

# Value Chain Collaboration

## Key to Supporting a More Circular Economy for Plastics

**Alex Keane**

Market development – primary packaging

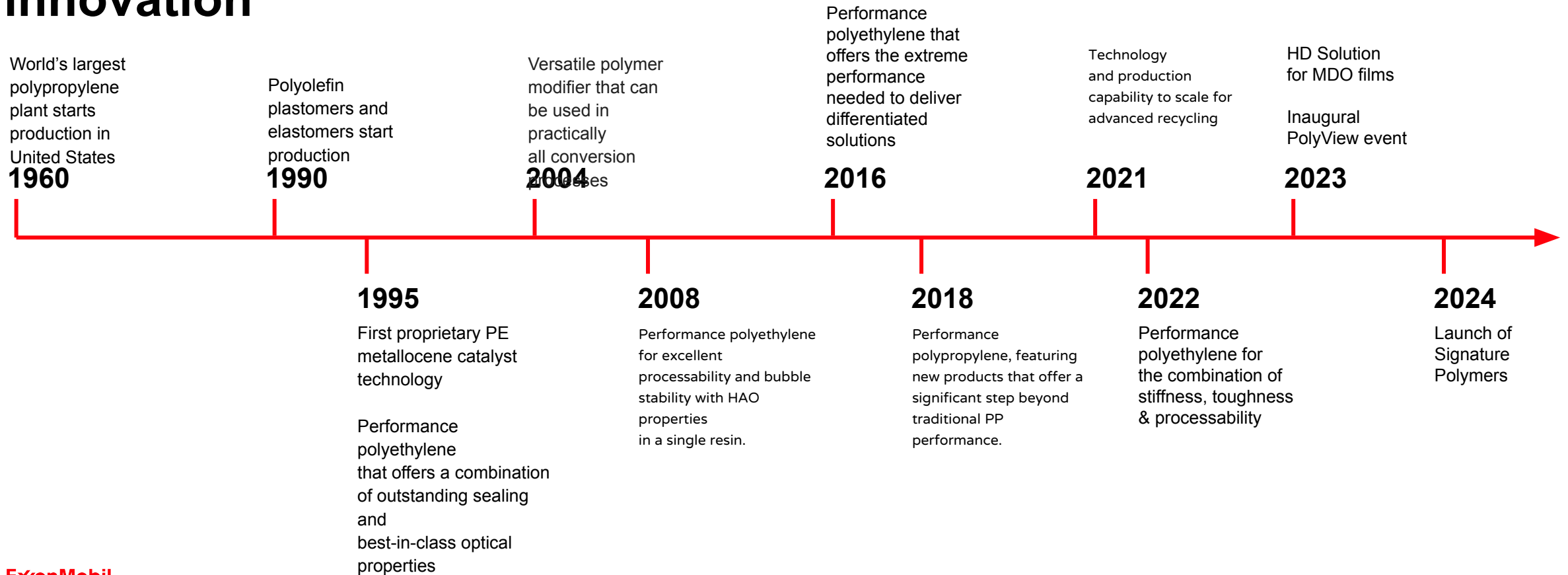
**Meredith Burtman**

Market development – advanced recycling



# A timeline of success through our commitment to continued innovation

As the world's leading supplier of polymers, ExxonMobil remains steadfast in its pursuit of continuous innovation and the development of novel product lines and solutions. This unwavering dedication stems from our desire to effectively address the ever-changing and intricate demands of our customers.



# **Signature Polymers represents the most important commitment to service and partnership we have ever made**

This commitment is about:

- Listening to and understanding our customers at a much deeper level
- Enhancing their experience at every touchpoint they have with us
- Expanding our thought leadership to facilitate partnerships through the industry



# Collaboration key to achieving high performance solutions



**Challenge:** In the EU 50% of frozen food packaging is made with multi-material, laminated film that can be difficult to recycle

**Solution:** A simplified PE based single ply film designed to resist sharp edges in the frozen food chain.

**Results:** Enabled Constantia and Bonduelle to design high-performance, downgauged, recyclable\*, non-laminated freezer film with brand appeal.



