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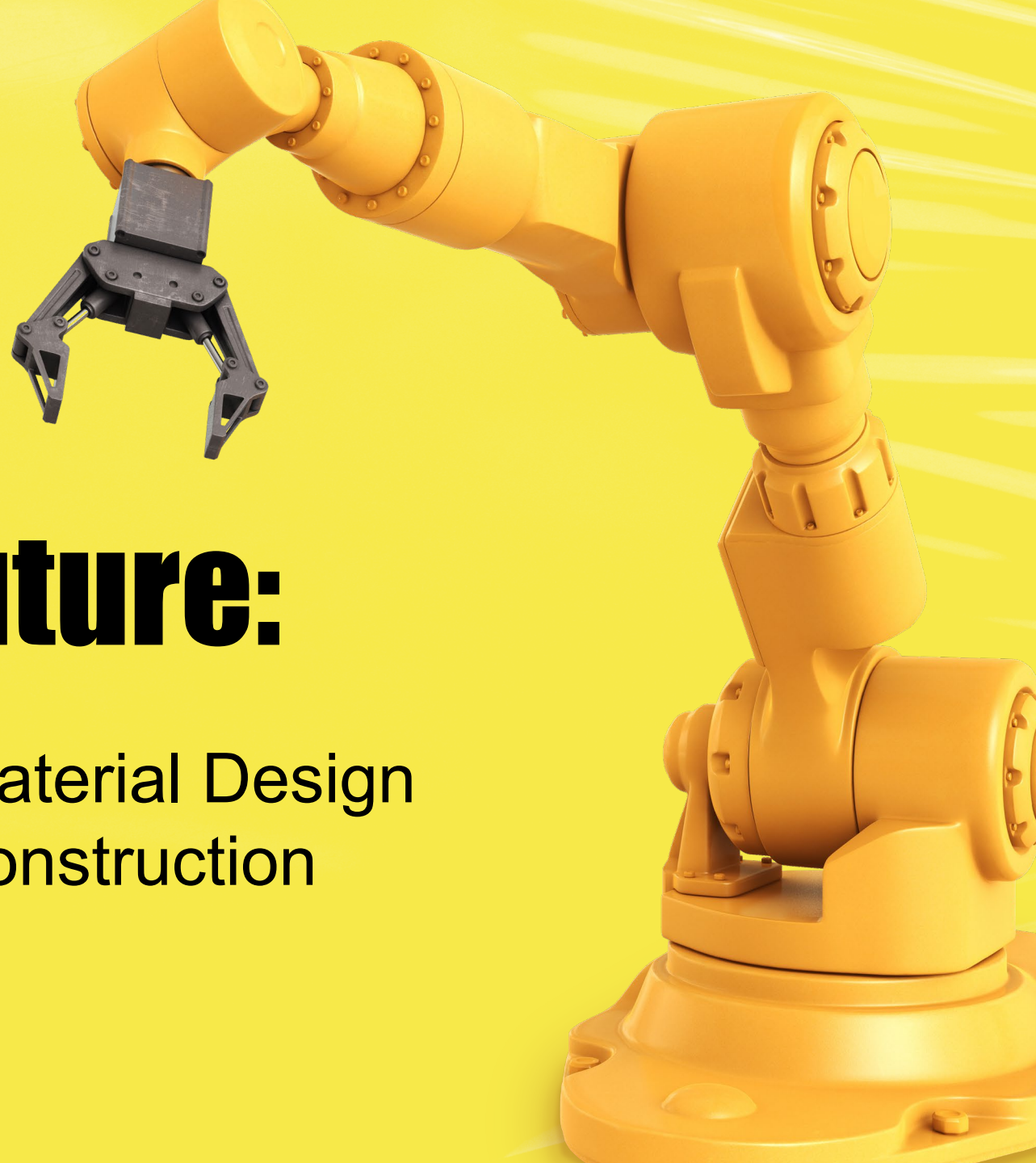

Building the Future:

Empowering Sustainable Material Design Selection in Building and Construction

Bamberger Amco Polymers

NPE2024 The Plastics Show | MADE FOR YOU

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Bamberger Amco Polymers

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A Member of the Ravago Group

9,000+ Employees

More than 30% are dedicated local sales employees

53,000+ Customers Worldwide

Large loyal customer base

325+ Locations Worldwide

Across 65 countries

6.8 mln MT Volume

42,000+ Product References

Diverse portfolio

Top 35% In our Industry for Sustainable Practices – 3rd Party Verified through Ecovadis

Bamberger Amco Polymers

SCSglobal SERVICES

ISCC CERTIFIED PLUS

ISCC PLUS Certificate

Certificate Number: ISCC-PLUS-Cert-US201-115542023

SCS Global Services
2000 Powell Street, Emeryville, CA 94608, USA
certifies that

Ravago Americas
Summit Tower Blvd Suite 900 1900
Orlando 32810
United States

complies with the requirements of the certification system
ISCC PLUS
(International Sustainability and Carbon Certification)

This certificate is valid from 23.11.2023 to 22.11.2024.

The site of the system user is certified as:

Collecting Point
Trader with Storage

The scope of the certificate includes the following chain of custody options:
(not applicable for paper traders)

Mass Balance

Emeryville, CA, USA
20.11.2023
Place and date of issue

Stamp, Signature of issuing party

The issuing Certification Body is responsible for the accuracy of this document.
Version / Date: 1 (no adjustments) / 20.11.2023

BAMBERGER AMCO POLYMERS

ISCC+ Certified

- Chain of Custody is critical in every phase of production, re-packaging and delivery.
- Must be handled under ISCC+ Protocol and Documentation Collection
- Dedicated and Segregated Mass Balance Accounting
- Necessary for End-User Claims of Recycled Content and Transparent Traceability.
- Provision of Self-Declarations to certify materials contain Circular, Bio-Circular, Bio Based or Derived from Renewable Energy.
- Scope of Materials Covered: PE to PEI

Active in plastic distribution & Compounding since 1955. We partner with the world's leading resin suppliers providing the most complete line card and selection of plastics materials in the industry, including:

- Engineering Thermoplastics
- Commodity Thermoplastics
- High Performance Thermoplastics
- Elastomers
- Specialty Resins & Custom Compounds
- Recycled / Sustainable Materials

