

EUROPEAN DEMAND FOR RECYCLATES, QUALITIES AND QUANTITIES

CONTENT

Today situation in polymer recycling in EU

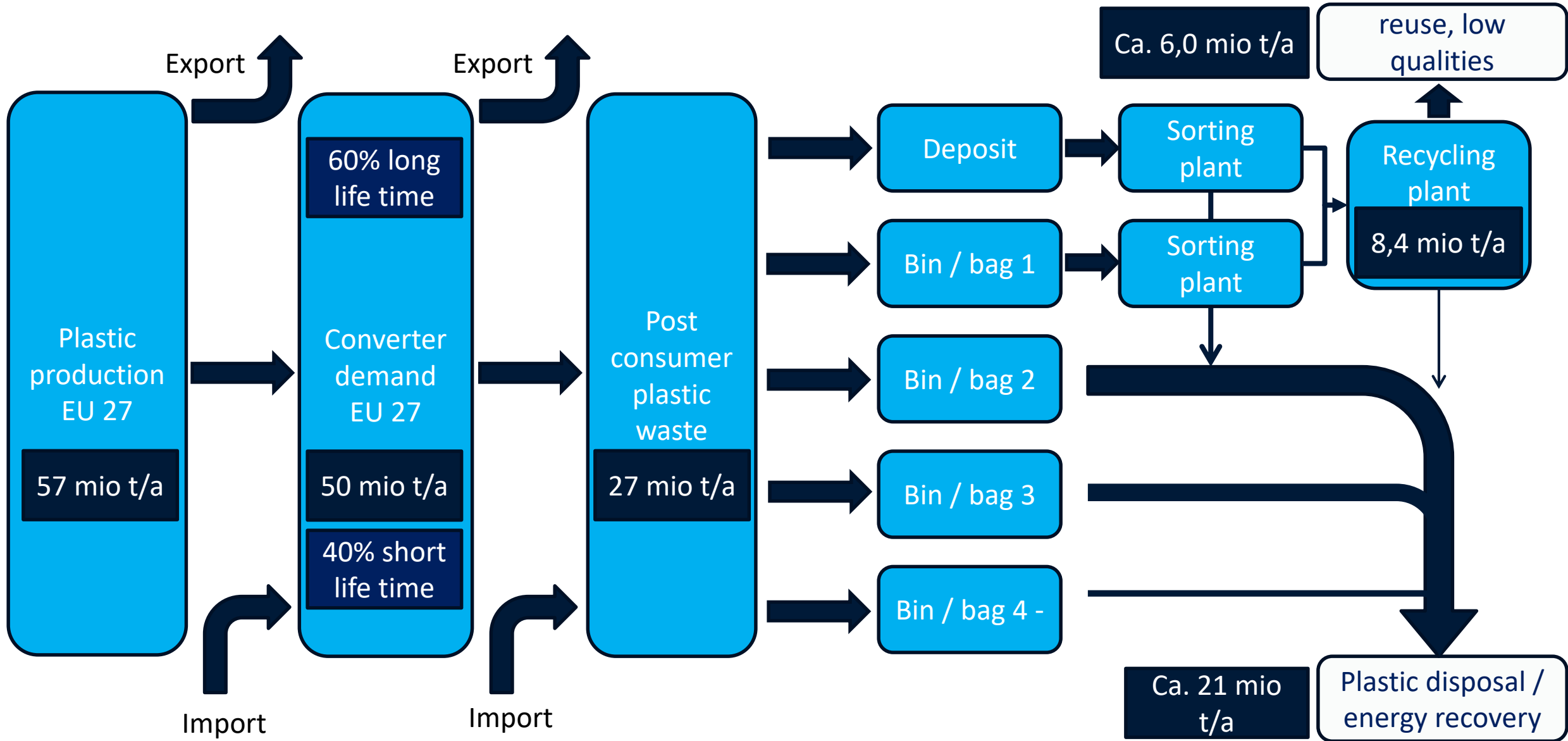
Quantity of recycled polymers needed

Influencing factors

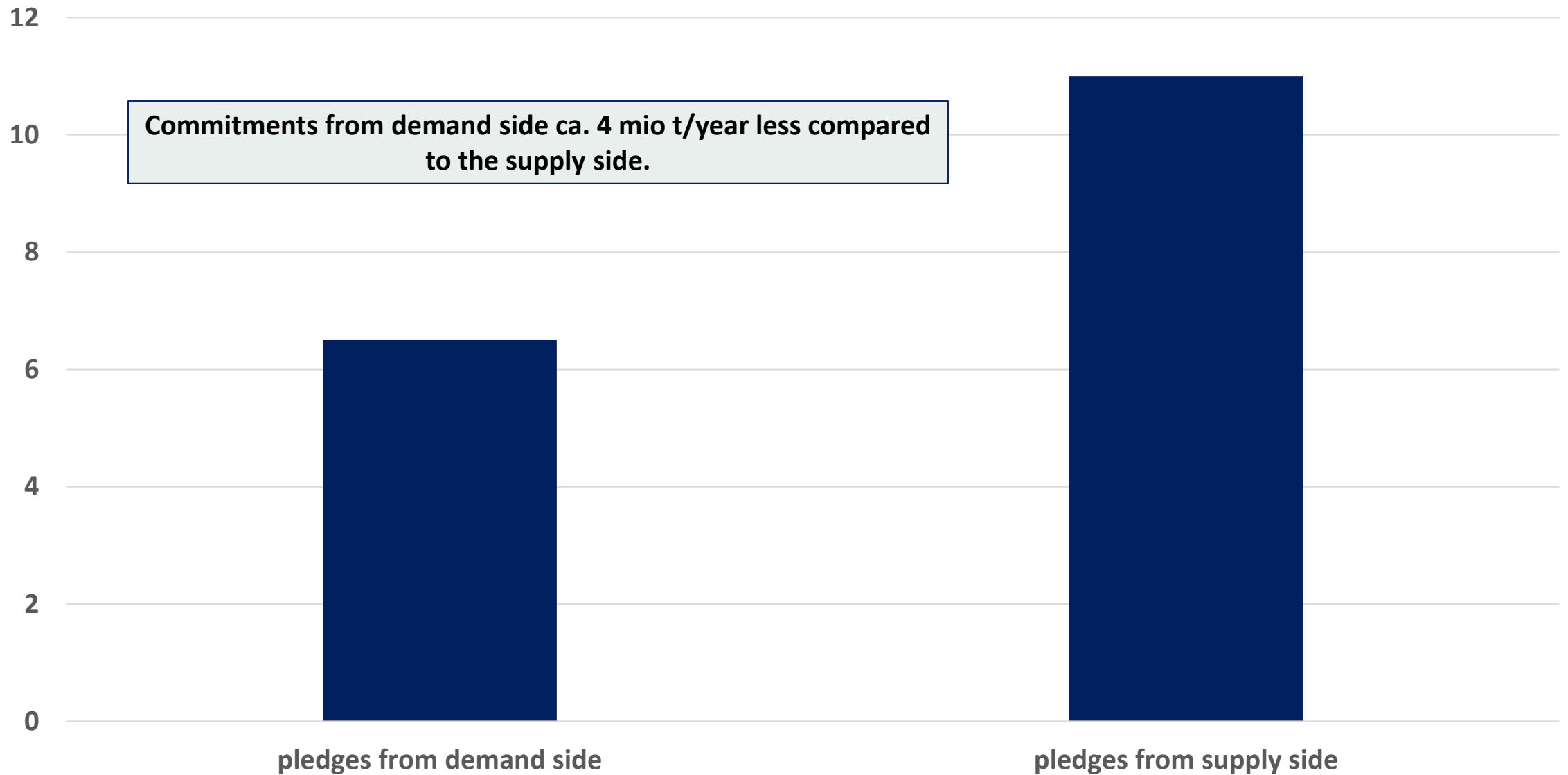
Qualities of recycled polymers needed

Summary

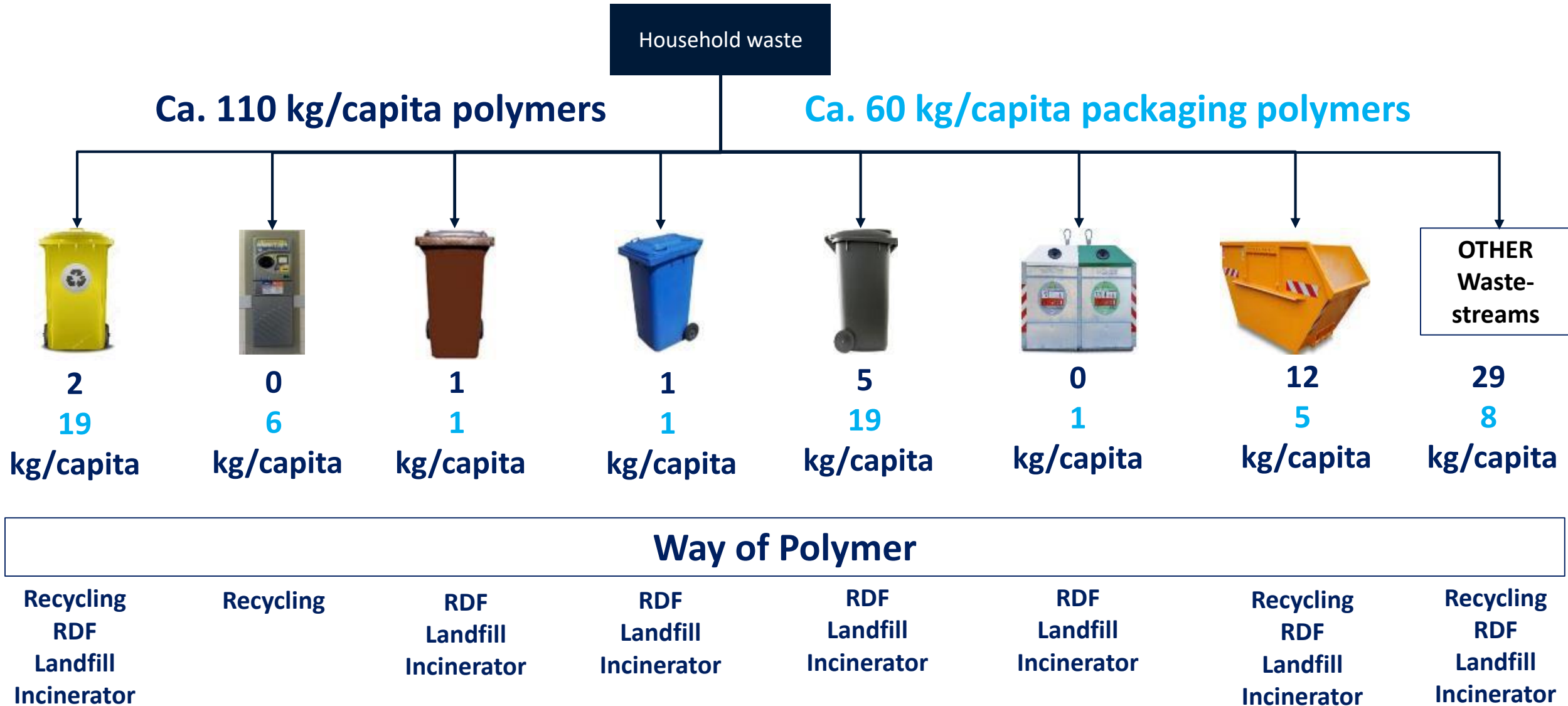
SITUATION WITHIN POLYMERS IN EU



