

The New Plastics Economy and Implications for the Pouch Industry

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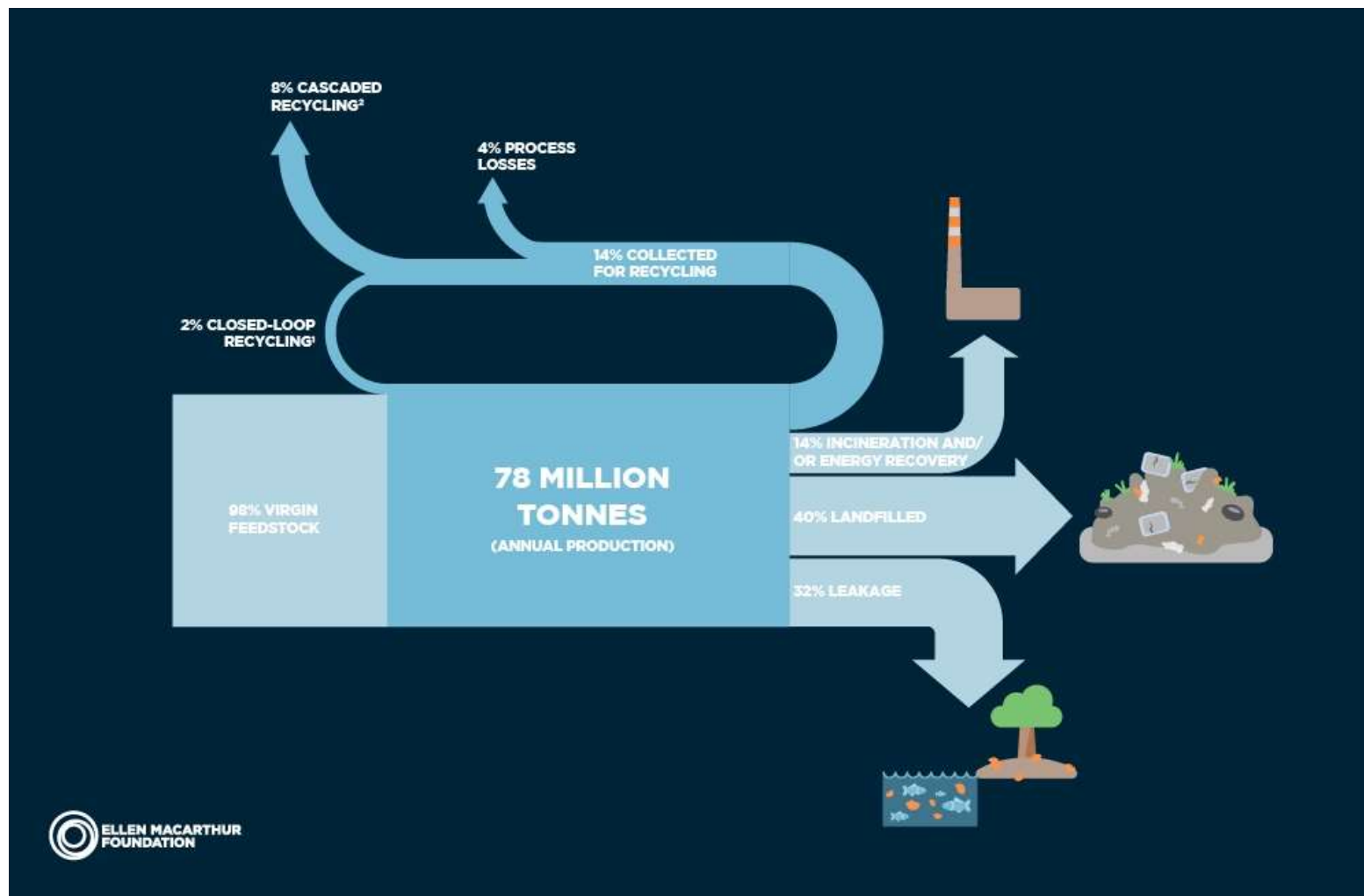
Global Pouch Forum, June 16, 2017

New Plastics Economy – What is It?

