



# CHALLENGES AND SOLUTIONS FOR PLASTIC RESOURCE CIRCULATION

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G20 Resource Efficiency Dialogue

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# Plastics: Ongoing OECD work

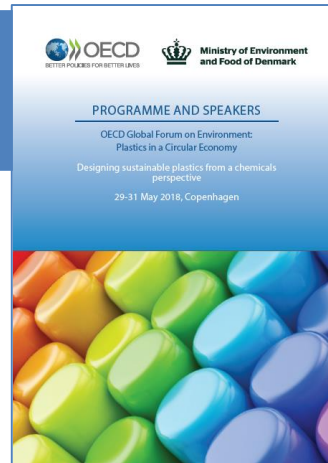


## Improving markets for recovered plastics

- What is the **current state** of secondary plastics markets?
- What are the **key barriers** to plastic recycling?
- What are **policy measures to strengthen these markets**?

## Better alignment of chemicals and waste management policies

- How to ensure **traceability** of hazardous substances through the product lifecycle?
- How to improve the **quality** of recovered plastics (*ex ante* and *ex post*)?
- How to address potential **regulatory bottlenecks**?

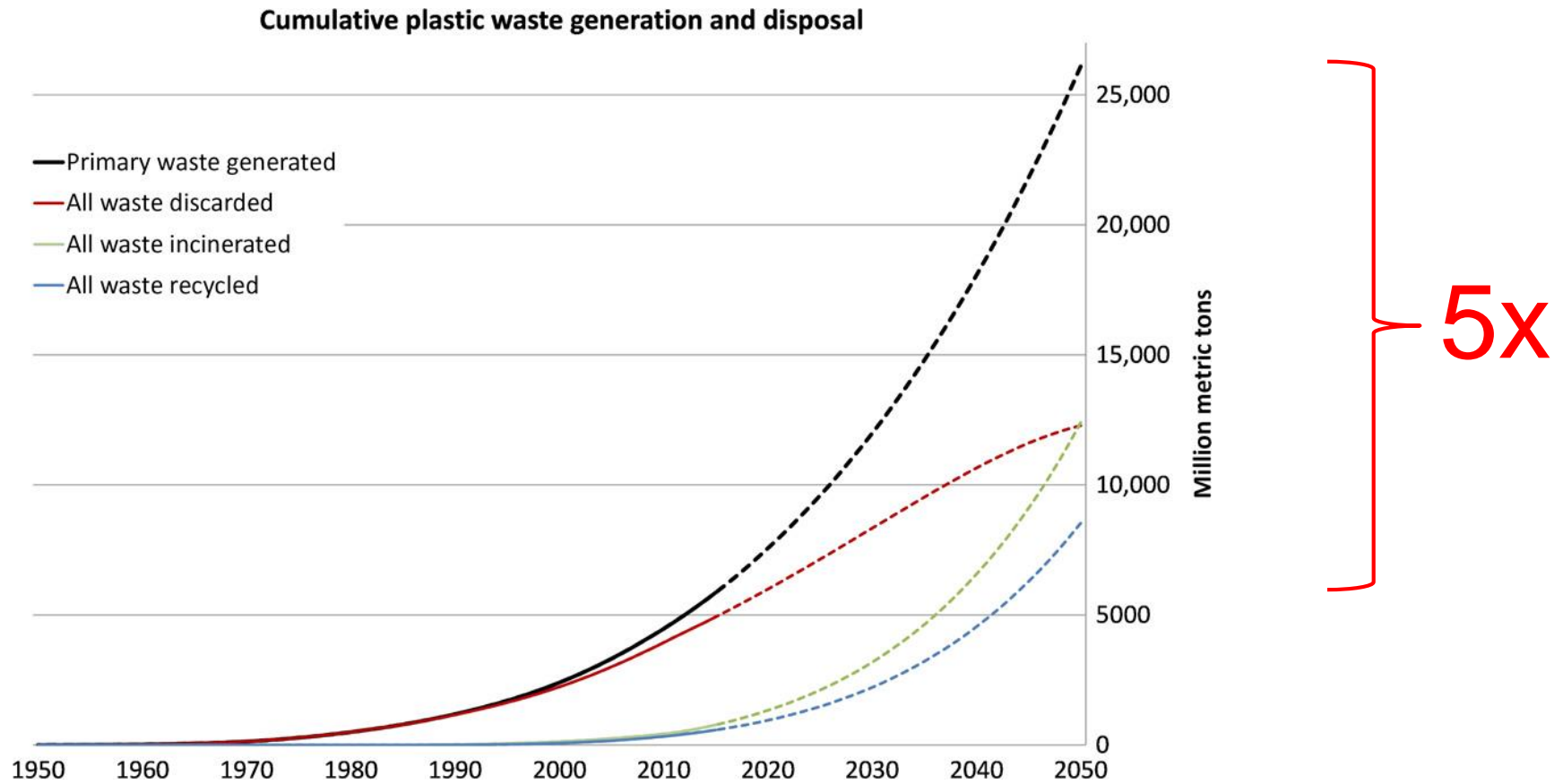


## Ongoing work:

- **Microplastics**
- Implications of **waste prevention measures** targeting single-use plastics
- **Sustainable design** of plastics from a chemicals perspective



# Plastic production is growing and so is waste

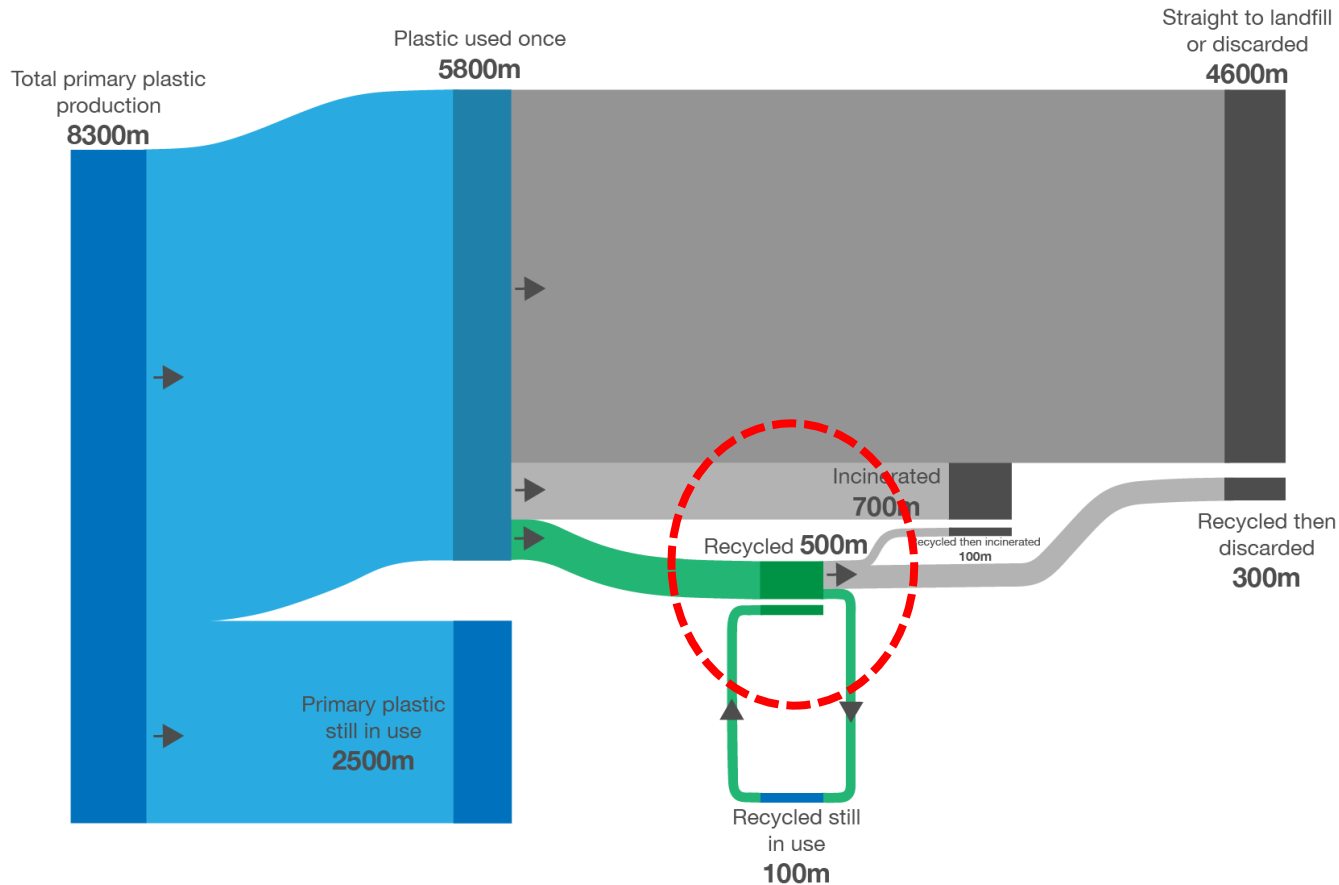


Geyer et al (2017), *Production, use, and fate of all plastics ever made*, Science Advances.