PLEDGES IN EU, 2025 IN MIO T/YEAR



SITUATION WITHIN POLYMERS AND FUTURE POTENTIAL, GERMAN NO.



INFLUENCING FACTORS

SITUATION WITHIN PLASTIC IN EU AND CHANGES COMING

	Today situation	2025	2030
Overall packaging		65 %	75 %
Plastics	22,5 %	50 %	55 %
Wood	15 %	60 %	75 %
FE Metals	50 %	75 %	85 %
Aluminium	30 %	75 %	85 %
Glass	60 %	75 %	85 %
Paper/Cardboard	60 %	75 %	85 %
Household waste		55 %	60 %

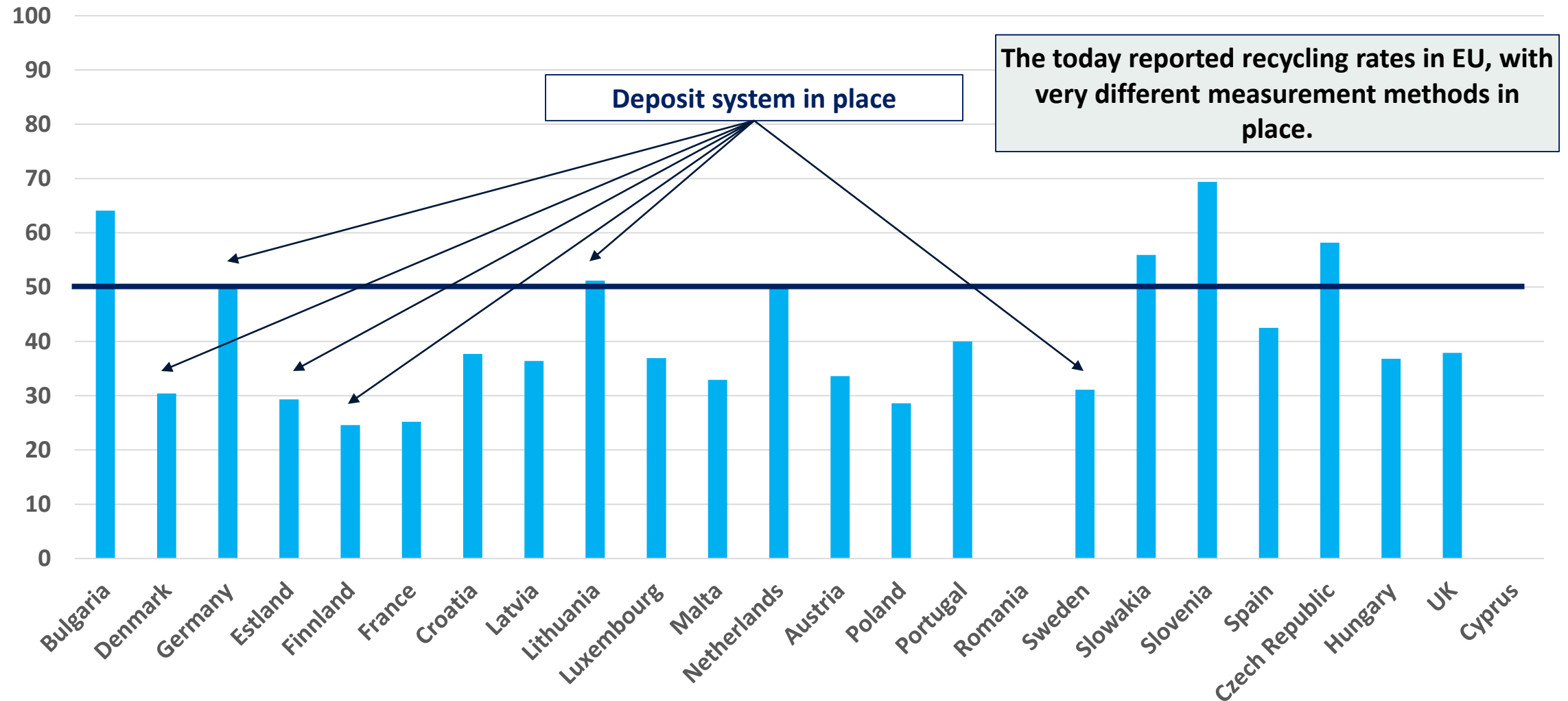
Beside legislation, other drivers are:

- High disposal cost, China effect, Recycling targets
- Green thinking, Available technology, Customer demand

Two major numbers will support recycling of polymers: The 50% target and the overall 55% for household waste.