A Leader in Specialty
Plastic Distribution

150+ Talented
Commercial Team

4 Market-Specific Business
Development Managers

7 Field-based Engineers
Best in Class Technical Expertise

8 Regions
Nationally

Fully Integrated Supply
Chain Solutions

30+ Warehouses
Nationally

4000+
Customers

250+
Employees

Consumer Sentiment, Legislation and Decarbonization

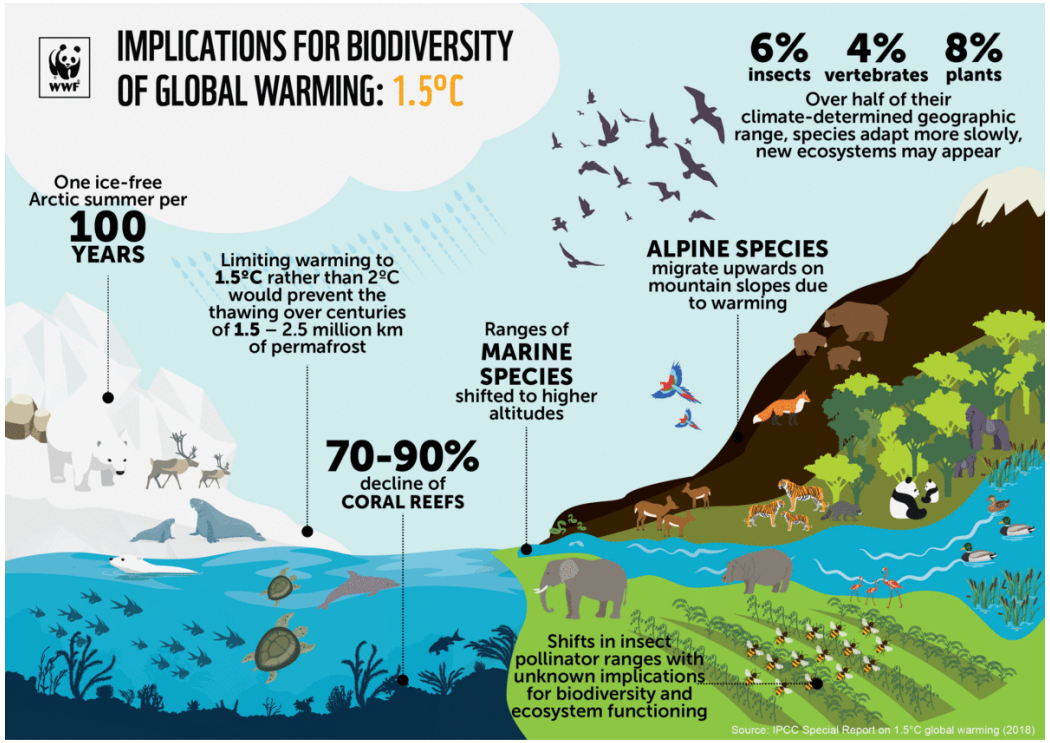
Driving Factors for Sustainability

75%

of consumers indicated that they would be more likely to purchase a product if the producing company is making an effort to be sustainable.

92%

of people are concerned about the **negative impact that plastic pollution in the oceans will have on future generations**



>25%

Of Brand Owners expect public disclosures on emissions. Less than 2 years ago this was below 10%

Legislation

EPR, Mandatory Minimum Recycled Content Laws are driving cases for sustainable packaging

78%

of people want to **reduce their use of single plastic**

17 GOALS
to transform our world

Our engagement for a better and sustainable world

The United Nations 17 Sustainable Development Goals address the global challenges we face. The Goals interconnect and in order to leave no one behind, it is important that we achieve each Goal and target by 2030.

WHAT ARE THE SCOPES OF CARBON EMISSIONS:

Scope 1

Greenhouse Gas Emissions:

Scope 1 emissions encompass direct greenhouse gas (GHG) emissions stemming from sources controlled or owned by an organization, such as emissions resulting from fuel combustion in boilers, furnaces, and vehicles. SOURCE: EPA.gov

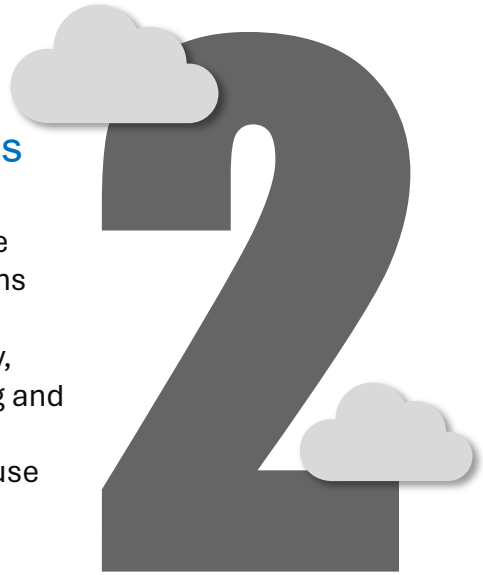
Direct Emissions from the Reporting Company

Scope 2

Greenhouse Gas Emissions:

Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or colling and are the result of the organizations energy use

SOURCE: EPA.gov



Indirect Emissions from Upstream Activities

Scope 3

Greenhouse Gas Emissions:

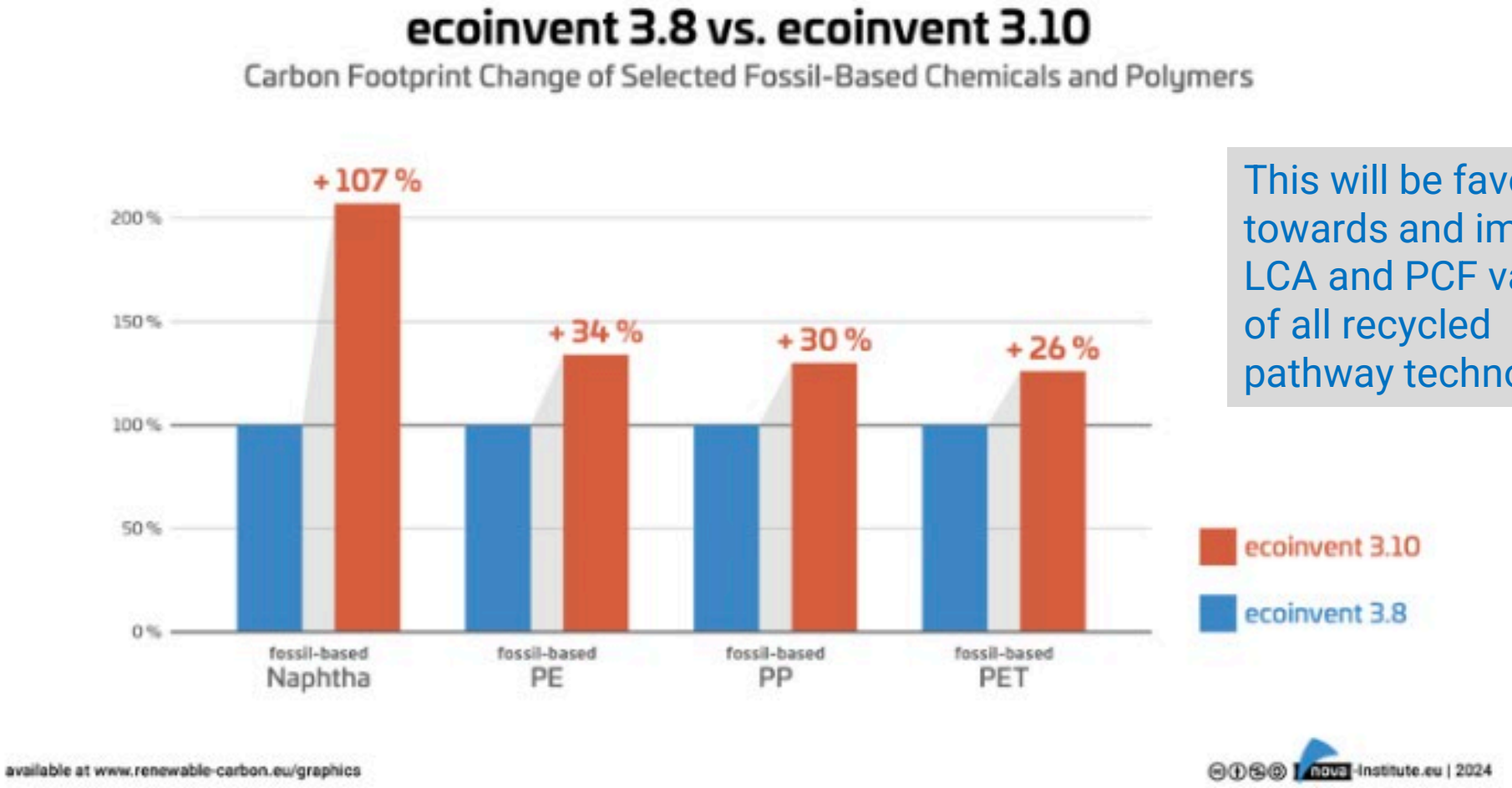
Scope 3 emissions are all indirect emissions, not included in scope 2, that occur in the value chain of the reporting company, including both upstream and downstream emissions.

