Polystyrene End-of-Life Management in Europe

Ph.Montagné on behalf of the **European PS Producers**

Save-A-Cup General Assembly – London – Feb 11, 2010

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Association of Plastics Manufacturers

Contents

Polystyrene is a Commodity Plastic…

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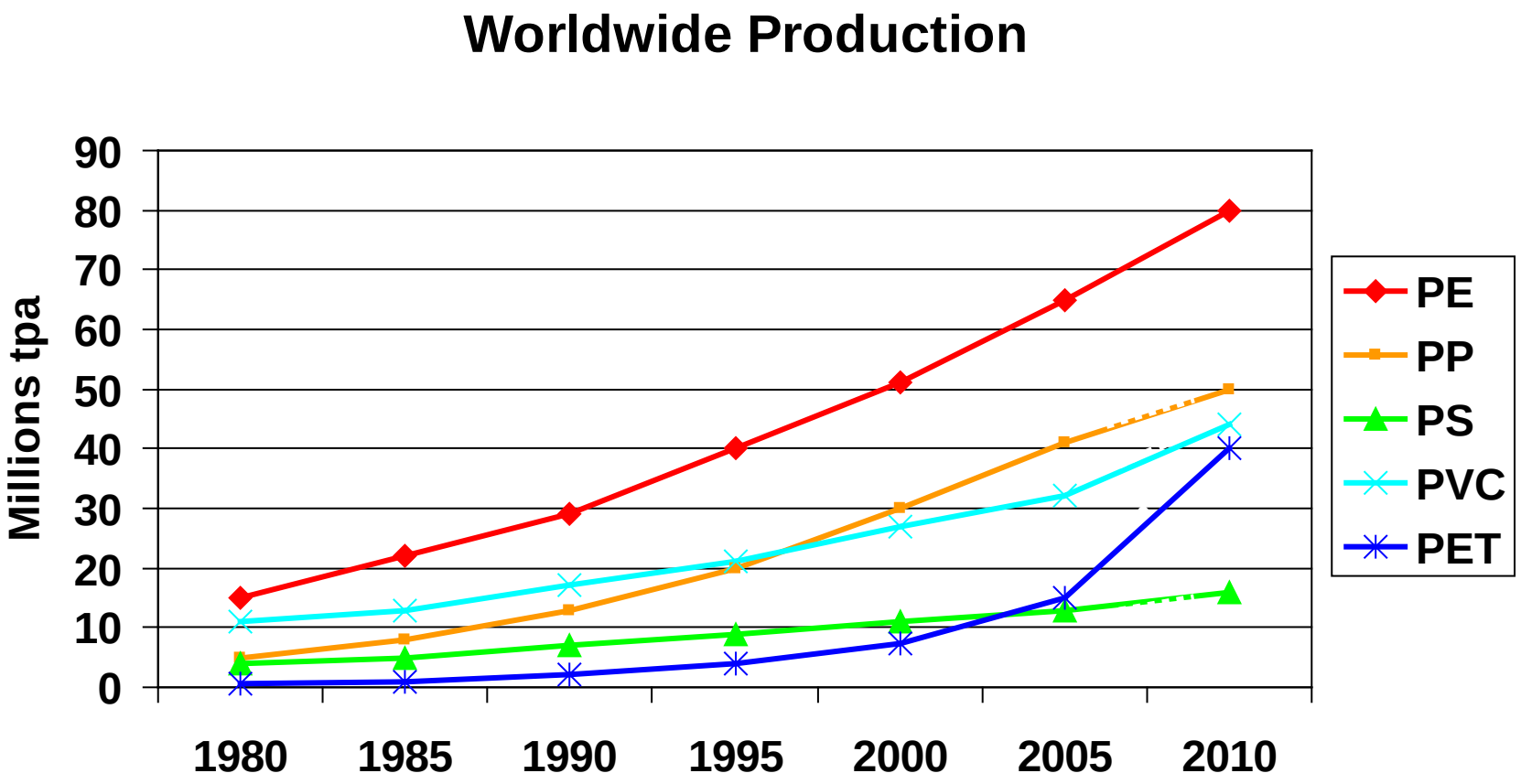

