

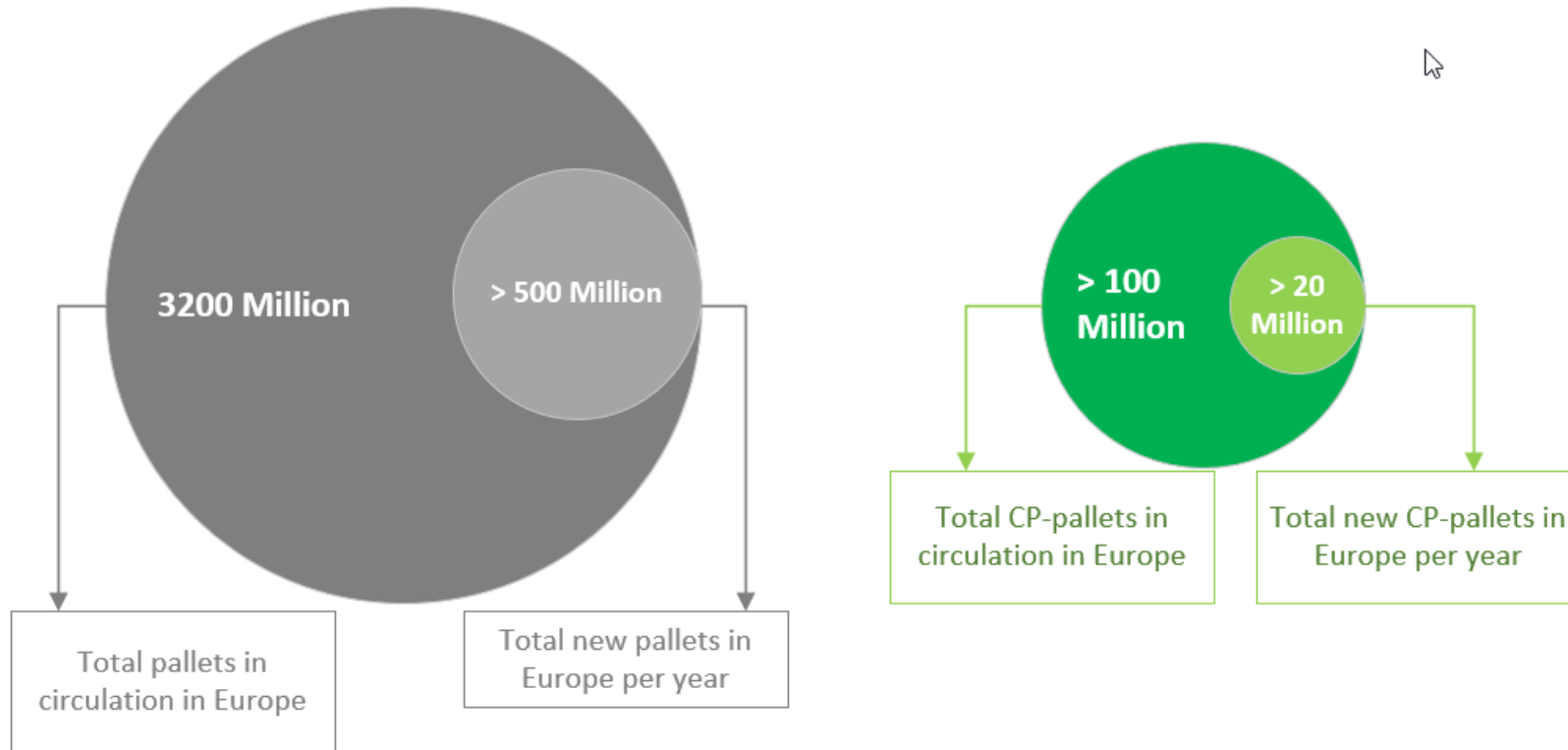


Pilot Project rPO Pallets

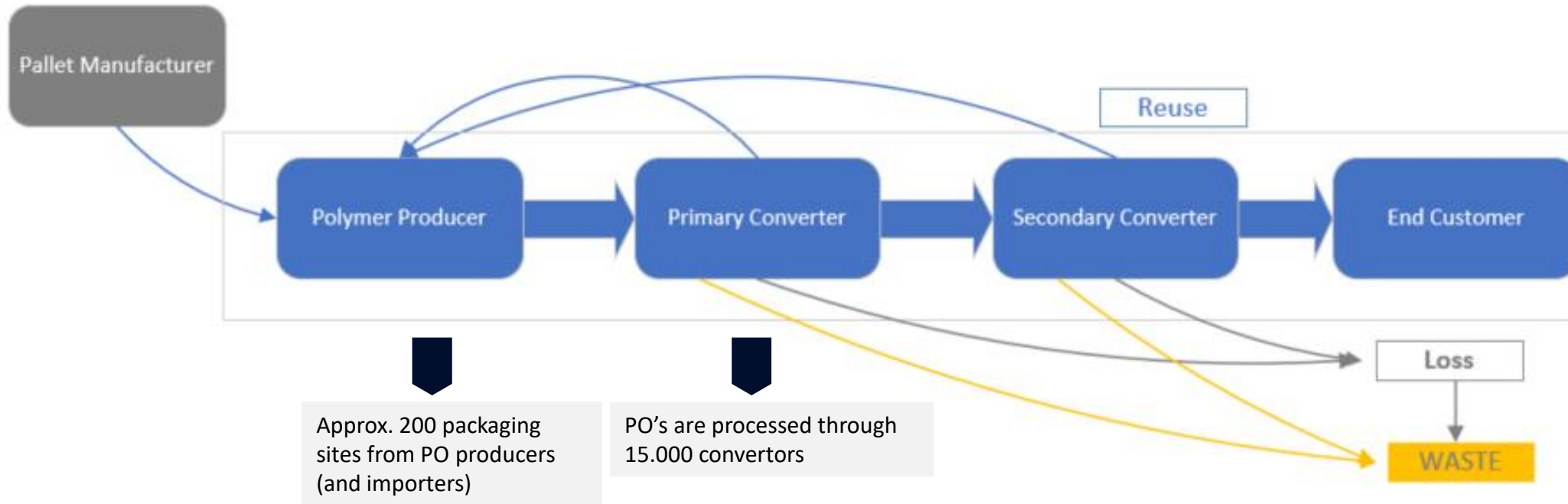
Prepared by:
DOW, PRS and CABKA

End Market Working Group

Chemical Pallets Market



Collaboration in the full polyolefins value system



- Logistics concept: "packaging to stock" no packaging to order
- Export 25-30% (predominantly on pallets)
- 2.5-3 turns per year in controlled reuse network
- Not all converters cooperate for return: +20% loss per cycle
- Increasing imports of PO - especially PE from US
- Load on pallet is 1000 kg (Octabin) till 1375 kg (bags)