PLASTIC RECYCLING TARGETS AND ACTUAL NUMBERS

Plastic recycling rates and target 2025



Source: eurostat

SITUATION WITHIN PLASTIC IN EU AND CHANGES COMING

Official way of reporting today

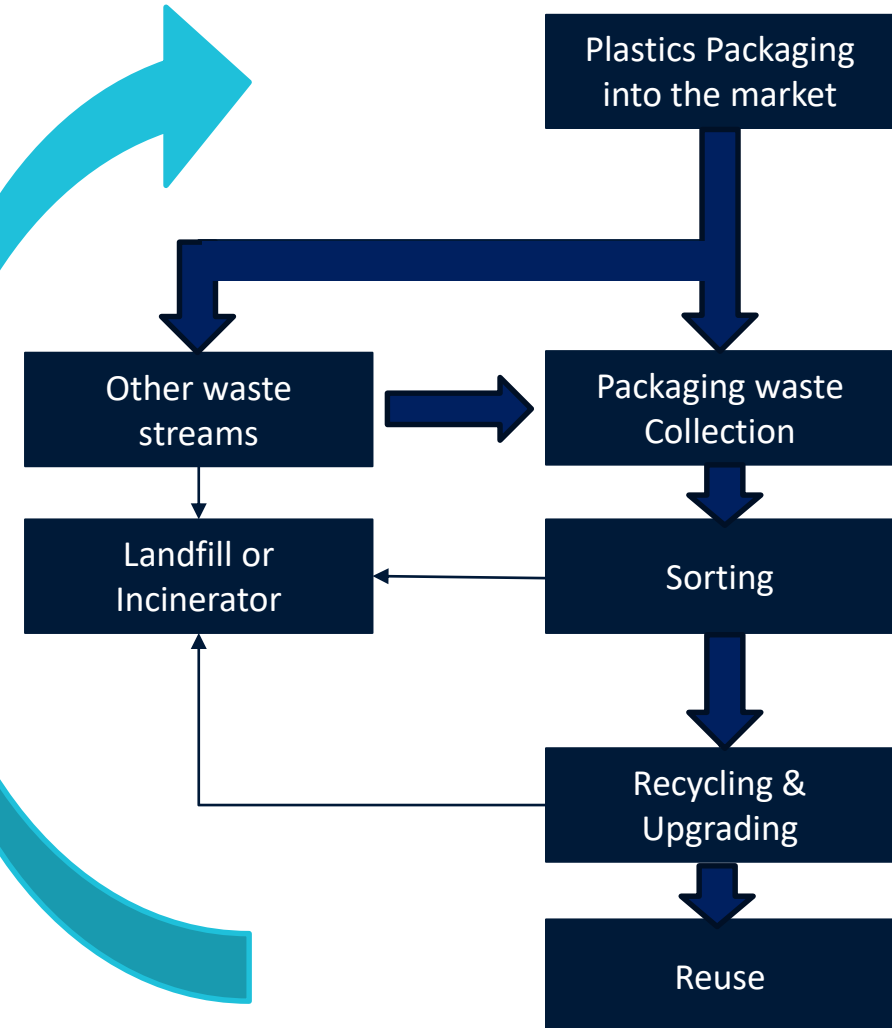


Today, ca. 20 - 25% free riders in DE.

Output of sorting plant is compared to licensed amount

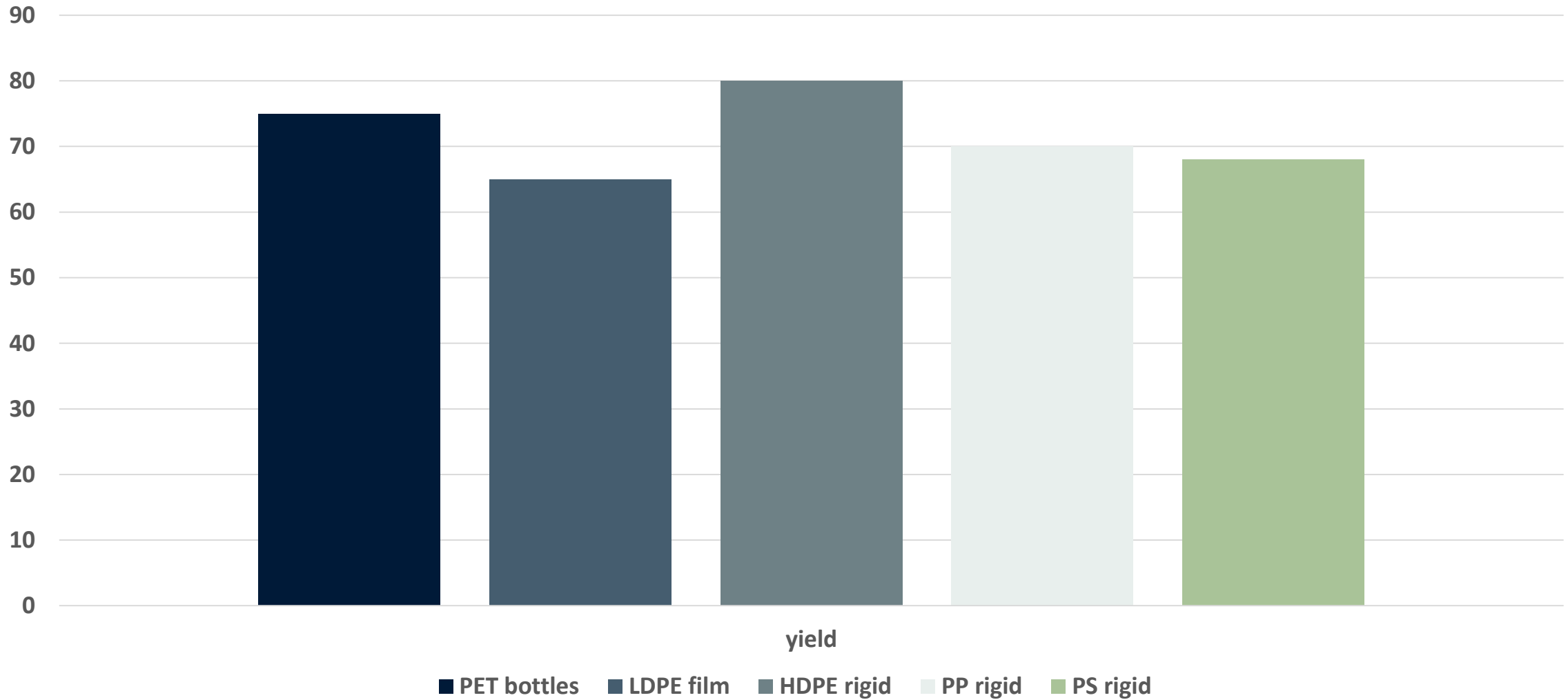
Only the true recycled material is accounted towards the total volume