**Challenge:** Nestlé wanted to incorporate 25% postconsumer recycled content (PCR) in collation shrink.

**Solution:** Four parties worked to develop a PE coextruded formulation that provides a combination of excellent toughness, high clarity and a tailored balance between elasticity and holding force.

**Results:** The shrink film solution incorporating 25% PCR content has made it possible for Nestlé to meet their sustainability KPI in Central America.



**Challenge:** Use the latest technology to create high-performing, easier-to-recycle\* package.

**Solution:** This unique value chain collaboration leveraged high barrier coatings and inks that can both be removed in industrial hot washing conditions.

**Results:** Enables customers to design de-inkable, recyclable\* full PE \*\* polyethylene pouch with barrier properties.

# The global waste management challenge

- ~3 billion people worldwide are estimated to lack access to controlled waste disposal facilities<sup>1</sup>
- ~12% of the global municipal solid waste stream is plastic<sup>2</sup>
- Right now, less than 10% of plastic waste is recycled<sup>3</sup>
- Solutions will require innovation and global collaboration among the plastics value chain, governments, NGOs, and consumers

<sup>1</sup> United Nations - <https://unhabitat.org/news/10-feb-2020/un-habitat-partners-with-wwf-to-tackle-global-challenge-of-waste-management-in>

<sup>2</sup> World Bank. What a waste 2.0

<sup>3</sup> Source: (National Overview: Facts & Figures on Materials, Wastes and Recycling) [EPA.gov](https://www.epa.gov)



# Supporting the circular economy through advanced recycling

01

Even under the IEA Net Zero Emissions by 2050 scenario, global demand for primary chemicals is projected to be 20% higher than 2022.\*