….With Numerous Applications

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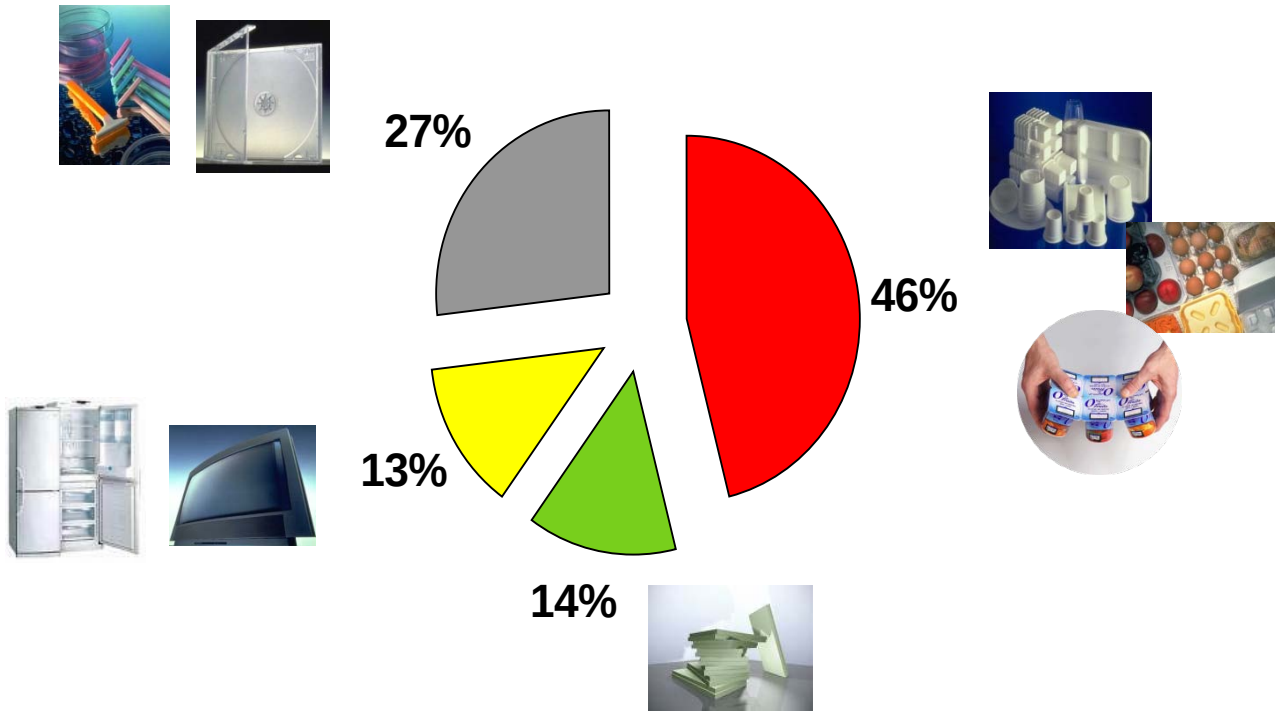
PS applications in EU27 + 2



Plastic Waste Management

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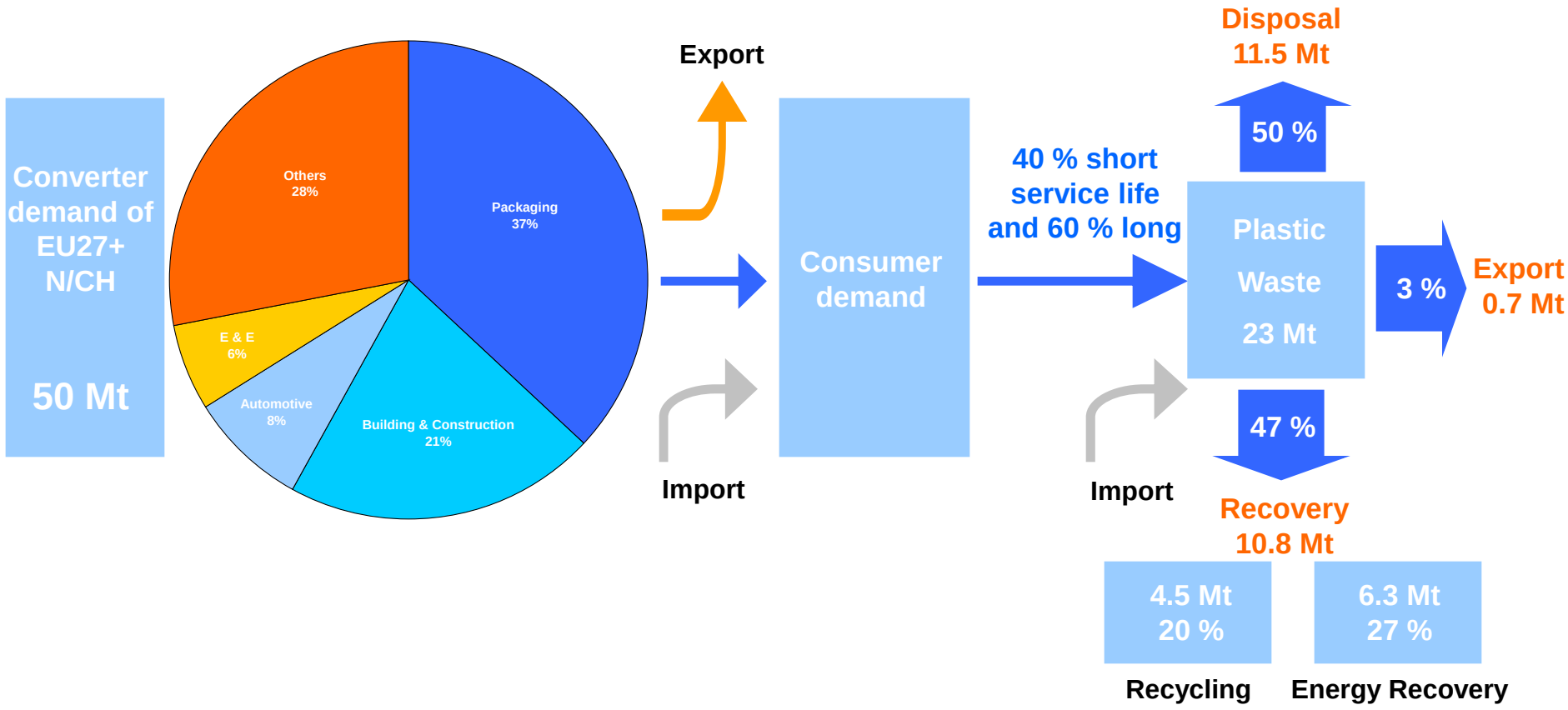
All the plastics