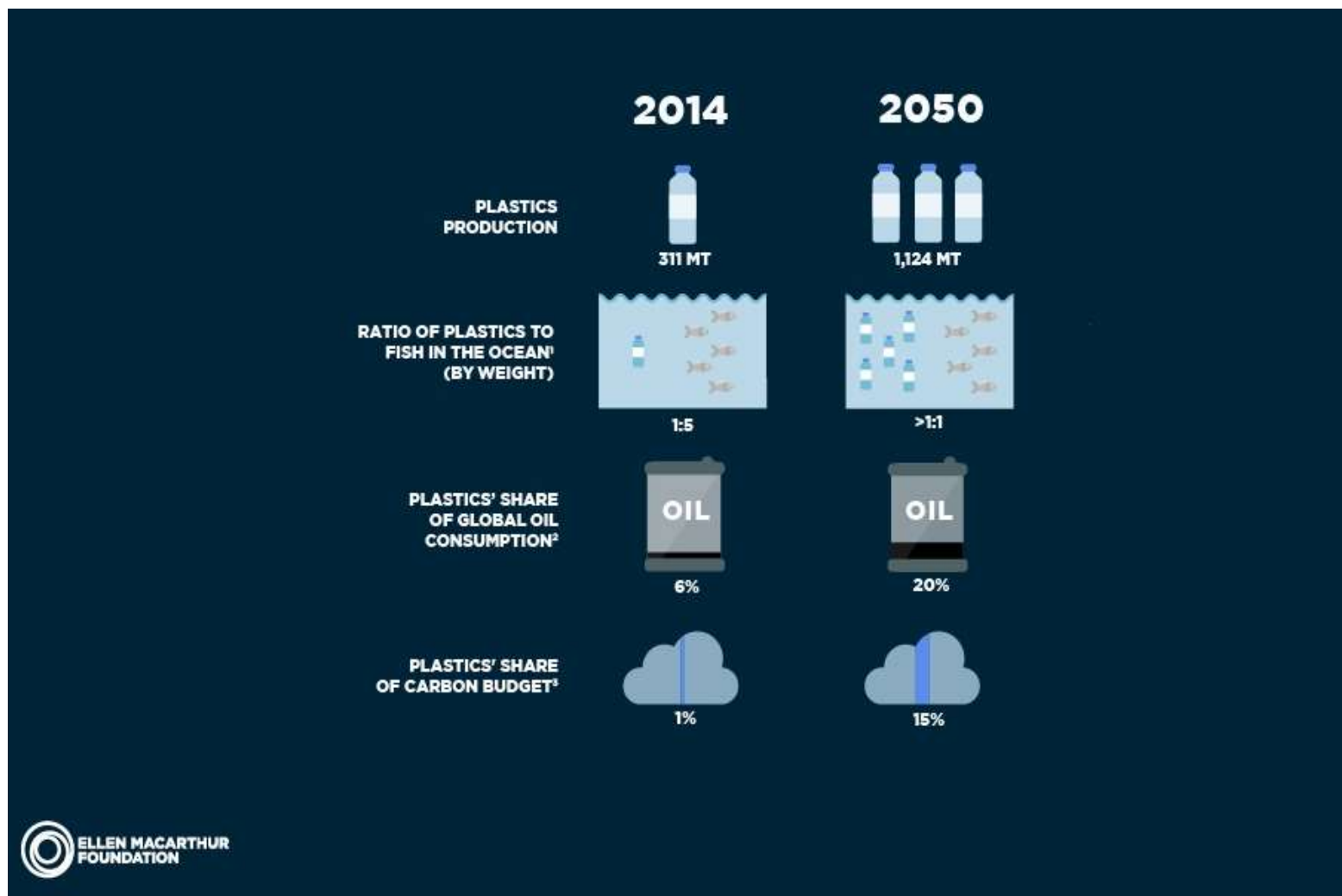
- ⚡ Subset of Circular Economy
- ⚡ Distinct initiative identified by Ellen MacArthur Foundation with dedicated staff and resources
- ⚡ Moves from philosophical circular economy discussions to practical action plan
- ⚡ Two major research reports – 2016, 2017
- ⚡ Presents 3-pronged strategy to increase reuse/recycling of plastic packaging to 70%



Why a New Plastics Economy is Needed



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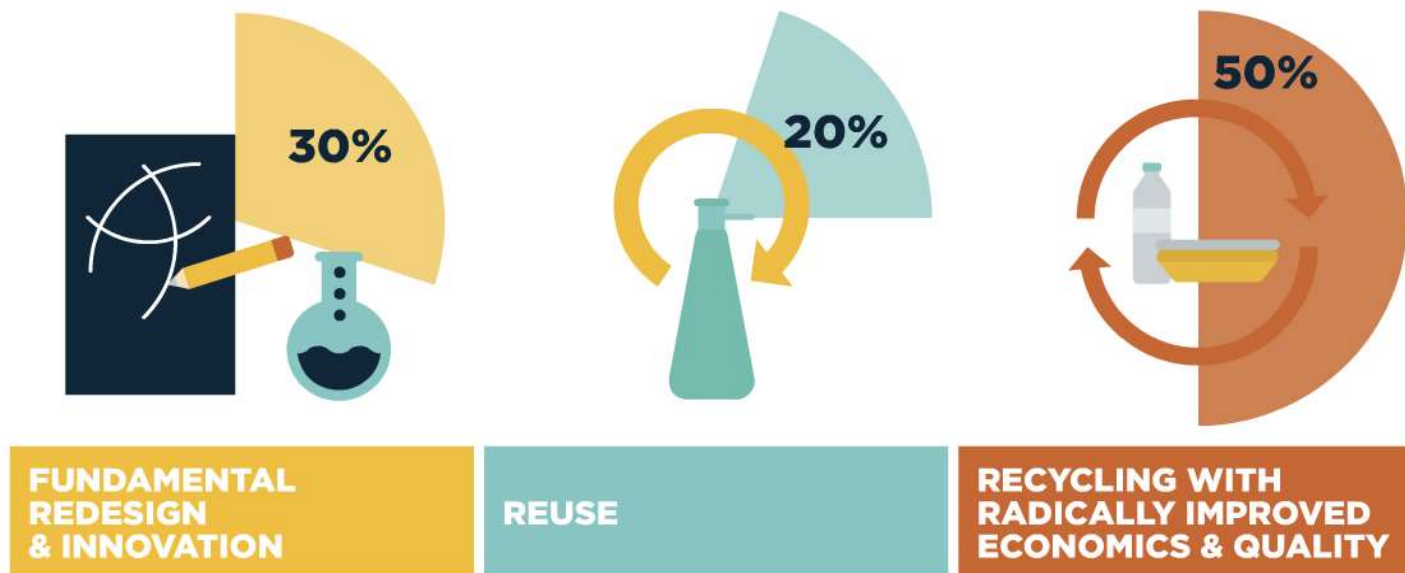