Real material flow and numbers



A 50% reported today in reality is below 30%

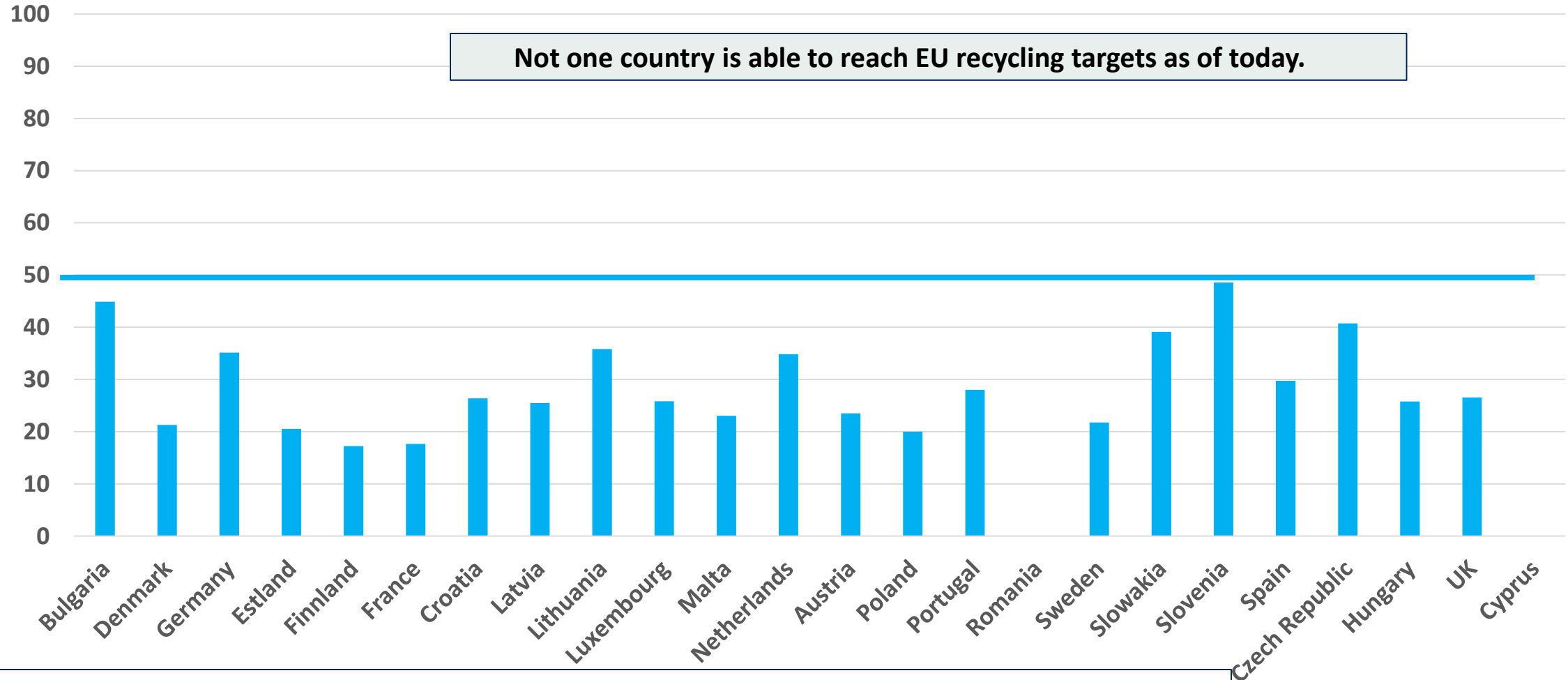
YIELD DURING WASHING - RECYCLING PROCESS



Ca.30% losses during washing/recycling process

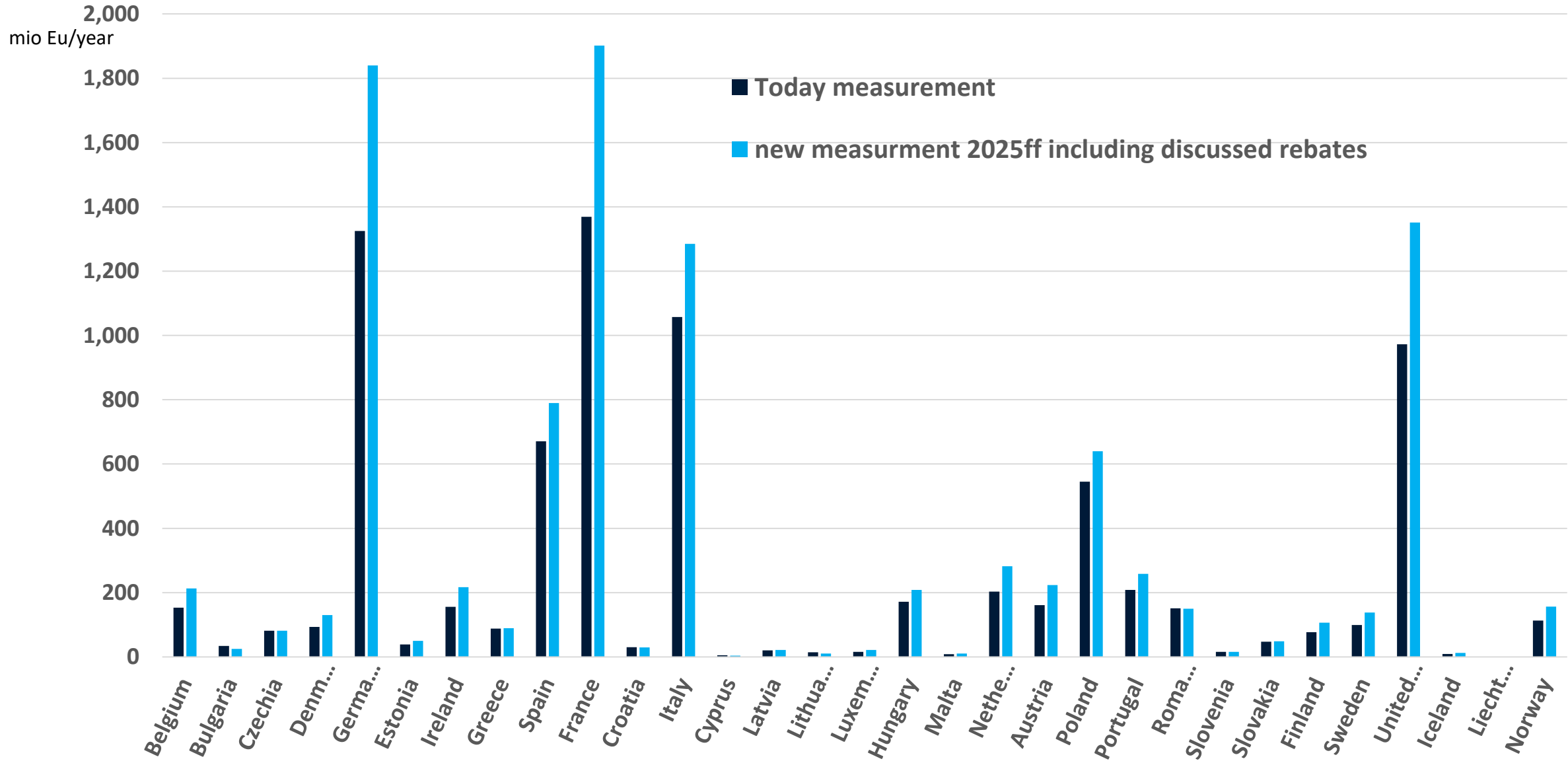
Source: PRE/Tomra own