Source: PlasticsEurope 2008 (2007 data) & GTA Navigator

Each Country Moving at his Own Pace (data 2007)

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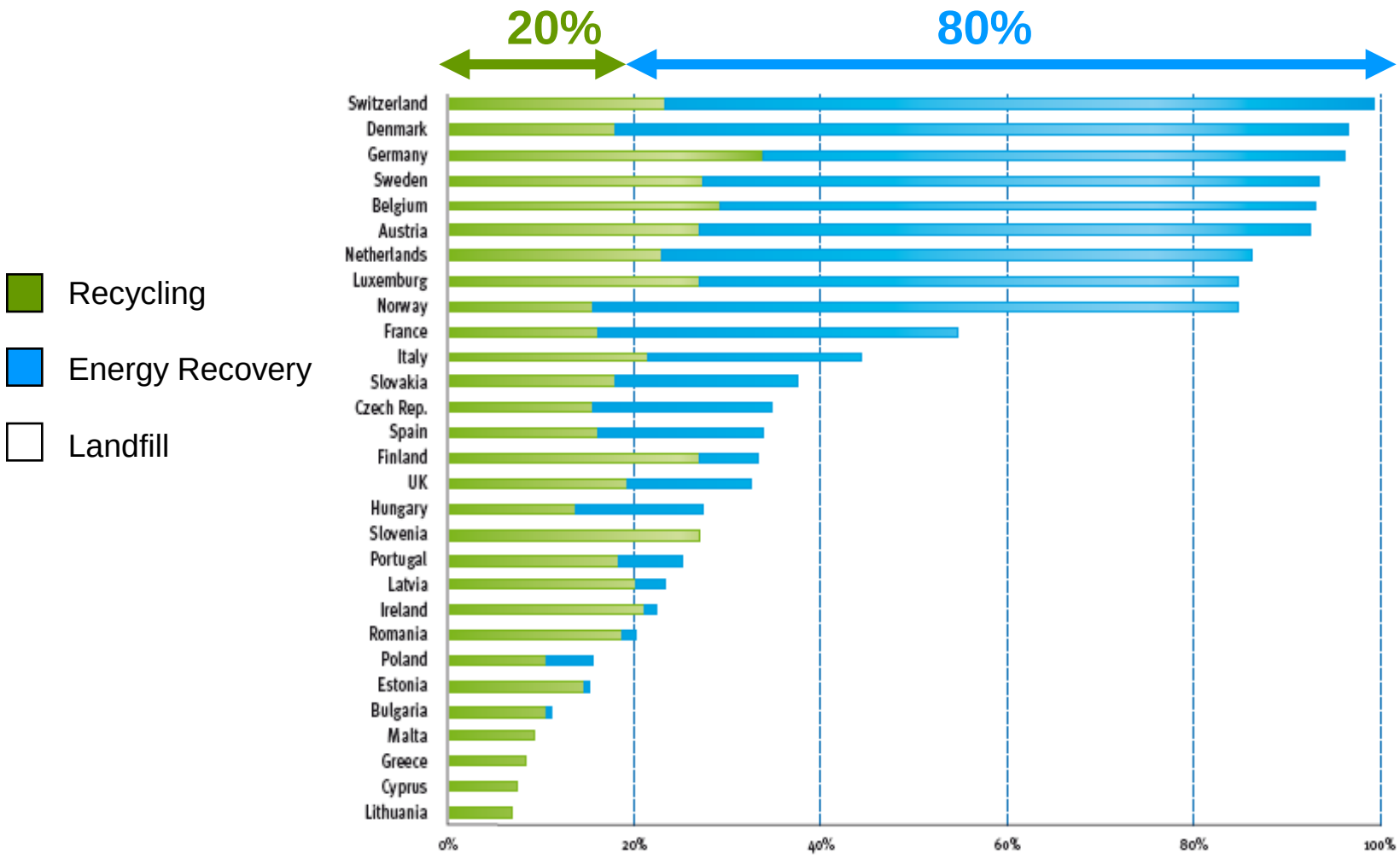

Landfill is Not the Sustainable Answer

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Only 2 Options to Defend and Implement

RECYCLING & ENERGY RECOVERY

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…In Order to Achieve the Full Recovery

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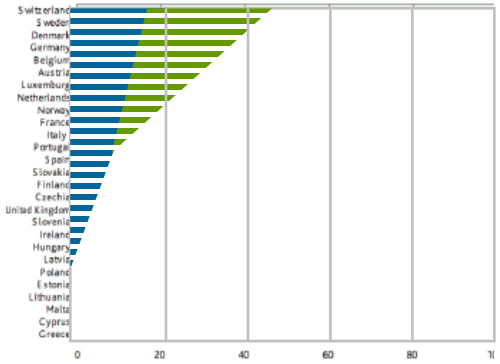