SOURCE: EPA.gov

Indirect Emissions from Upstream Purchased Goods and Services, Transportation and Distribution, Waste Generated in Operations, Business Travel, Employee Commuting and Leased Assets.

Downstream Activities from Transportation and Distribution, Processing of Sold Products, Use of Sold Products, End-of-Life Treatment of Sold Products, Leased Assets, Franchises and Investments

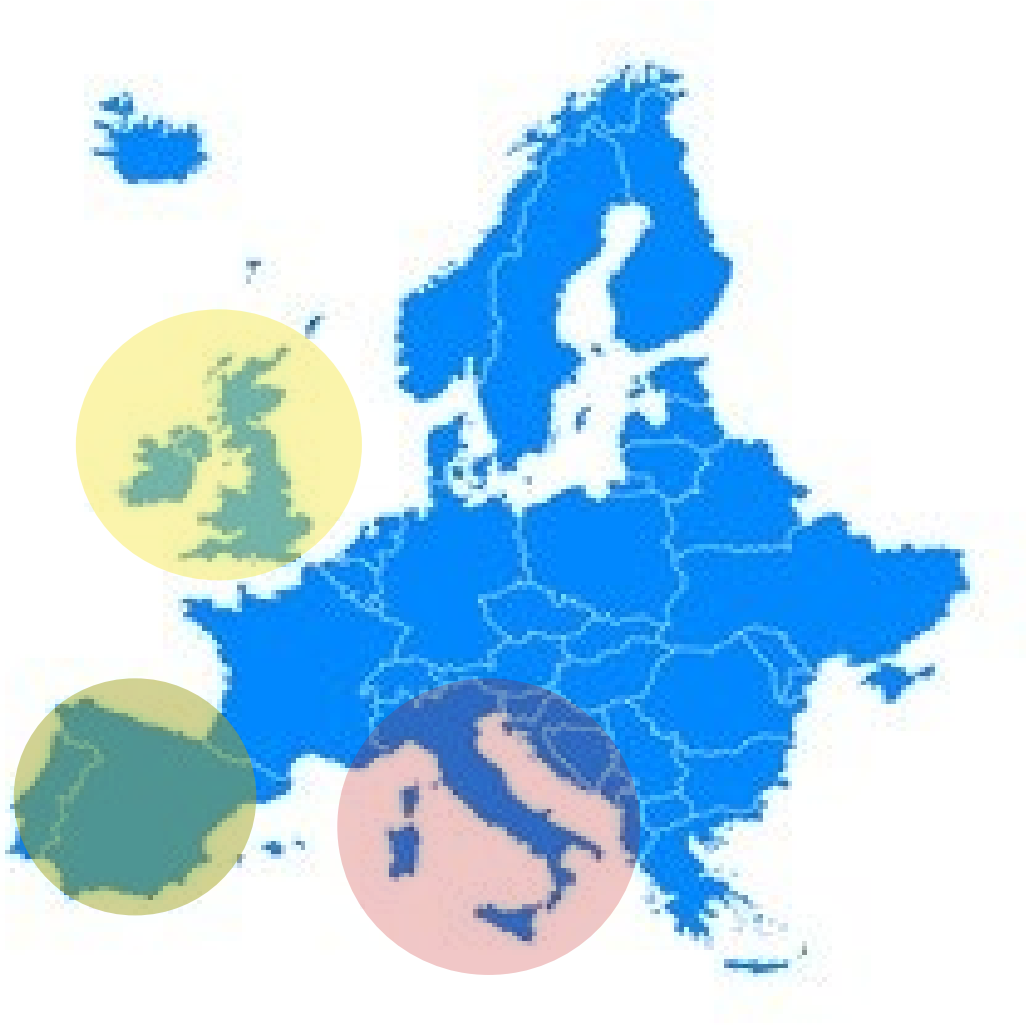
Carbon Footprint Scope Emissions Evolve



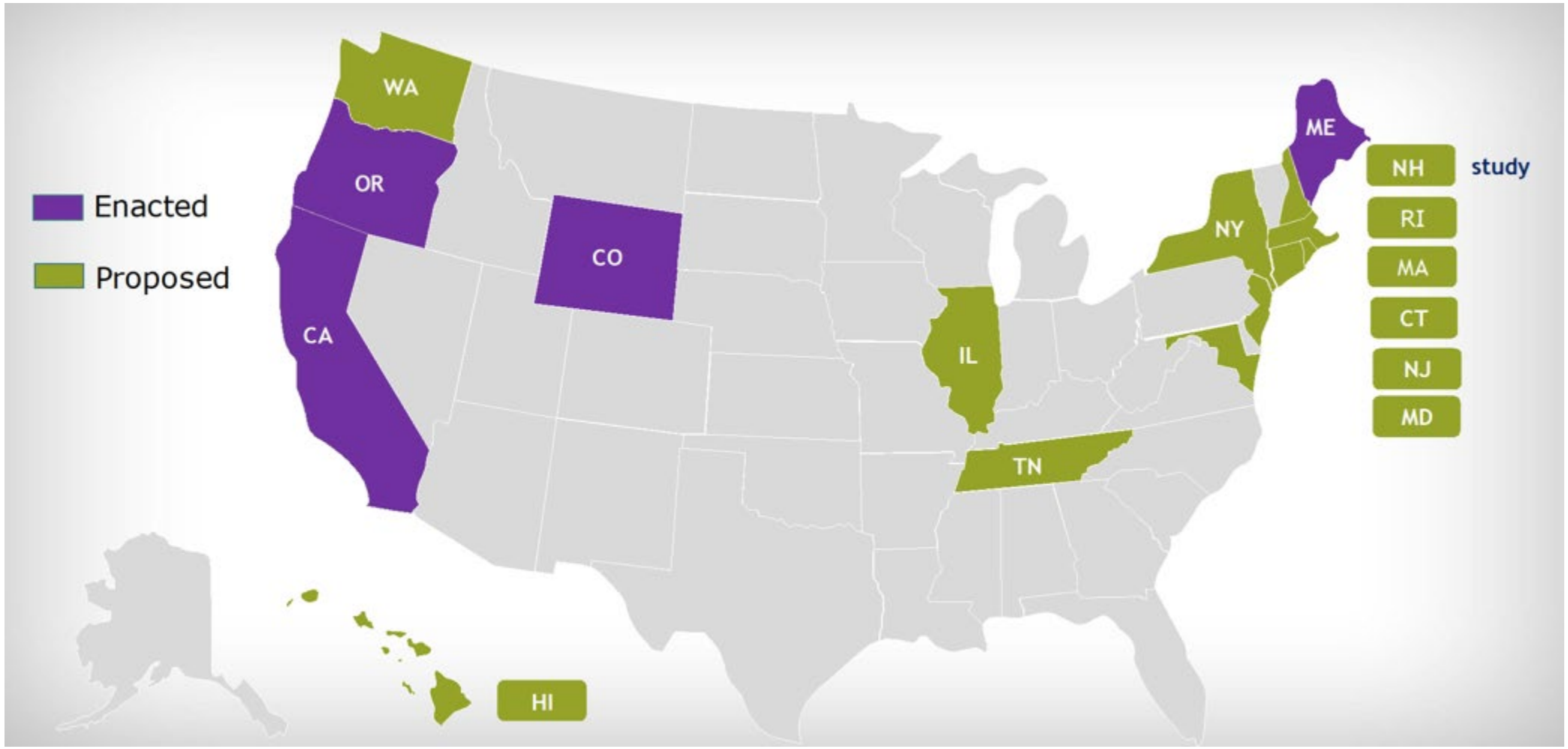
This will be favorable towards and improve LCA and PCF values of all recycled pathway technologies