New Plastics Economy 3-Year Initiative



New Plastics Economy

An action plan for the global plastic packaging value chain that contains three transition strategies



Action Plan Details

EXAMPLES	SHARE OF PLASTIC PACKAGING MARKET % BY WEIGHT	PRIORITY SOLUTIONS
<p>SMALL-FORMAT Lids, tear-offs, caps, sachets and generally all items smaller than 40 - 70mm</p> 	~10%	REDESIGN packaging formats and/or delivery models (and after-use systems)
<p>MULTI-MATERIAL Packaging with inseparable layers of different materials</p> 	~13%	INNOVATE in materials and reprocessing technologies
<p>UNCOMMON MATERIALS Uncommon plastic packaging materials like PVC, EPS, PS</p> 	~10%	Actively explore to REPLACE as a priority PVC, EPS, PS by known alternatives
<p>NUTRIENT-CONTAMINATED Coffee capsules, organic waste bags, takeaway food packaging</p> 	NOT QUANTIFIED	SCALE UP compostable plastics for targeted applications to help recover nutrients of packaging contents

FUNDAMENTAL REDESIGN AND INNOVATION is needed for >50% of plastic packaging (by no. of items), or >30% of plastic packaging (by weight)*

* Total is not the sum of separate categories due to overlap

Source: New Plastics Economy initiative analysis (see Appendix for details)

Does it Have Traction?



NPE Innovation Challenge – 2 Options

⚡ Circular Design Challenge

- Asks applicants to rethink how to get products to people without generating plastic waste.
- Focus: Small-format packaging items like shampoo sachets, wrappers, straws and coffee cup lids.

⚡ Circular Materials Challenge

- Currently, around 13 per cent of packaging is multi-laminates.
- Innovators are invited to find alternative materials that could be recycled or industrially composted.



\$2 Million Prize Pool



- Successful innovators can win:
 - >\$1,000,000 in grants for Circular Design Challenge, shared by multiple winners at different stages of solution development
 - >\$1,000,000 in grants for Circular Materials Challenge, shared by up to five winners
 - Access to NPE Innovation Accelerator – 12-month program offering access to industry experts, commercial guidance, feedback on user and scalability requirements, advice on performance expectations, and access to testing & development labs
 - Visibility to major businesses, innovator community and the public

Recycling in the New Plastics Economy

- ⚡ Recycling vs. composting biodegradable plastics or conversion to energy
 - Why take performance polymers and down-cycle to dirt (if compostable) or energy?
- ⚡ R&D is continually advancing recyclability
 - Compatibilizers (e.g., Dow Retain additive)
- ⚡ Making pouches recyclable will entail:
 - Using compatible resin layers
 - Using layers that can be compatibilized



Role of Bioplastics in New Plastics Economy

- ⚡ Crossover connection between renewables loop and finite materials loop
 - Performance polymers that are renewable/regenerative
- ⚡ Additional feedstocks will be needed as there is not perfect 100% recycling
- ⚡ Lots of developmental work still to be done
 - Example: Danimer Scientific and PepsiCo collaborating on biodegradable resins for flexible packaging



What to Expect for Pouches Going Forward



- ⚡ Increased demand from global brands for pouch suppliers to design for recycling, and selectively for composting
- ⚡ Increased R&D on renewable plastics – sustainable sourcing, feedstock use
- ⚡ Materials loss from the system – not acceptable
- ⚡ Bridging technologies until circular recycling solutions are developed
 - Energy Bag
 - Pyrolysis and gasification options

Collaboration Opportunities

- ⚡ Work toward Circular Economy objectives to thrive in the New Plastics Economy
- ⚡ Work with suppliers on designs with renewable and recyclable materials, including using recycled content
- ⚡ Support and participate in recyclability trials and research
- ⚡ Support development of sustainably-sourced renewable materials supply
- ⚡ Enter the New Plastics Economy Innovation Challenge:
<https://newplasticseconomy.org/innovation-prize>
- ⚡ Stay abreast of developments and get involved:
<https://newplasticseconomy.org/>

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