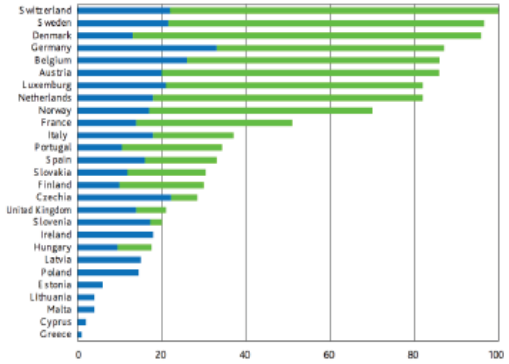

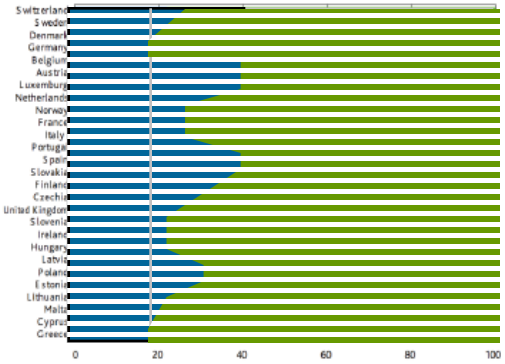

1980 **2007** **> 2020**

What About Post-Consumer Polystyrene Waste ?

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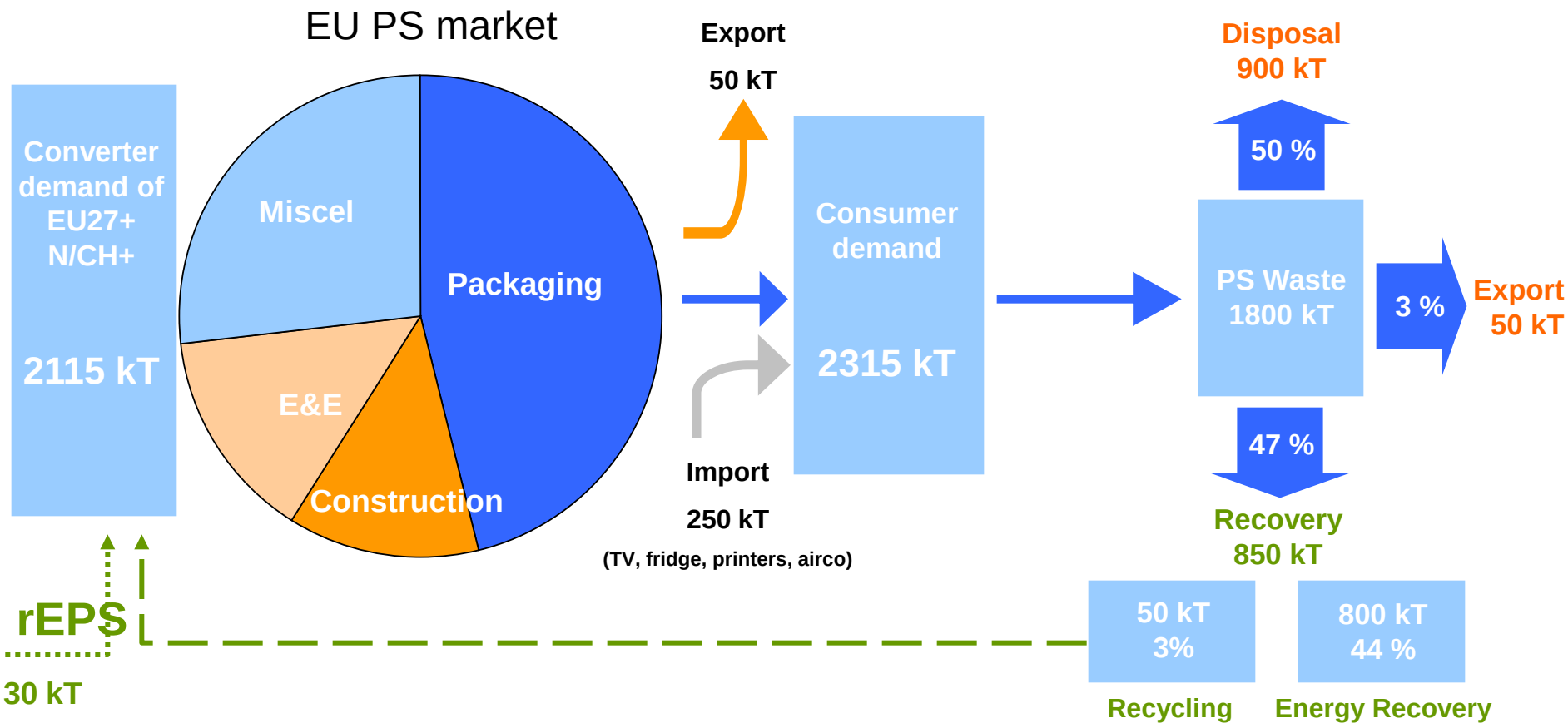
PS Waste Management



