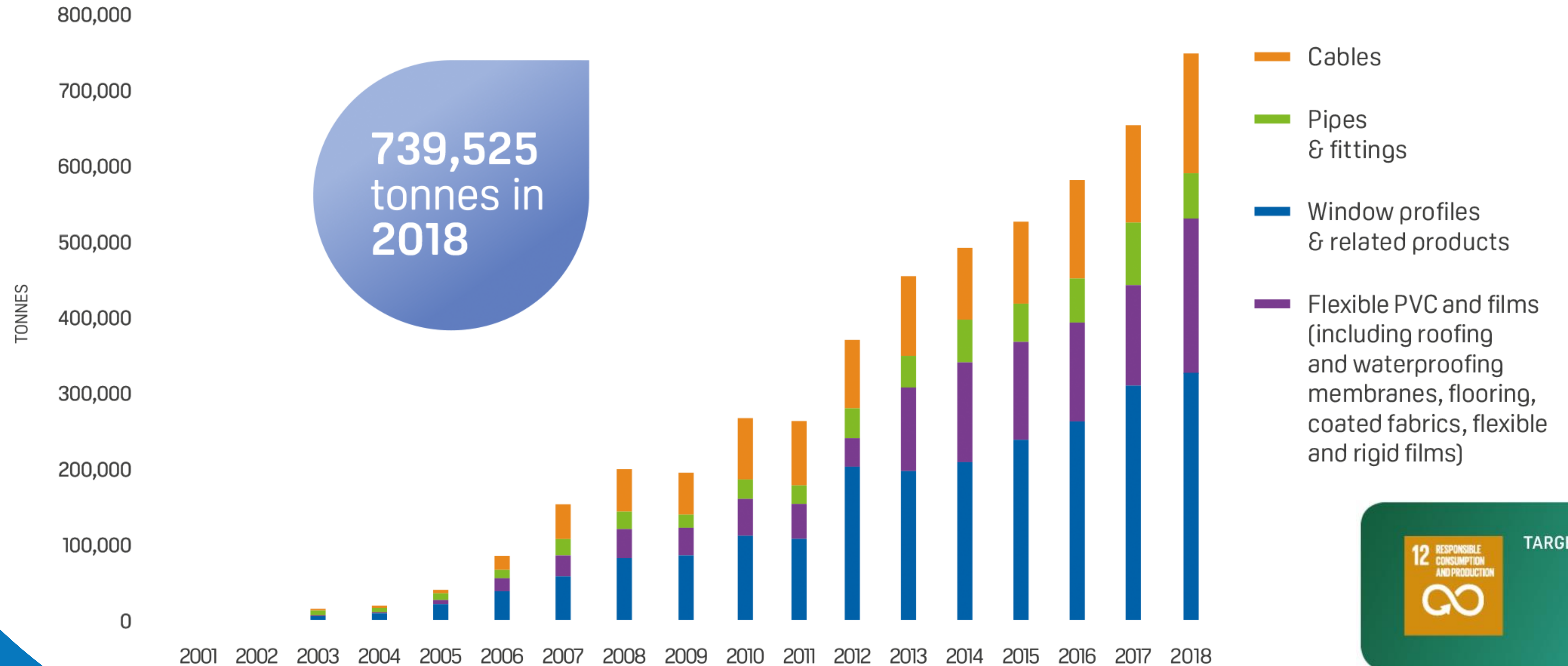
## CONTROLLED-LOOP MANAGEMENT:

*“We will work towards the more efficient use and control of PVC throughout its life cycle.”*