European Plastics Taxes

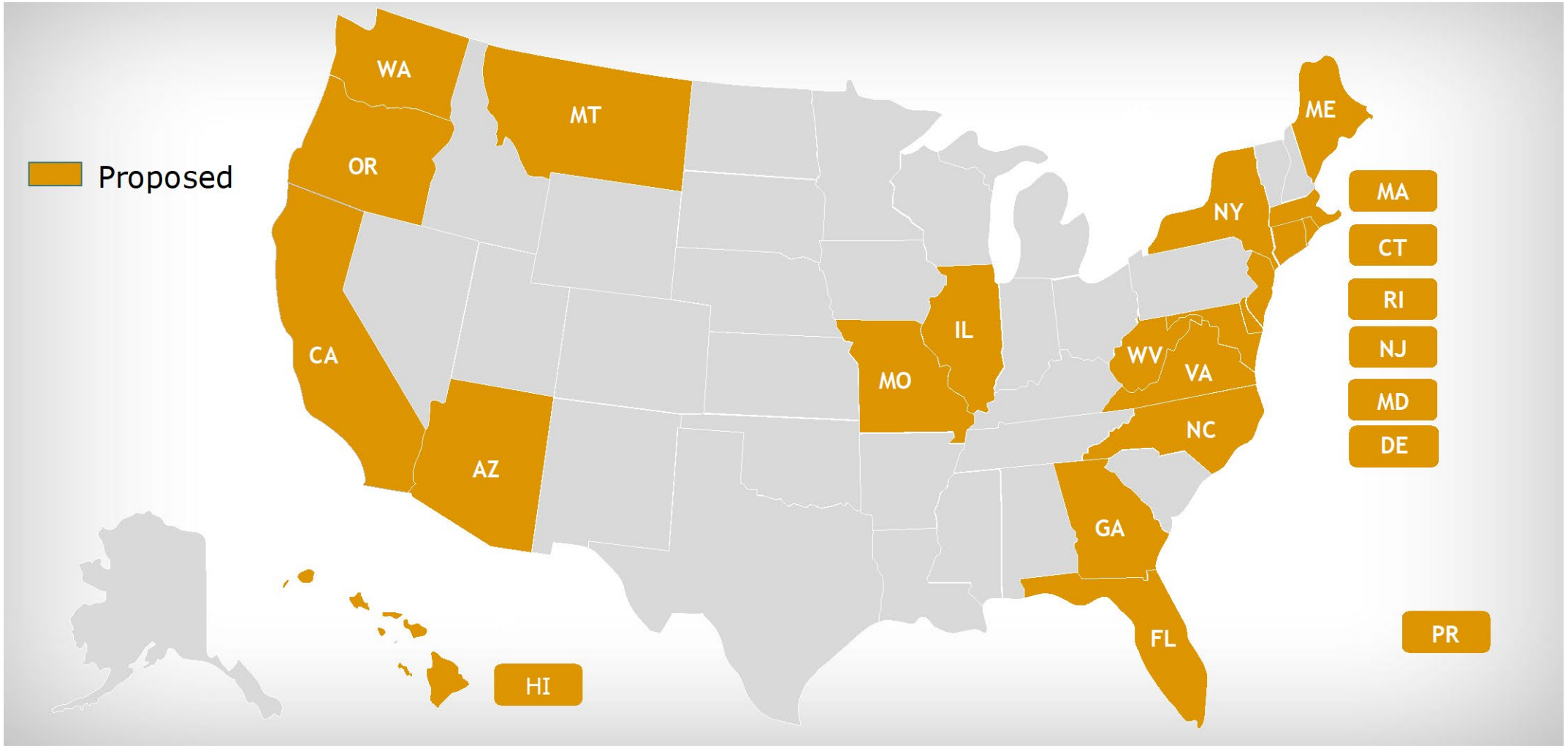
- UK - $250/ton (£200/ton)
- $300 Million Estimated for 1st year
- Spain and Italy - $465/ton (€450/Ton)
- Italy Estimated revenue 1st year $484 Million (€470 Million)
- Spain Estimated Revenue 1st year $745 Million (€724 Million)
- Exemptions granted to applications with 30% PCR Content