PLASTIC RECYCLING RATES IF IMPURITIES ARE NOT COUNTED



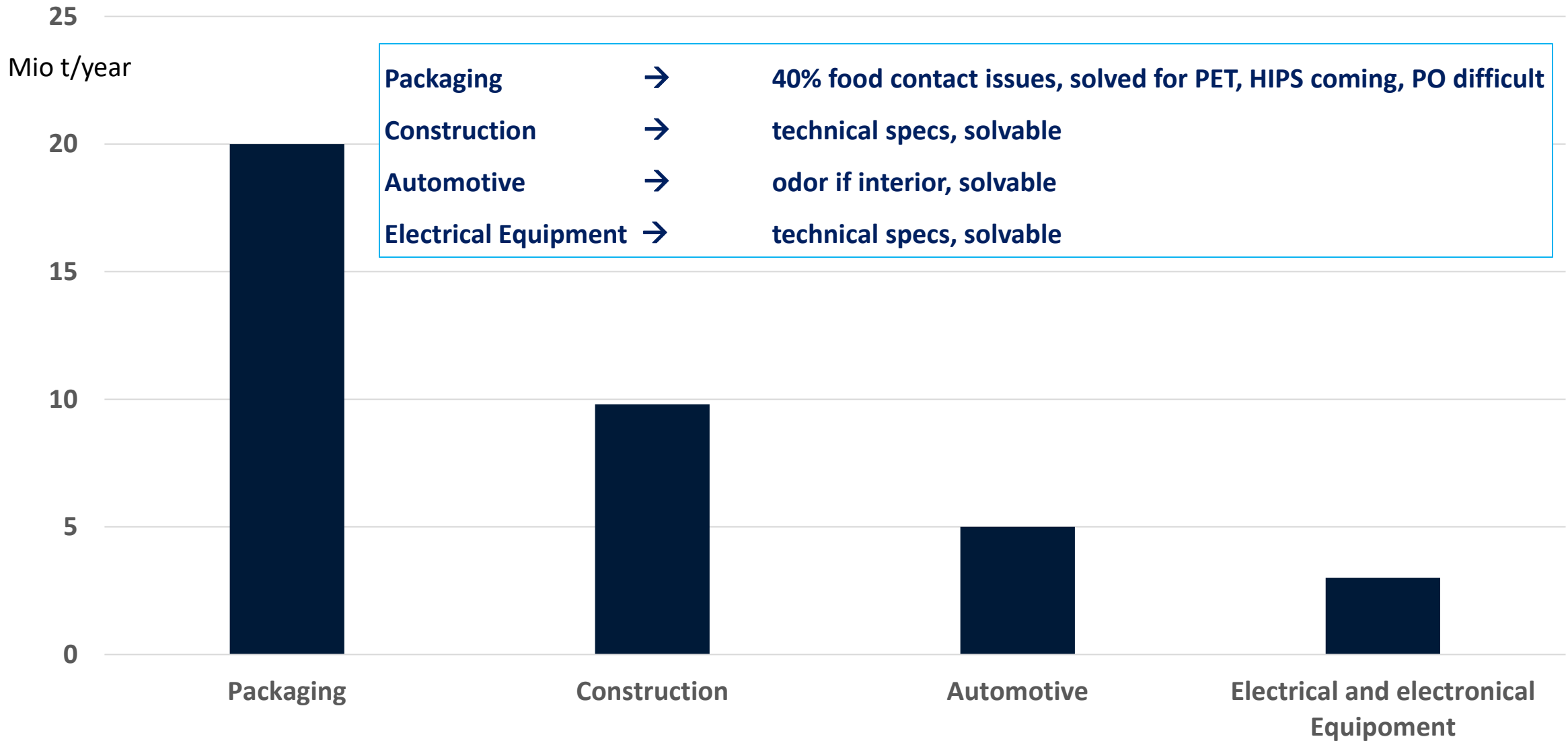
To fulfill EU plastic packaging recycling target, additional ca. 3 - 5 mio t/year Polymers must be recycled, meaning ca. 4,5 – 7 mio t/year plastic must be sorted out.