02

Right now, less than 10% of plastic waste is recycled\*

03

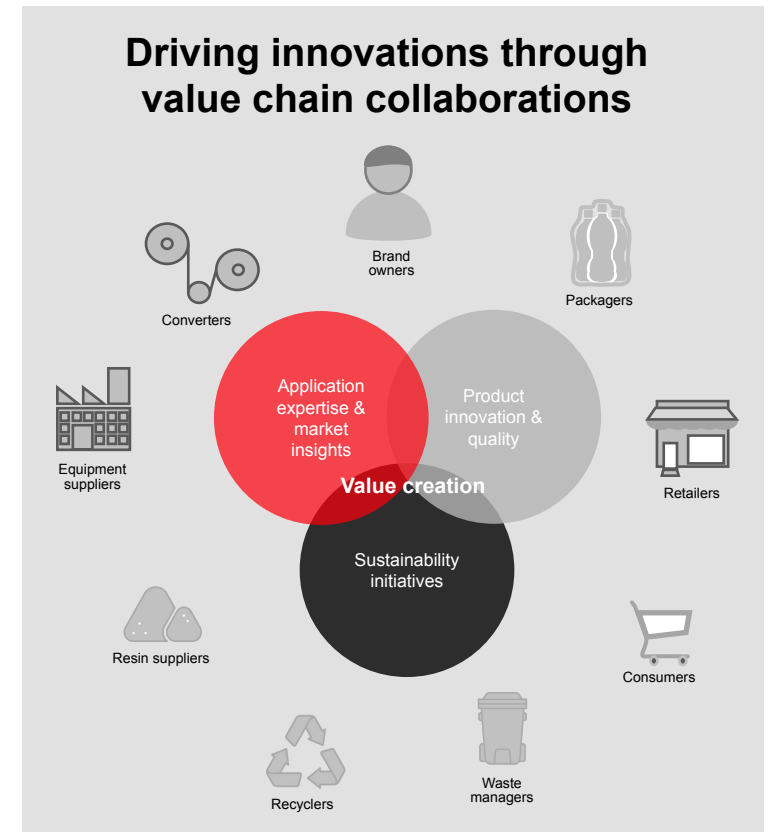
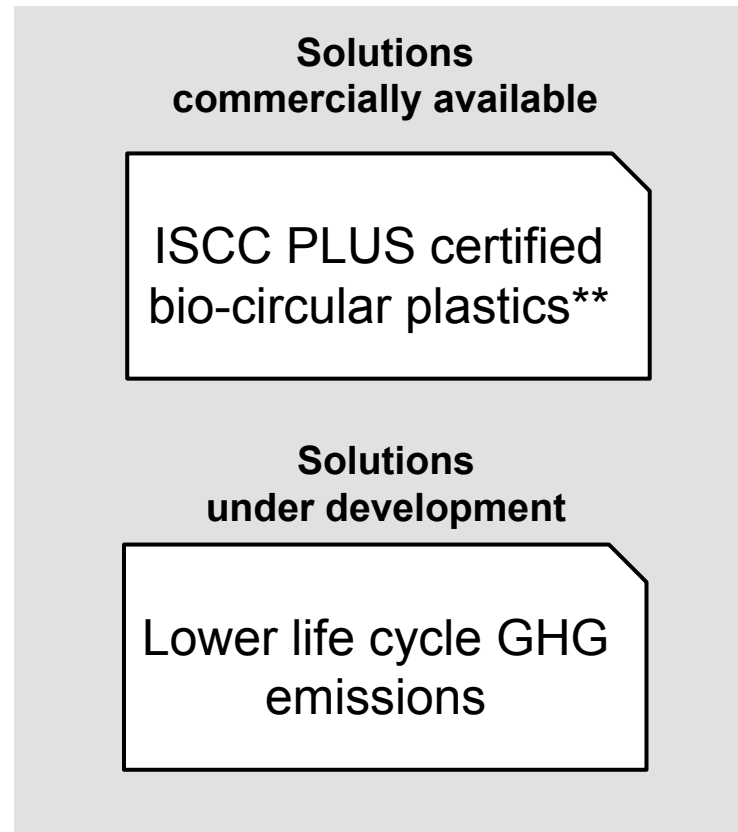
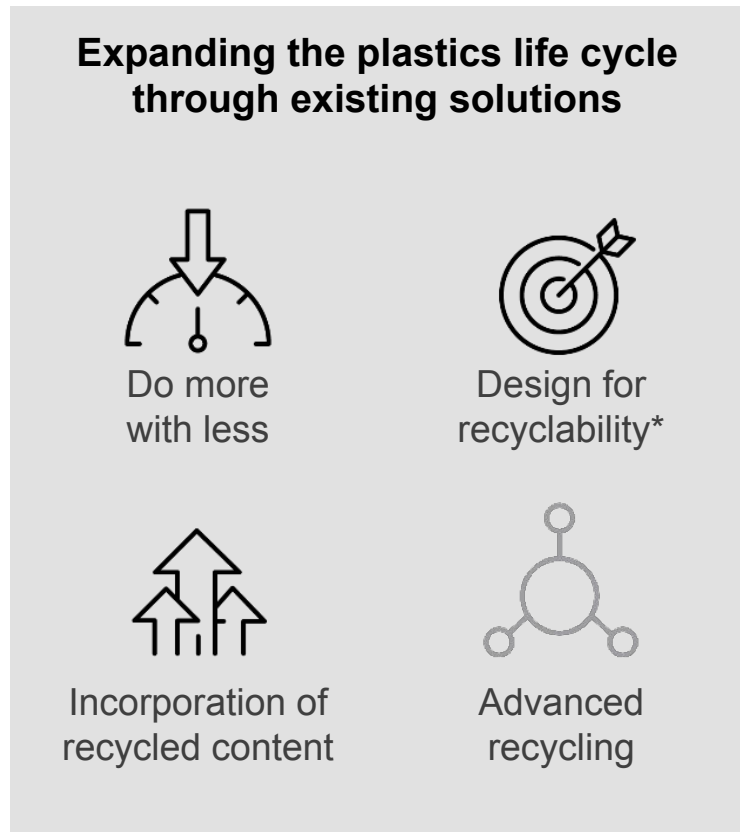
All solutions are needed to address plastic waste, including Advanced Recycling.