# 5 Million Tonnes of PVC Recycled since 2000!

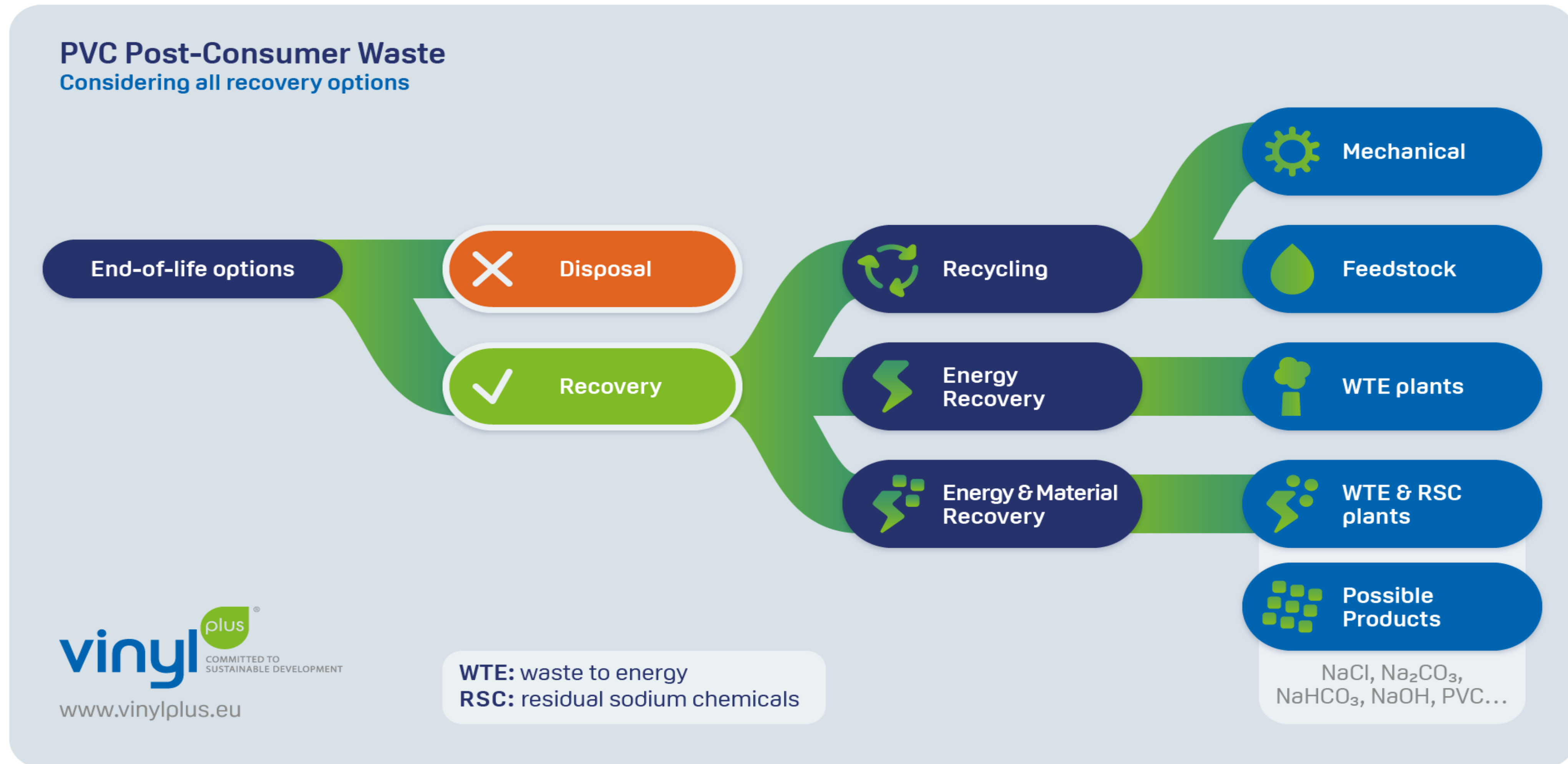
## PVC RECYCLED WITHIN THE VINYL 2010 AND VINYLPLUS FRAMEWORKS



TARGET 12.5



# We are Considering all Recovery Options



*All options will contribute to a Circular Economy*





Grupo Shin-Etsu



Thank you!