TAX ON PLASTIC PACKAGING, DISCUSSION 09.2020

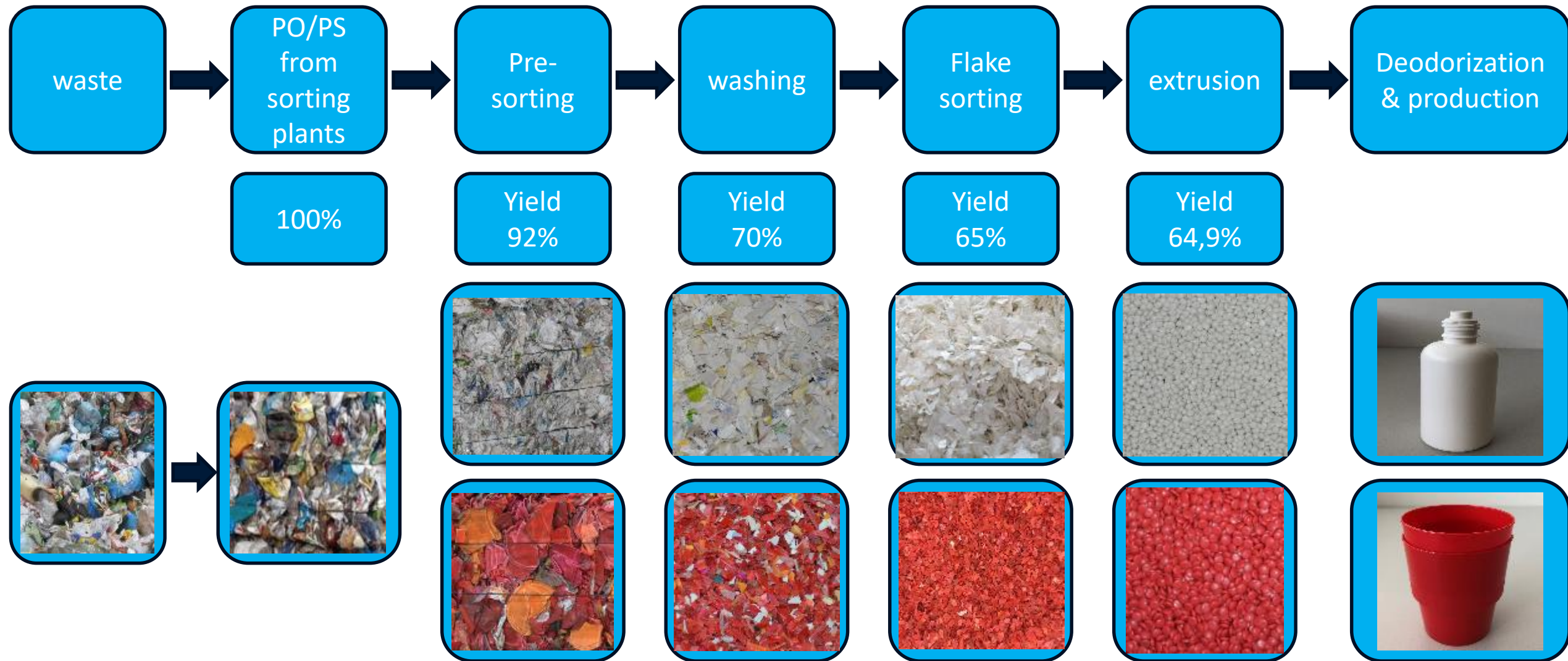


RECYCLING TO VIRGIN SIMILAR QUALITIES

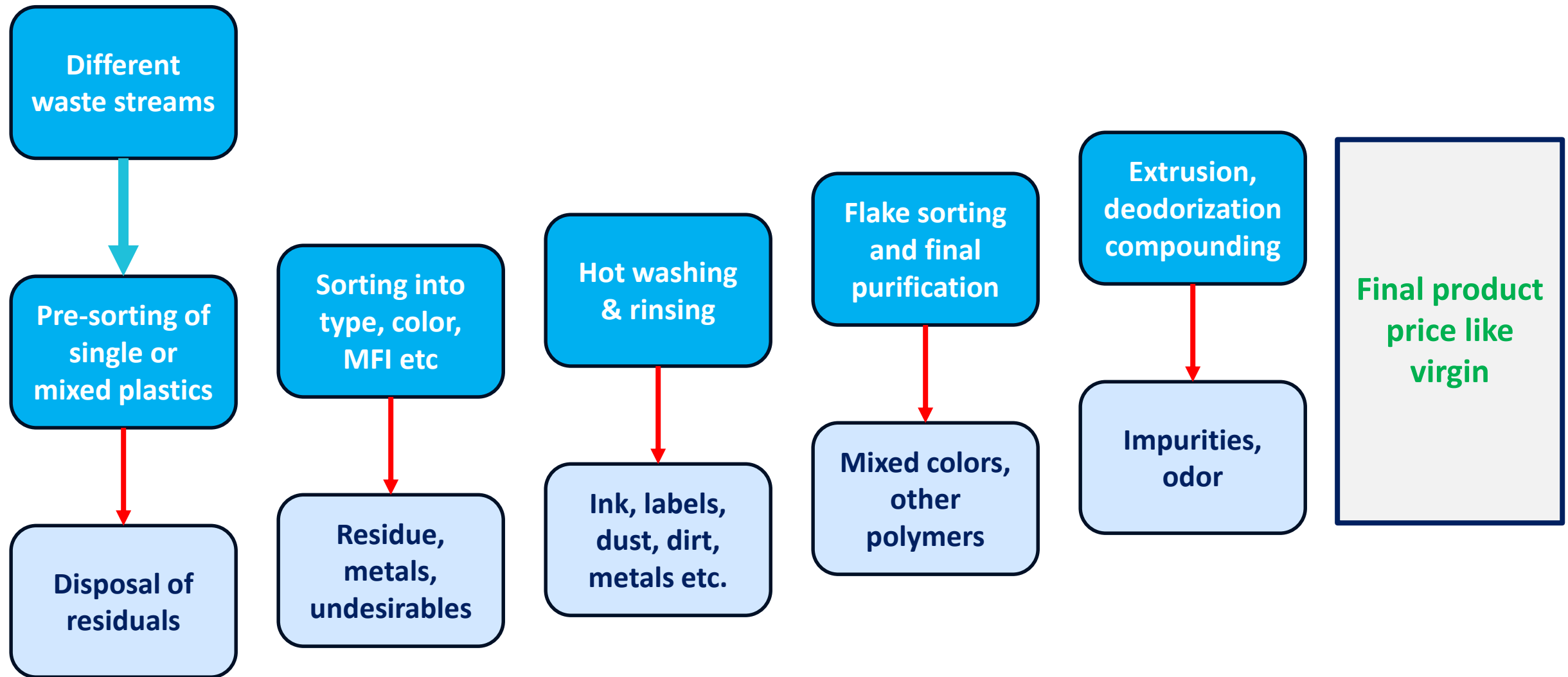
DEMAND OF PLASTICS IN EU IN DIFFERENT APPLICATIONS



QUALITY IS KEY



QUALITY IS KEY, NEEDED STEPS AND TARGET



SUMMARY

Demand:

Independent from pledges, if the quality is very similar to virgin and the price is OK, the demand for recyclates can easily increase to 50% of the virgin demand, ca. 16 mio t/a. (50 mio t/a virgin, 65% PO&PS&PET, 50% recycled content)

Recycling targets:

Due to mistakes the inhabitants do, the majority of plastic packaging material ends up in unsorted waste streams. No problem to sort plastic packaging material out of other waste stream and upgrade them to top quality resins. The main untouched potential is in residual mixed waste, all over EU. In order to fulfill the recycling targets, other waste streams must be sorted.

Quality of resins:

Tomra has proven with ca. 1.000 tons of all different plastic materials out of different waste streams, that it is possible to produce high quality resins, competitive price to virgin. The yield and final quality was very much similar, independent from the waste which was sorted. HIPS passed challenge tests, so another polymer with potential for food contact applications. First plant shortly start up.



www.tomra.com/recycling