\* 2023 IEA report "[Net Zero Roadmap: A global pathway to keep the 1.5°C Goal in Reach.](#)"

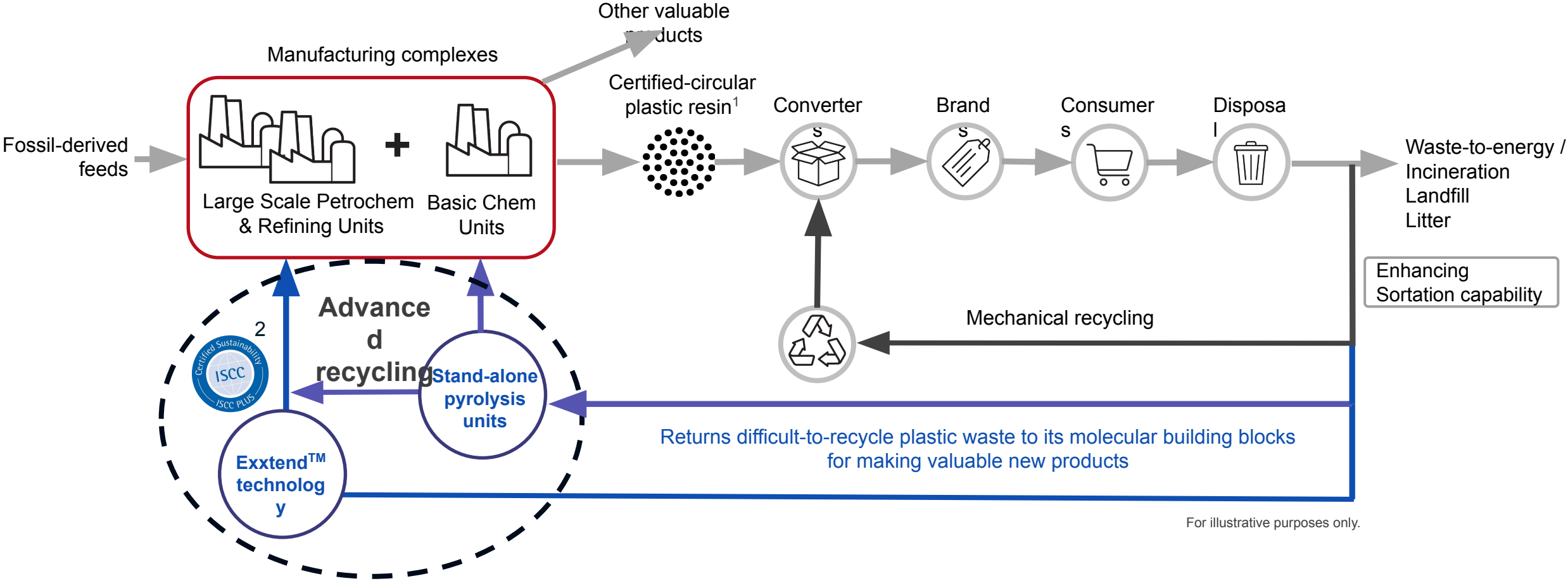
\* Source: (National Overview: Facts & Figures on Materials, Wasters and recycling) [EPA.gov](#)

# Innovations & value chain collaborations for sustainable solutions

ExxonMobil is committed to creating sustainable solutions that improve quality of life and meet society's evolving needs. Potential examples can include:



# Exxtend™ technology aims to accelerate progress towards a more circular economy

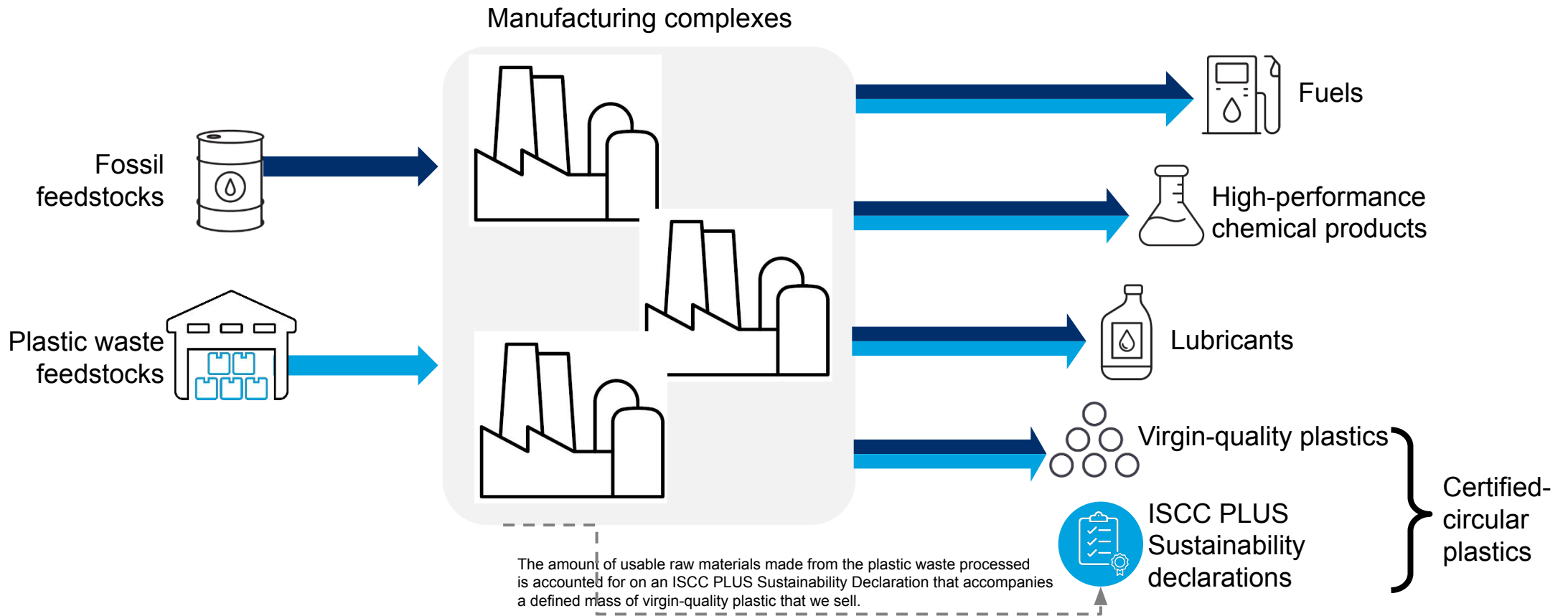


<sup>1</sup> Certified-circular plastics are virgin quality plastics that are accompanied by an ISCC PLUS “Sustainability Declaration” that matches the mass of virgin quality plastics that we sell to a corresponding amount of plastic waste that we transformed back into usable raw materials through advanced recycling.

<sup>2</sup> ISCC PLUS mass balance approach using the “determined by mass” option with “certified free attribution” applied. **Certified-circular plastics do not represent specific amounts of GHG emissions or recycled content.**

# Mass balance attribution

Connecting the dots between the plastic waste we process and the certified-circular plastics we sell