The issues

Plastic Waste is not used in volume rPO applications

The Economist

South-East Asian countries are banning imports of waste for recycling

Too much of it is ending up in landfills or furnaces



Wood Pallet End of Life is only Incineration



rPO pallets - proven performance in pool environment

Endur i9 and i7



Endur E7



Nest retail



H1 for food

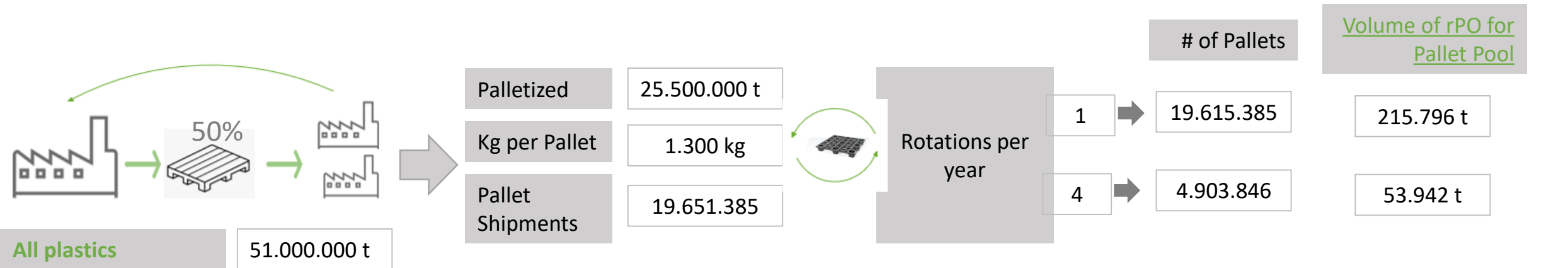
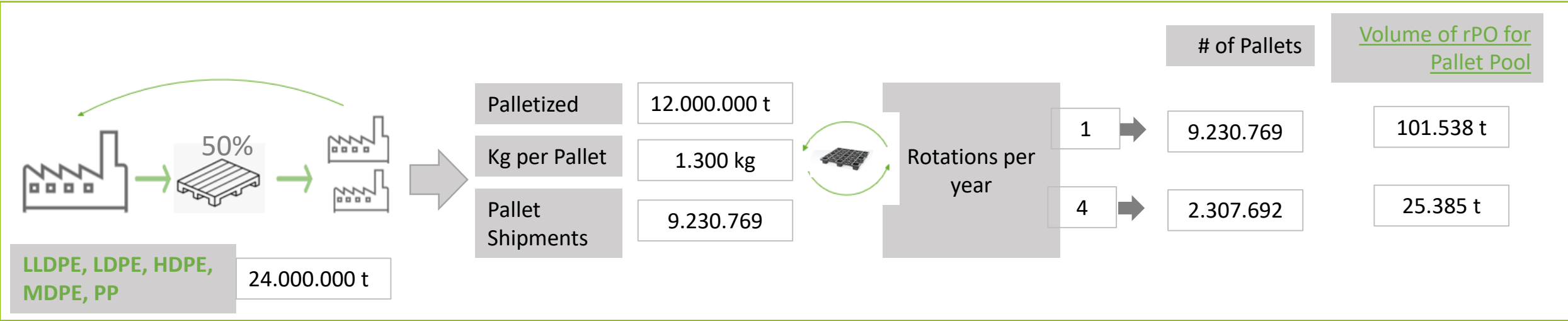


BEVERAGE PALLET

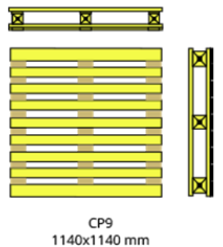
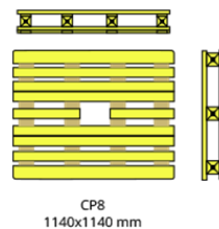
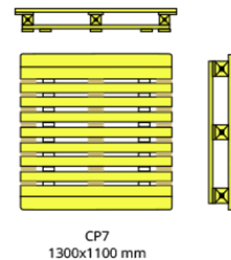
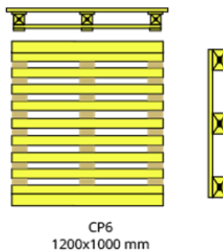
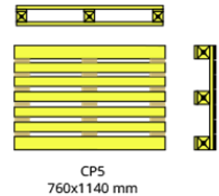
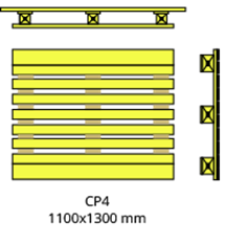
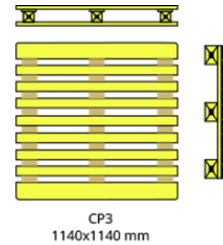
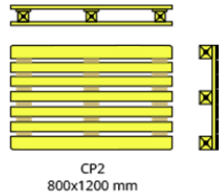
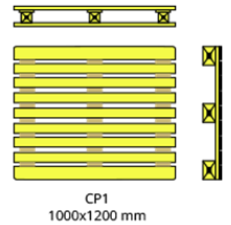


- > Made of virgin and/or recycled PP or HDPE - without metal reinforcements
- > Ideal for high-rotation usage
- > Long life and inherent impact resistance: DRT < 1%
- > Save CO₂