2023 Extended Producer Responsibility Laws



2023 Packaging Restrictions

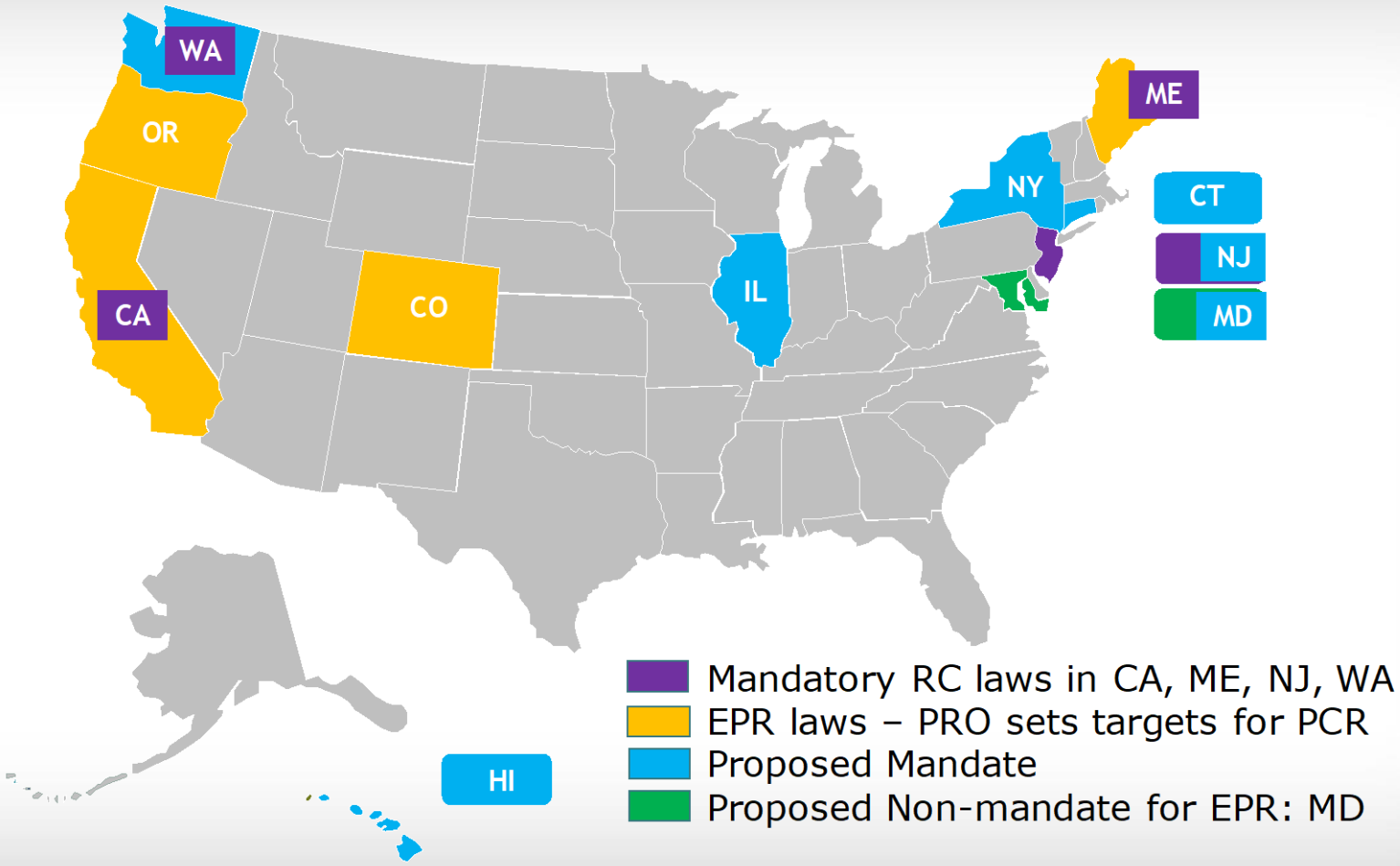


2023 Recycled Content Legislation

Proposed Mandates:
CT, HI, IL, MD, NJ, NY WA

Non-Mandates:
MD

Existing laws:
CA (2020)
ME (2022)
NJ (2022)
WA (2021)



United States Packaging Legislation

California (AB 793)	Beverage containers, glass and plastic	1/1/2022 – 15% 1/1/2025 – 25% 1/1/2030 – 50%
California (SB 270)	Reusable grocery bag made from plastic film (2.25 ml minimum thickness)	1/1/2016 – 20% 1/1/2020 – 40%
Connecticut (HB-6664)	Beverage containers, plastic	1/1/2027 – 25% 1/1/2032 – 30%
New Jersey (S2515)	1. Beverage containers, plastic	1. 1/1/2024 – 15% with 5% increases every 3 years up to 50%
	2. All other rigid containers	2. 1/1/2024 – 10% with 10% increases every 3 years up to 50%
	3. Plastic carryout bags	3. 1/1/2024 – 20% 1/1/2027 – 40%
	4. Plastic trash bags	4. 1/1/2024 – 5-20% 1/1/2027 – 10-40%
Maine (LD 1467)	Beverage containers, plastic	1/1/2026 – 25% 1/1/2031 – 30%
Washington (SB 5022)	1. Beverage containers, plastic	1. 1/1/2023 – 15% 1/1/2026 – 25% 1/1/2031 – 50%
	2. Plastic wine containers (287 ml) and dairy milk containers	2. 1/1/2028 – 15% 1/1/2031 – 25% 1/1/2036 – 50%
	3. Plastic household cleaning and personal care product containers	3. 1/1/2025 – 15% 1/1/2028 – 25% 1/1/2031 – 50%
	4. Plastic trash bags	4. 1/1/2023 – 10% 1/1/2025 – 15%
Washington (SB 5323)	Reusable grocery bag (Plastic film at least 2.25 ml thick until 12/31/25; at least 4 ml beginning 1/1/26)	7/1/22 – 40%

Legislation – Global Trends

	SEC Disclosures	CSRD	ISSB	California Climate Corporate	EPR SB54 California
Status	Mandatory for listed companies	Mandatory Public and Private	Voluntary as of now	Mandatory Public and Private	Mandatory Public and Private
Scope	US	EU (Some US)	Global	Statewide SB 253 & SB 261	SB 54 establishes a new extended producer responsibility (EPR) single-use plastic food ware products
Disclosure category	• Scope 1,2,3 • Risk Management • Climate-related risks • Identification procedures • Transitions plans • Scenario analysis • Carbon prices • Performances toward targets Climate Related	• Encompass SEC + • Workforce • Consumers & end users • Affected Communities • Business Conduct • Audits Global ESG Scope	• Established by IFRS to develop a global baseline for sustainability disclosure for the financial market • Investor focus • Prioritizing climate approach	• Companies with annual revenue over $1B • Scope 1,2,3 • Data management • Aligned with SEC	• Cut Single-use plastic by 25% • Recycle 65% of Single-use Plastic • Make 100% of single-use packaging and food ware recyclable or compostable • The law shifts the plastic pollution burden from consumers to the plastics industry by raising $5 billion from industry members over 10 years. • Cuts plastic pollution and Supports disadvantaged, low-income, and rural communities hurt most by the impacts of plastic waste.
Timeline	Disclose Year: 2025	Disclose Year: 2025	Voluntary Today	Disclose year: 2025	Requirements by 2032