Source: 2008 estimations & Global Trade Atlas Navigator

PS Waste Management

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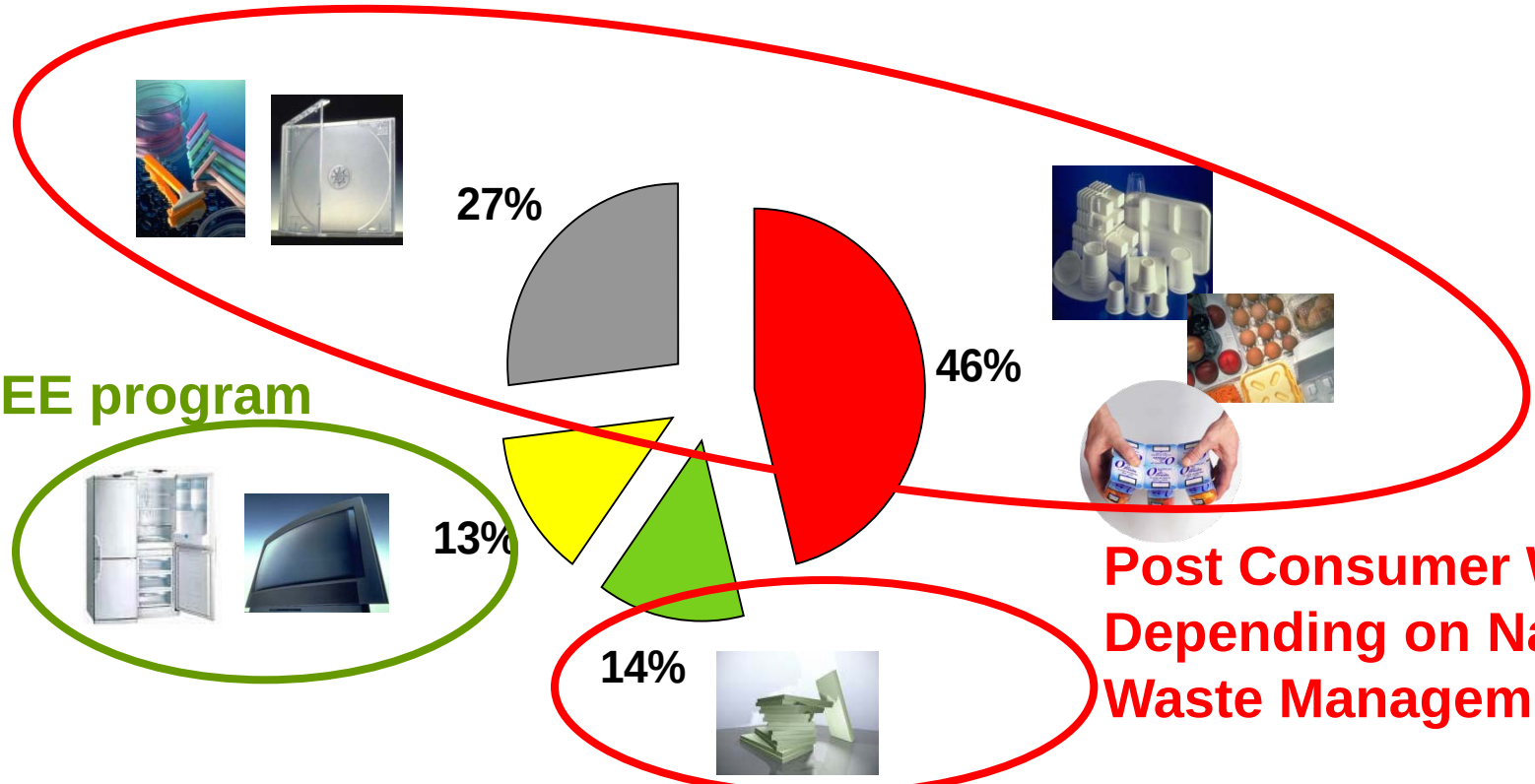
PS applications in EU27 + 2



PS Post Consumer Recycling

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- **PS Industry VISION**:
  - **All packagings collected at home (no material discrimination)**
    - PS, PE, PP, PET, Cardboard, Aluminum, Glass,… sorted out to be sent to recyclers
    - either Plastics are washed & re-granulated to be sold to converters, or Plastic Mix are transformed into SRF (Solid Recovered Fuel)

- German model of post consumer collection to be taken as example

- Current action with Valorplast in France to demonstrate this is a viable option