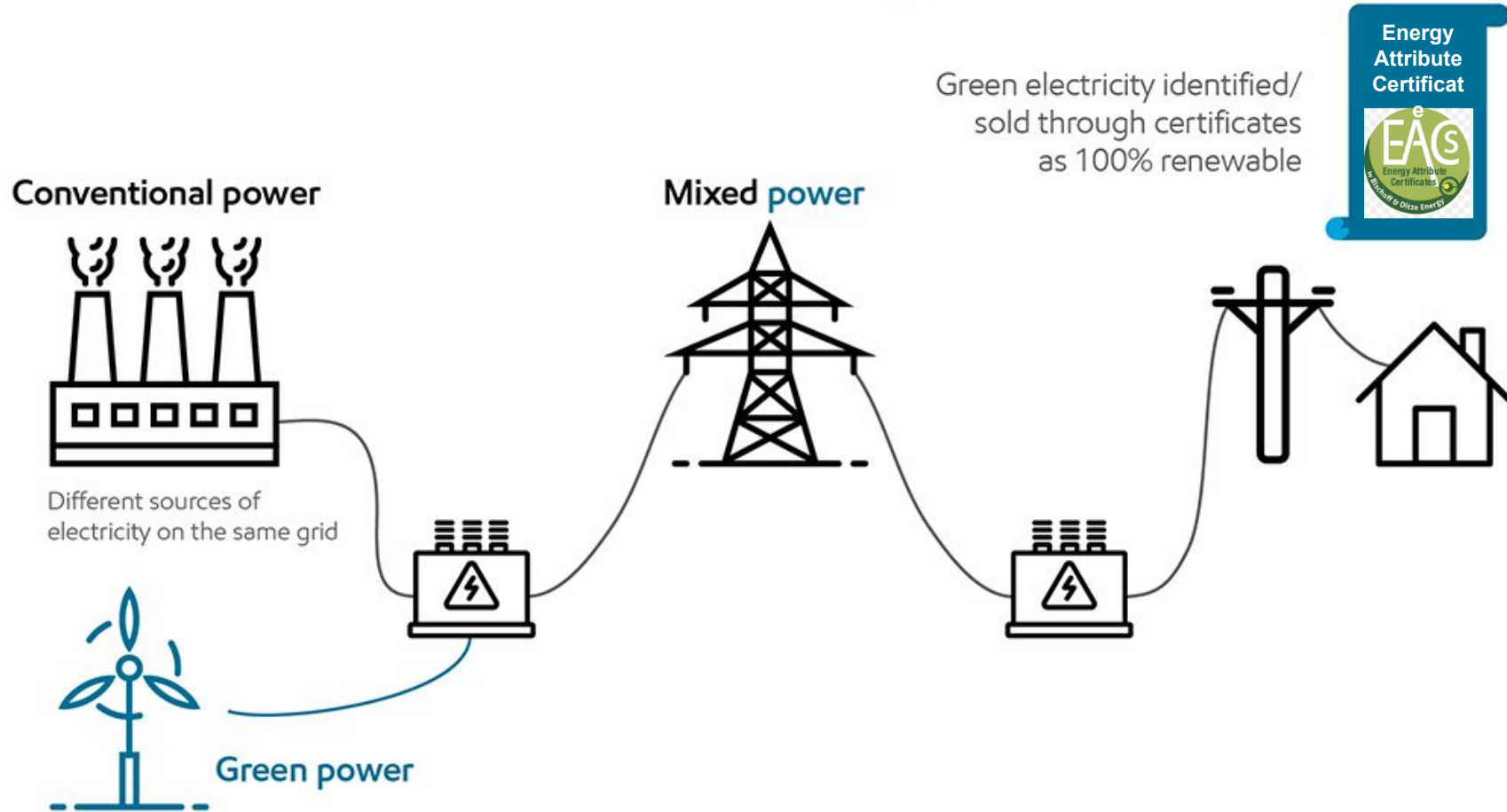


Mass balance attribution to certified-circular plastics is not a claim of recycled content or GHG benefits. This is a simple image of multiple technologically sophisticated and integrated processes for illustrative purposes only and makes no representation as to relative feedstock volumes or product yields.

# Mass balance attribution

Connecting the dots between the plastic waste we process and the certified-circular plastics we sell

"Green power" analogy



# Exxtend™ technology for advanced recycling

- Operational in Baytown, Texas since YE22
- Widens the range of plastic waste that can be recycled

Plastic bags



Diaper material



Packaging materials



Turf



Lubricant bottles



Medical waste



As of December 2024<sup>1</sup>, we have processed over 80 million pounds of plastic feedstock through our Exxtend™ technology, avoiding other end of life disposition (e.g. landfill or incineration)

<sup>1</sup>ISCC PLUS feedstock supplier self-declaration or sustainability declaration

**ExxonMobil**  
Signature Polymers



Bring your impossible

# Scaling technology started in Baytown, Texas

Ambitions for 500 kTa (~1B lbs) advanced recycling capacity, leveraging global footprint



- Large-scale operational advanced recycling facility by ExxonMobil
- ExxonMobil sites under assessment for advanced recycling
- Ongoing collaborations on advanced recycling

# Selling to customers around the world

Customer and brands solutions helping meet their growing demand for plastic circularity



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# Interested to learn more?



Alex Keane



Sr. Market Manager, Polyethylene Flexible Packaging



Meredith Burtman



**ExxonMobil**

*Signature Polymers*

**Bring your impossible**

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