Pathway to Sustainable Design for Building and Construction

Pathway to Sustainability

MASS BALANCE POLYMERIZATION AND PRODUCTION

ISCC CERTIFIED

ECOVADIS REGISTERED

ADVANCED MOLECULAR RECYCLING

PIR POLYMER FORMULATIONS

BIO-DEGRADABLE POLYMER ADDITIVES

BIO-BASED POLYMERS

BIODEGRADABLE MATERIALS

CIRCULARITY PROGRAMS

STREAMLINED DELIVERY SYSTEMS

RECOVERY OF PIR PRODUCTS

RECOVERY OF PCR PRODUCTS

PCR FORMULATIONS

LIGHT WEIGHTING

OCEAN BASED PLASTICS

COMPOSTABLE POLYMERS

The Association of Plastic Recyclers

ISCC

ecovadis Business Sustainability Ratings

Operation Clean Sweep

SUSTAINABLE DEVELOPMENT GOALS

MAPP MANUFACTURERS ASSOCIATION FOR PLASTICS PROCESSORS

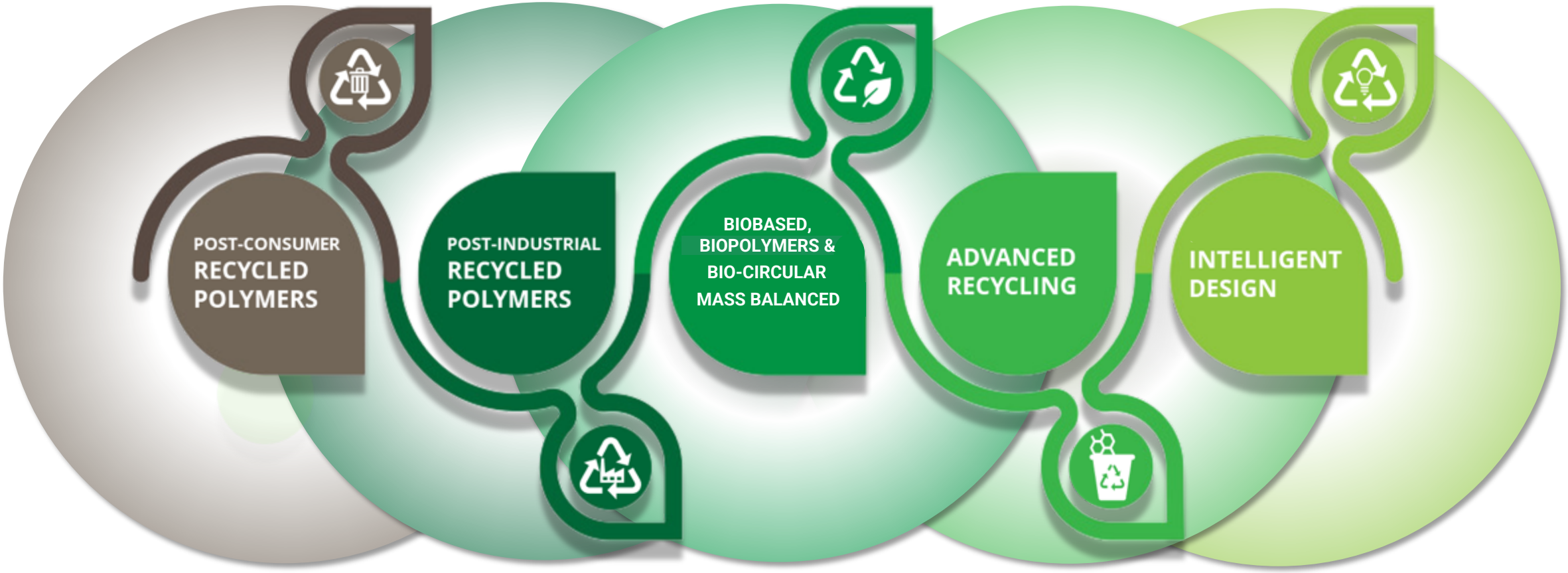
HPRC

Responsible Care OUR COMMITMENT TO SUSTAINABILITY

PLASTICS

POLYMERS

Complimentary Sustainable Pathway Technologies



Reduce, Re-Use, Recycle and Re-Circle

- Transformative change will require utilization the most efficient complimentary technologies
- Most plastics possess inherent limitations (can only be mechanically recycled 5 to 7 times)
- The principles of reduce, reuse, and recycling, including Mechanical PCR, PIR, and Bio-Circular solutions ultimately lead to a linear approach.
- Introducing the concept of "re-circling" – the fourth 'R' – is essential, allowing us to reintegrate these materials back into the system, moving us closer to achieving infinite circularity through Advanced Molecular Recycling.

Understanding the Technologies

“We must empower a transformative approach that encourages us to rethink how we design, produce, consume and dispose of the goods we develop and market.”

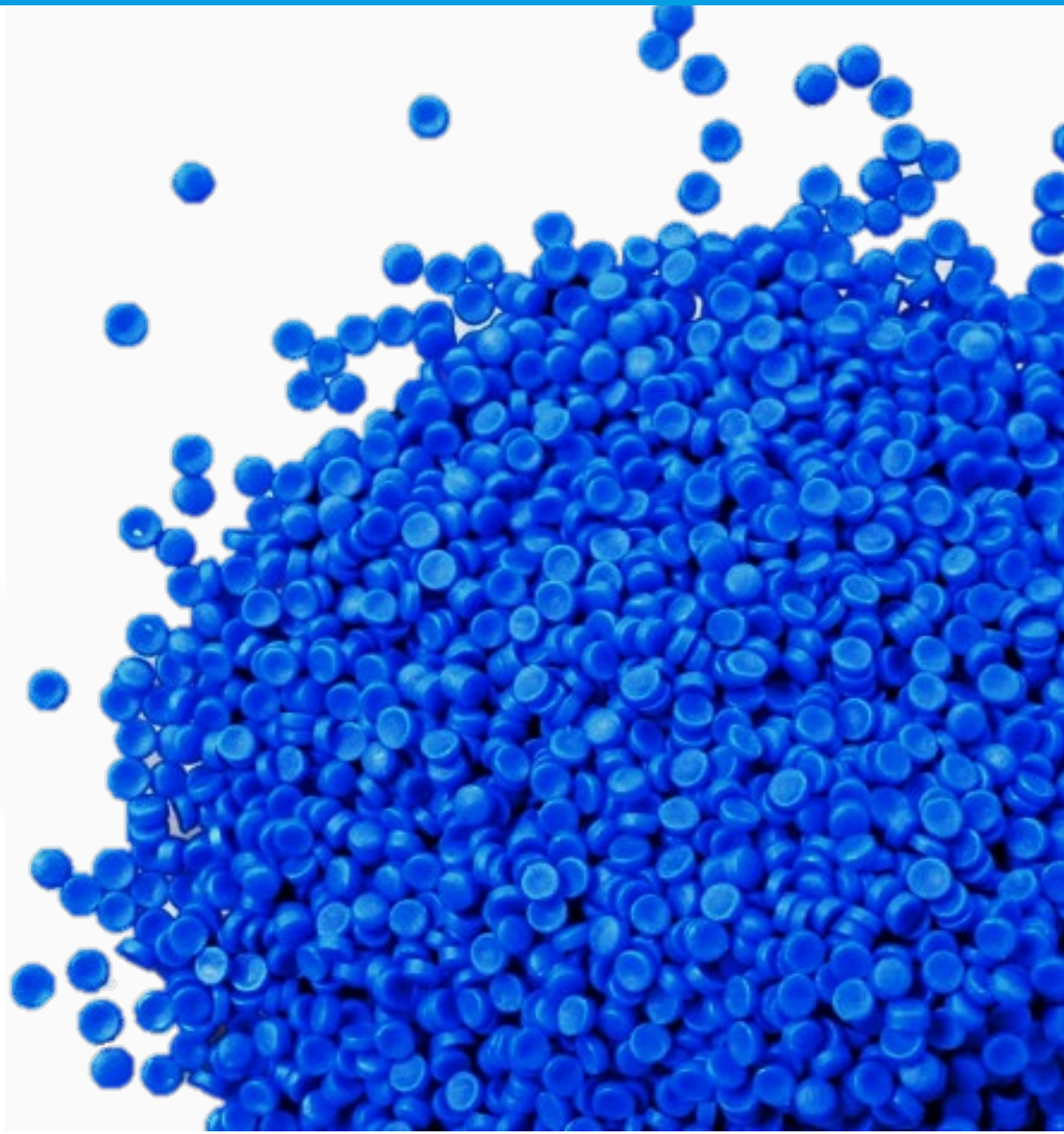
Post-Consumer Resin (PCR):

Post-consumer Waste plastic that has met its intended use and has reached its end of life and can no longer be used for its intended purpose .