- Recent declaration from WRAP in UK following this vision

PS is a Very Easy Recyclable Plastic

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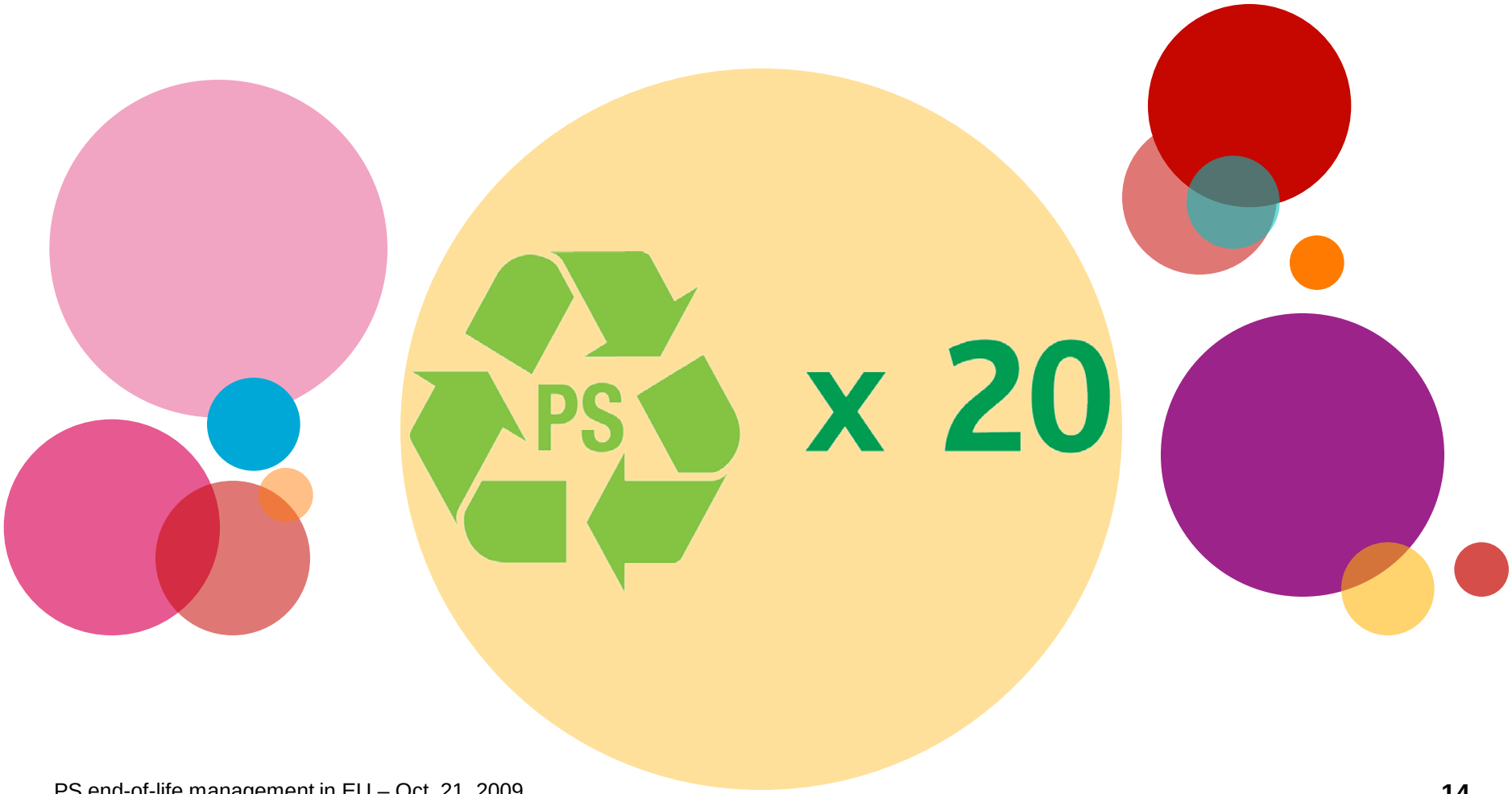
- Up to 20 times recyclable without any damage of polystyrene physical properties



PS Post Consumer Recycling

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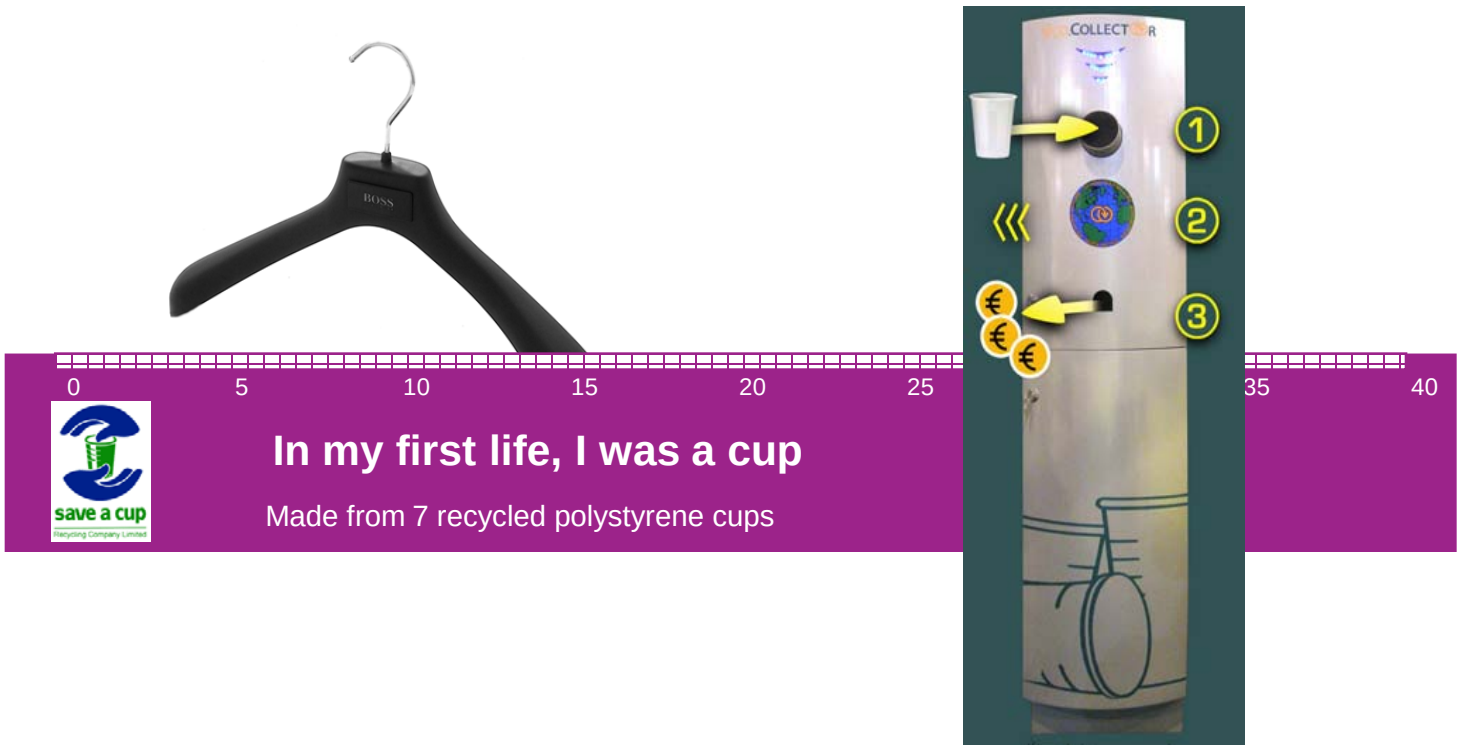
- **The question of Recyclability depends on:**
  - **the political will**
    - diversion from landfill
    - European Directive 2004/12 setting the goal to recycle **22.5 %** of the plastic packaging waste by 2008
  - **the national infrastructures:** automatic sorting centers help to recycle more and better
  - **the material value:** i.e.WEEE programs are driven by the recovery of non ferrous metals
  - **the applications:** Yogurt pots (in PP, PS, or PET) are more complex and more expensive to recycle than bottles or TV back-covers