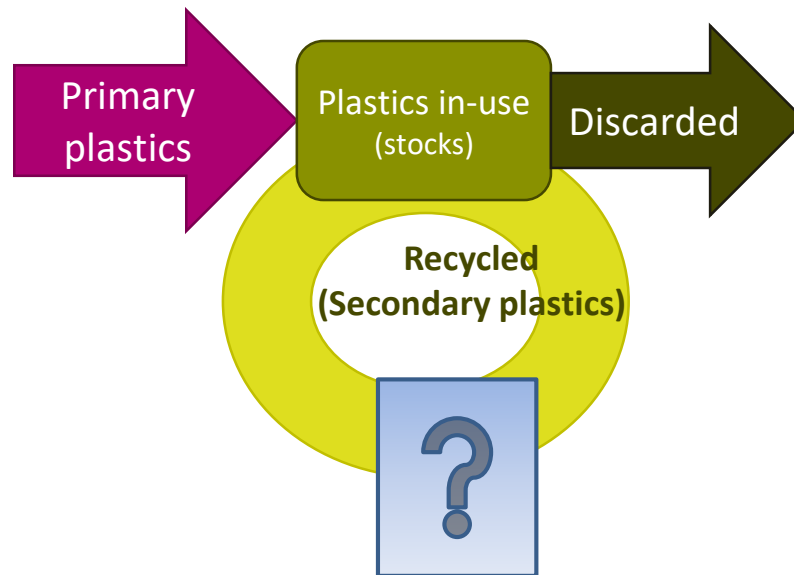
# But recycled market share is very small

**Balance of plastic production and fate (m = million tonnes)**  
8300m produced → 4900m discarded + 800m incinerated + 2600m still in use (100m of recycled plastic)





# So, why are markets for secondary plastics not working?





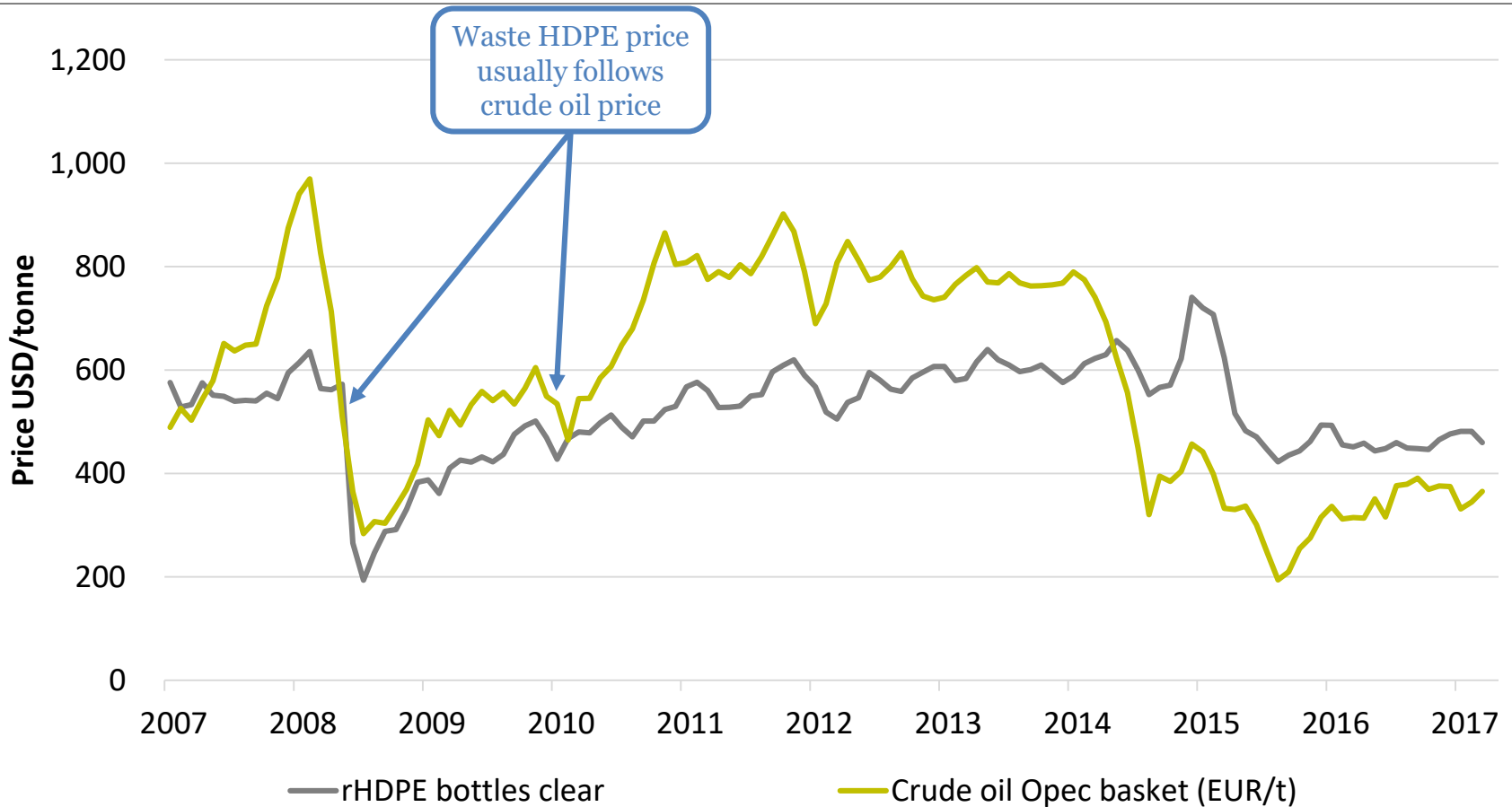
## High costs of collection, sorting and processing