Blue Polymers

Blue Polymers is a joint creation of *Republic Services*, a leader in the environment services industry, and *Ravago*, a leader in polymer recycling and distribution.

- Co-locate four facilities with Republic Services polymer centers
- 300+ million pounds per year of PCR resin capacity
- Post-consumer rHDPE, rPP, rPET
- Both food-grade & Non-food-grade
- Natural and custom color sortation



Materials Discarded into Wasted Streams and destined for Landfill

- Consumer Waste at end of Life
- Land and Ocean Derived
- Must be Mechanically Recycled

Different Quality Levels

- Limited Natural Availability
- Dark Colors
- Lower Properties vs. Prime Materials
- High Demand for Consumer Circularity
- Can mix virgin and regrind %
- Cost vs. Quality Balance
- New Technologies allowing for re-introduction into FDA LNO compliant products.
- Most Formulations are Non-FDA

Post-Industrial Resin (PIR):

Pre-consumer Waste plastic recovered from industrial and manufacturing processes that can no longer be used for its intended purpose.

- Pre-Consumer Production Over-Runs, Scrap, non-compliant products
- Production Site Waste
- Off-Specification Materials
- Improved Physical Properties vs. PCR
- Natural Availability
- Some FDA
- Improved Consistency vs. PCR
- Yarns, Ropes, etc.…
- Carpet over runs
- Limited Chain of Custody Certification
- Not Recognized by most Legislation on Recycled Content

Post-Industrial Recycled Solutions: BASF Nypel 6235G

BASF
We create chemistry

Spotlight: Nypel® 6235G

Unlimited coloring options

Product Description: Post industrial PA6, 35% glass reinforced

Applications: Structural office furniture components: office chair base, seat frame, chair back

Key Properties:

- High strength and toughness to meet BIFMA end-use application tests
- Reliable supply of high-quality feedstocks ensures consistent and predictable properties
- Uncolored version has wide range of pigmenting options
- Improved flow (15-30%) compared to Ultramid® B3EG6

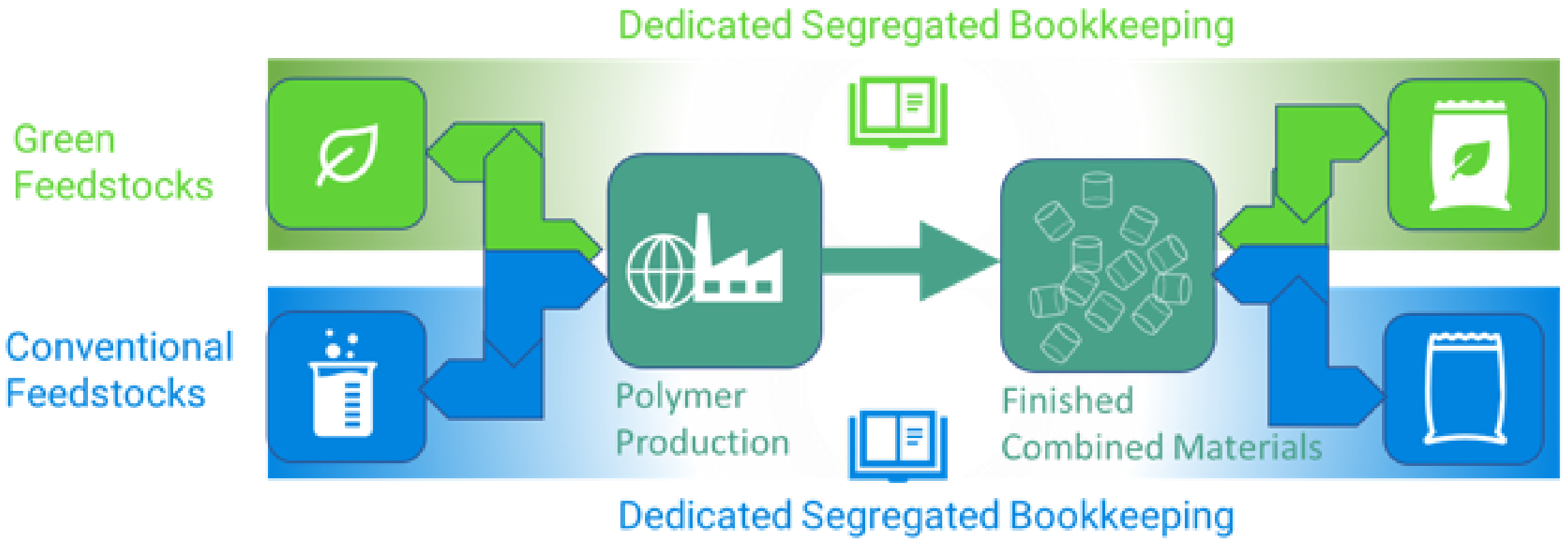
Value Proposition:

- **30% lower Product Carbon Footprint** compared to Ultramid® B3EG6 (virgin equivalent)
- Cost competitive compared to virgin PA6
- Supports furniture industry sustainability programs such as the furniture association BIFMA LEVEL certification and green building LEED credits.

Bio-Circular Mass Balanced Polymers:

Bio-Circular feedstocks are waste and residues of biological origin from agriculture, forestry and related industries. The mass balance approach makes it possible to track the amount and sustainability characteristics of circular and or bio-based material in the value chain and attribute it based on verifiable bookkeeping.

Bio-Circular/Bio-Attributed Mass Balanced



Bio-Circular Mass Balanced Recycled

- Sourced from Bio-Attributed/Bio-Circular Resources
  - Cooking Oil
  - Methane
  - CTO (Tall Oil – Wood Waste)
  - Landfill Off-Gas
- Prime Properties
- Compliant to all regulatory specifications
- ~25-100% bio-attributed feedstock
- CO2 reduction ~25-100% of CO2 per kg of polymer on average
- Identical Chemical Fingerprint to Prime Materials
- Free Attribution utilized with segregated bookkeeping
- ISCC+ Managed
- Not recognized in state recycling bills
- Recognized in Extended Producer Responsibility (EPR) Legislation