- **Success comes from joint effort from government, national environmental agencies, industry & retailers**

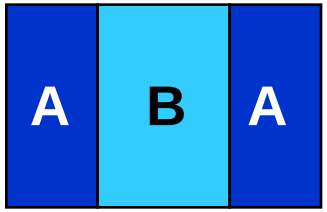
PS Initiatives – PS Cups Recycling

- Stichting Disposable Benelux (since 1991 in NL), Save-A-Cup (since 1992 in UK), Eco-collectoor (since 2008 in France & Benelux)



PS Cups Recycling – Back to PS Cups (close loop)

- Collector/Recycler: know-how in plastic collection and sorting
- PS cups manufacturer: know-how in PS conversion
- 3 layer wall A-B-A acceptable for food contact disposable once EFSA(1) certification is given on the recycling process
- Good option as long as it stays sustainable



(1) EFSA: European Food Safety Authorities

WEEE Consequences – rPS from Refrigeration to Non Food Applications

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- **Sims Recycling Solutions**, **Coolrec**, **Veolia Environment**, **Axion**, **Vogt Plastics, Robust Recycling**… are some of the main actors of WEEE programs in Europe
- **Mewa Recycling** (Germany): large supplier of dismantling equipment
- Solid Recovered Fuel (SRF) or rPS from EU refrigeration
  ➔ [30 – 40 KT/y]
- rPS ➔ coat hangers, CD boxes, flower pots, wood-like plastic benches & decks, cafetaria trays, …




WEEE Consequences
rPS from TV to TV

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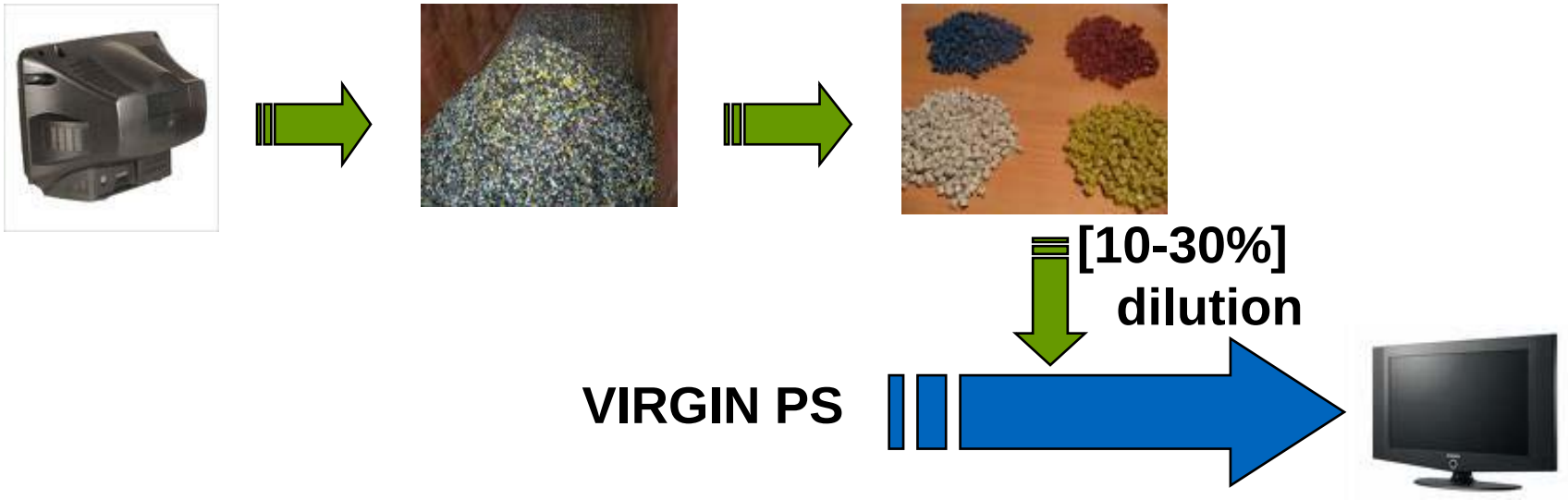
- Recycler: know-how in plastic sorting
- PS producer: know-how in PS Flame Retardant Compound formulation
- TV manufacturer: know-how in TV manufacturing



But Recycling has Limits

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It is not ecologically or economically feasible
to recycle everything !