- The widely distributed and diverse nature of sources of plastics waste.
- Combination of polymers of different types makes their separation for recycling difficult and costly.
- Post-consumer plastics commonly contain nonrecyclable and non-target materials.



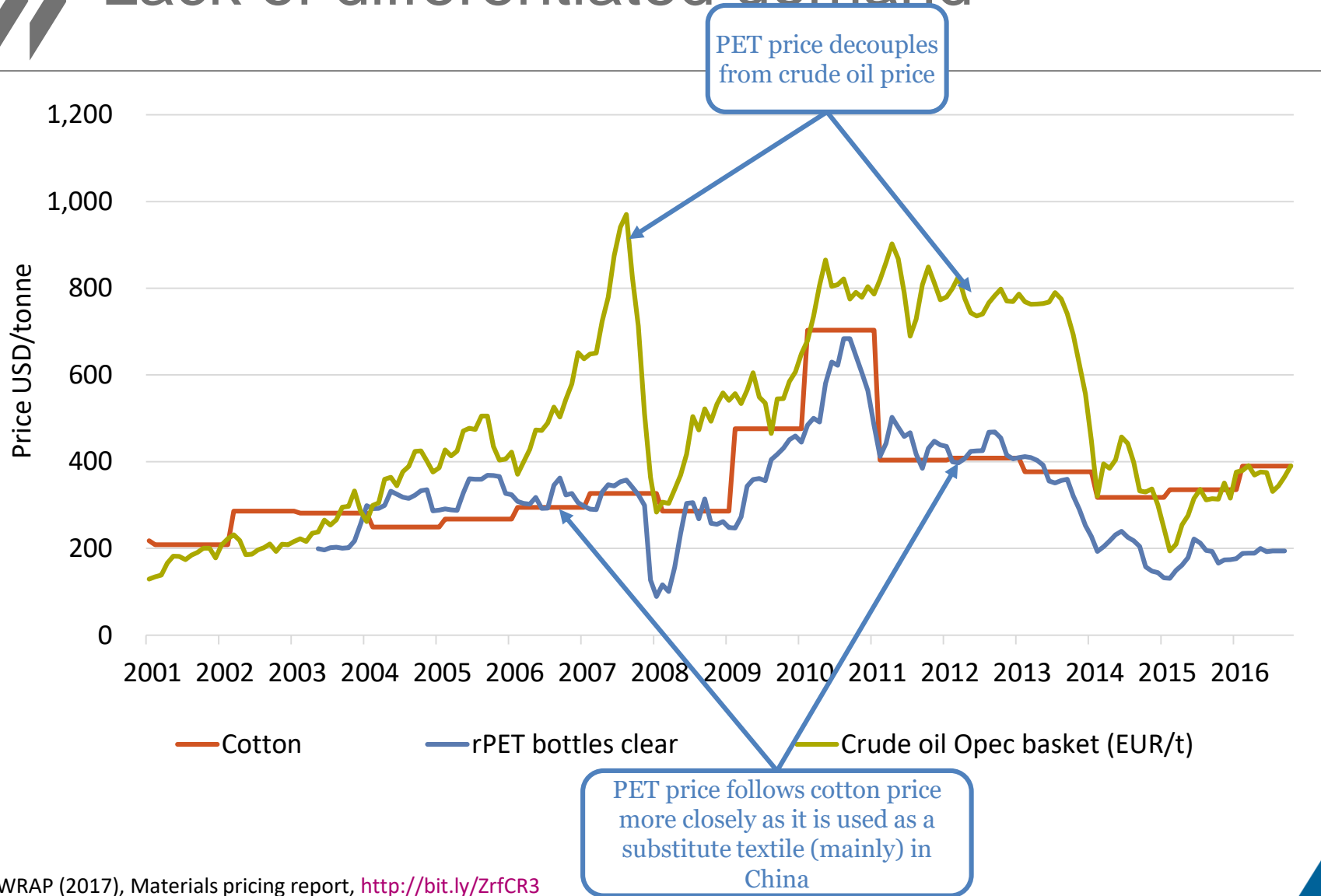


# Demand side issues: Secondary plastics compete with virgin material





# Lack of differentiated demand





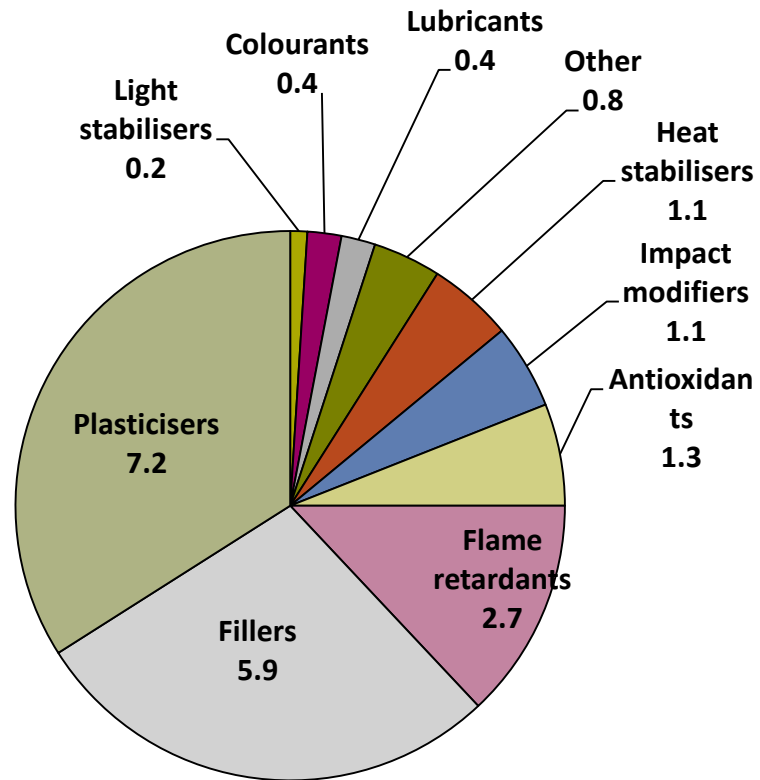


# Limited market resilience increases risks

- Secondary sector characterised by many small actors who are vulnerable to market shocks.
- Primary producers are 10 times bigger.
- Global plastics markets have historically been concentrated in a small number of countries
- Effects of recent import restrictions illustrate the risks of market concentration.



# Additives



- Numerous additives used in primary plastics.
- Improve strength, durability, ductility, fire retardancy.
- Some are designed to reduce durability – biodegradable plastics.
- Some additives are hazardous.
- Uncertainty over the presence of additives compounds the issue.

## Global mass of additives used 2015 (Mt)



# Policy solutions

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## Demand side

- recycled content product labels
- public procurement
- recycled content rules
- tax on virgin plastics
- better management of trade in waste plastics

## Supply side

- Introduction of dual or multiple stream collection systems
- Extended producer responsibility and deposit-refund systems
- Restrictions on the use of hazardous additives
- Incentives for better plastics design
- Increase ODA for waste collection and treatment in developing countries
- Efforts to work with the informal sector

# Thank you for your attention

For more information on OECD work on plastics, visit:  
[oe.cd/recycled-plastics](https://oe.cd/recycled-plastics)

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