Market Potential rPO pallets in Europe

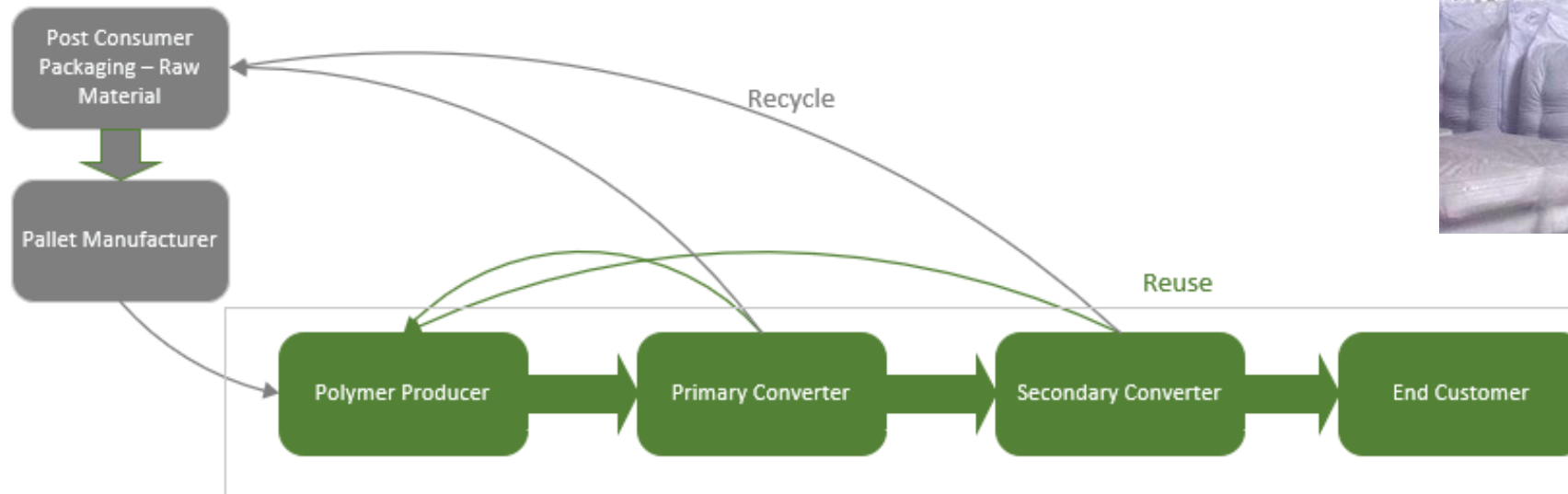


Challenges



- Existing CP standards applied for production and quality of wood pallets but there is no “standard” for plastic pallets and/or rPO pallets.
- All PO producers determine their own packaging standards
- There are many suppliers of plastic pallets in the market
- There are not so many plastic pallet suppliers that produce rPO pallets
- PO producers can determine how they want their pallets to be reused
- PO producers can organize the supply chain of reusable pallets themselves or choose for a third party logistic provider

Vision Plastic Pallet Pool



“ Safety first ”
and “ Circularity first ”

Plastic Pallets for the Industry



Next
Generation
NestRack



CP1		1000*1200	
CP2		800*1200	
CP3		1140*1140	
CP4		1100*1300	
CP5		760*1140	

CP6		1200*1000	
CP7		1300*1100	
CP8		1140*1140	
CP9		1140*1140	

Critical Success Factors

Participation

- Industrywide acceptance by **producers / converters / distributors**
- **Sufficient #** of participants
- Design and **industry approval** of standardized pallets
- Performing **pool system** with low loss rate

Pallet

- **Industry-fit**
- Ensure safety, functionality (bags & semi-bulk), performance
- **Durability**
- Low Damage Rate (DRT)

Proof of Concept

- **Viable Business Case**
- **LCA** - Recommendation: Run a full LCA beyond Cabka's Ecoindicator-based model
- Assessment of potential **rPO migration**

Technical Specification



- Validate Circularity
- Design for Safety
- Design for Recycling
- Define MANUFACTURING specifications
- Define WEAR AND TEAR specifications
- Define ABUSE specifications
- Define TRACKING and TRACING specifications



Pilot Objectives