As Other Plastics, PS Owns an Amazing Energy Value

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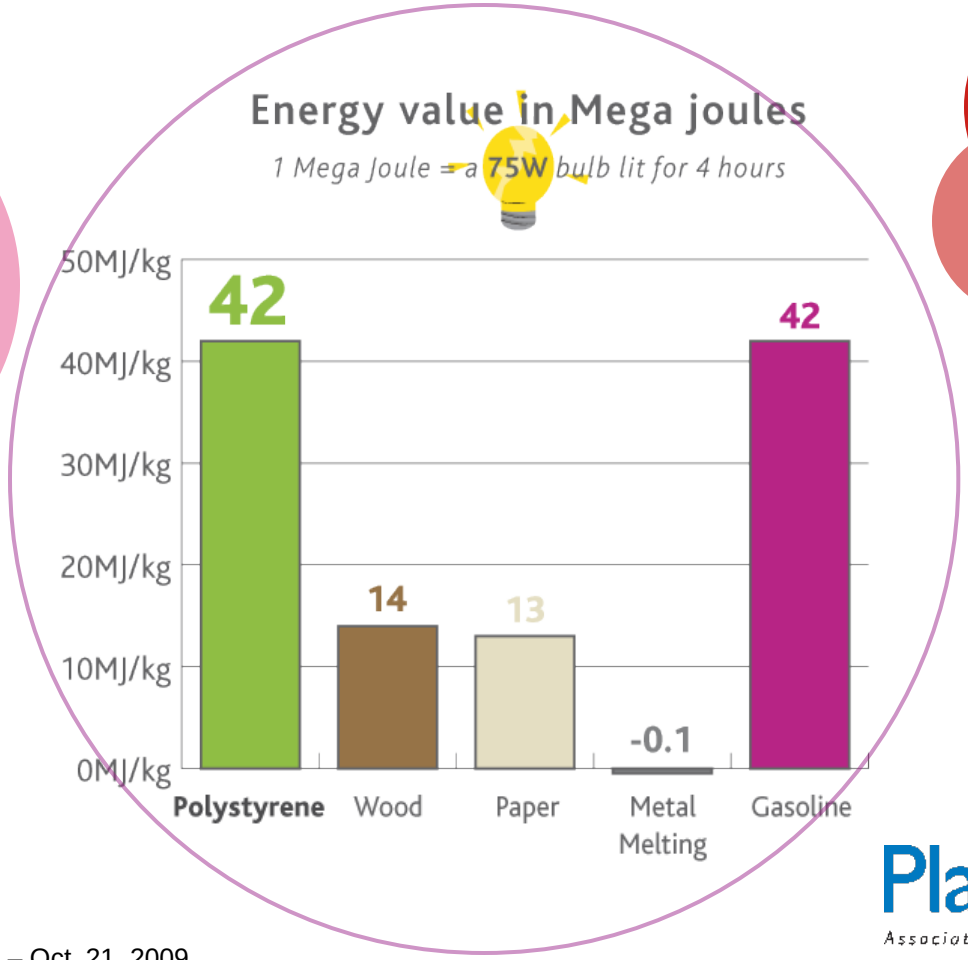
PS supplies far greater heat during its combustion in incinerator than wood of paper



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From PS to Fuel

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- **Energy recovery**: Waste incineration today is one of the **cleanest** and most **strictly regulated** industrial activities, able to produce energy (electricity and/or vapour) as a counterpart of waste elimination

- Private initiatives to transform PS/PP/PE into **fuel** for heaters are currently at pilot scale

Energy Valorisation

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The energy recovered from the municipal waste of 5 million Parisians allows to heat 200.000 apartments

Recycling Vs Energy Valorisation

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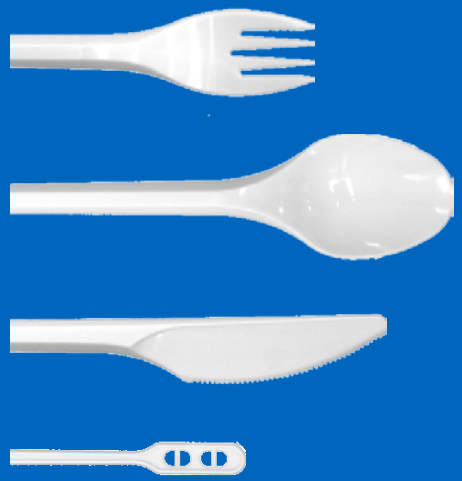
For non-recyclable waste, energy valorisation is clearly the environment-friendly complementary solution

Polystyrene
A Material Still Full of Promise



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