SCSglobal SERVICES

ISCC CERTIFIED PLUS

ISCC PLUS Certificate

Certificate Number: ISCC-PLUS-Cert-US201-115642023

SCS Global Services
2000 Powell Street, Emeryville, CA 94608, USA
certifies that

Ravago Americas
Summit Tower Blvd Suite 900 1900
Orlando 32810
United States

complies with the requirements of the certification system
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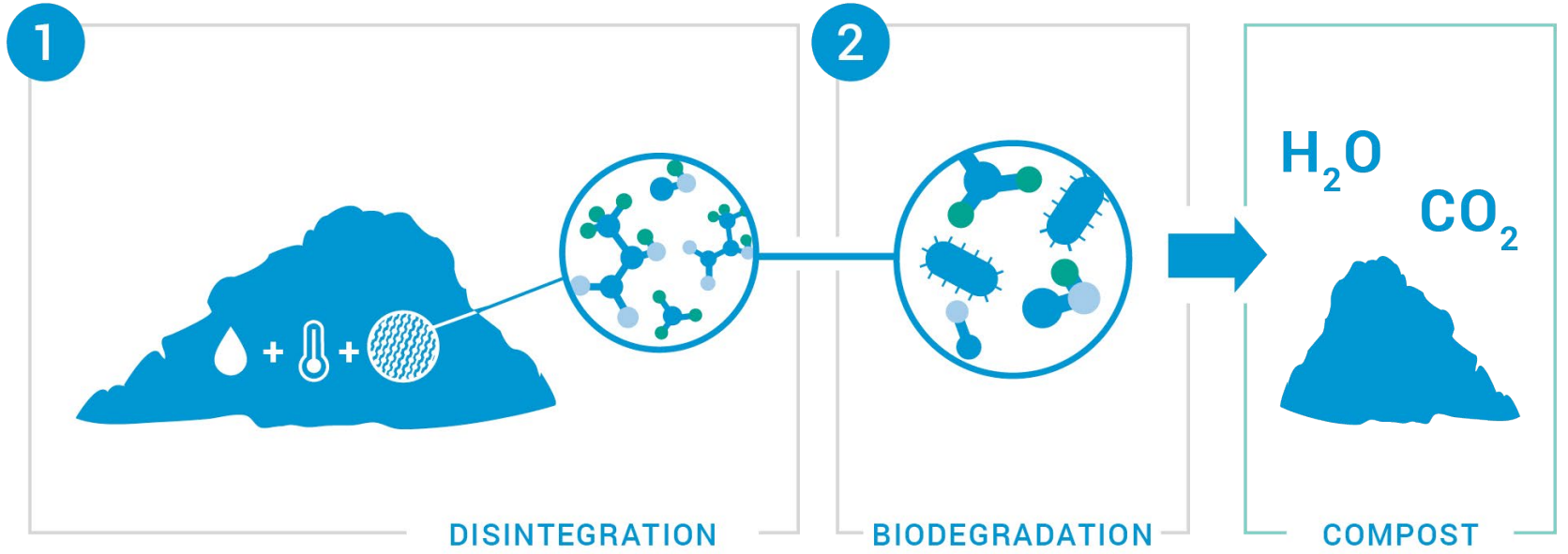
Bio-Polymers

Bio-Based Polymers or Biopolymers are created with biological origin from agriculture, forestry and related industries. They can be biodegradable and compostable and are fully or partially made from biological resources, rather than fossil raw materials.

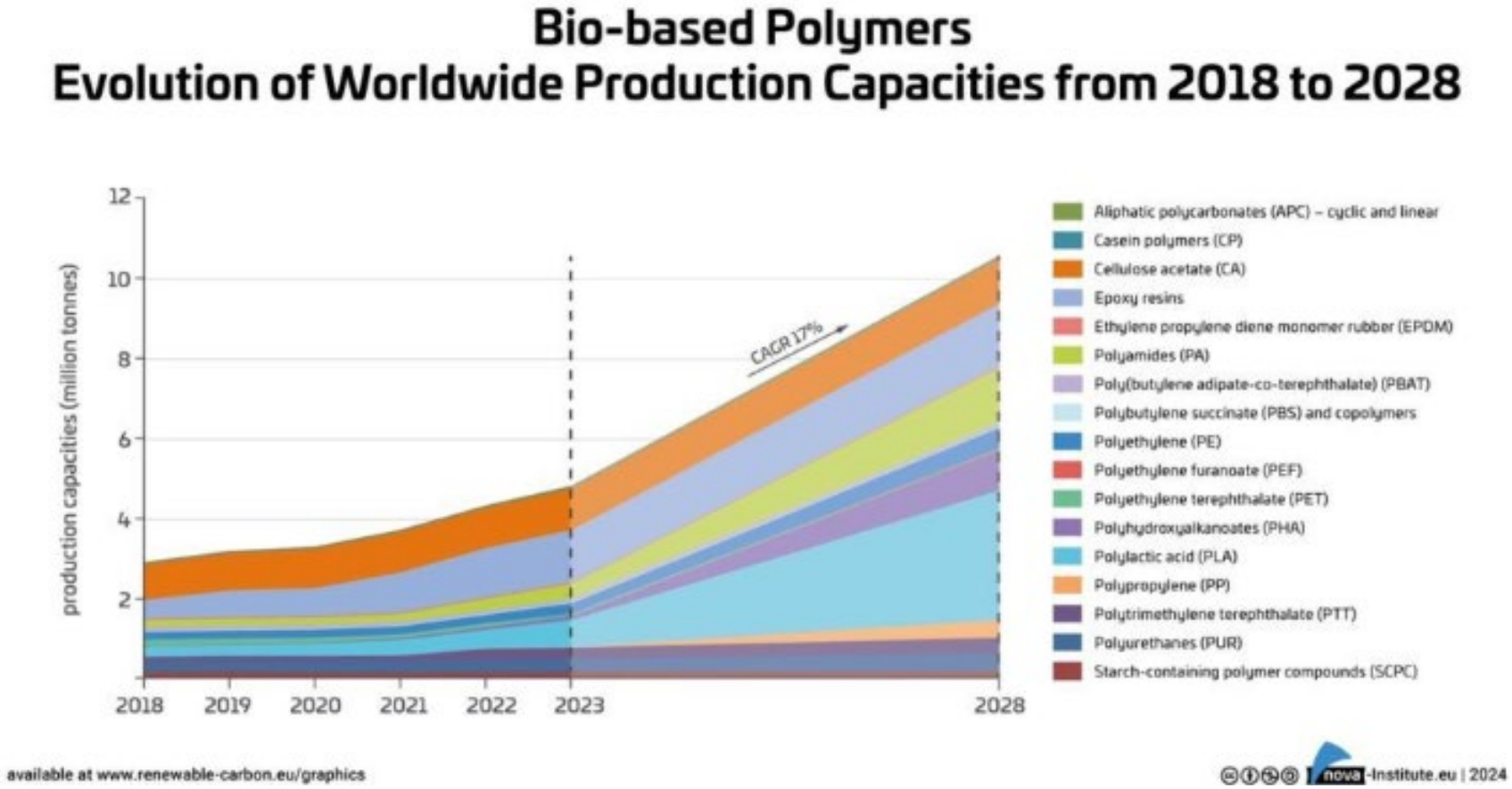
How Composting Works - PLA

1. **DISINTEGRATION:** The moisture and heat in the compost pile split the polymer chains apart, creating smaller polymers, and finally, lactic acid.
2. **BIODEGRADATION:** Microorganisms in compost and soil consume the smaller polymer fragments and lactic acid as nutrients. Since lactic acid is widely found in nature, a large number of organisms metabolize lactic acid. The end result of composting is carbon dioxide, water and humus, a soil nutrient. This degradation process is temperature and humidity dependent.



Source:NatureWorks

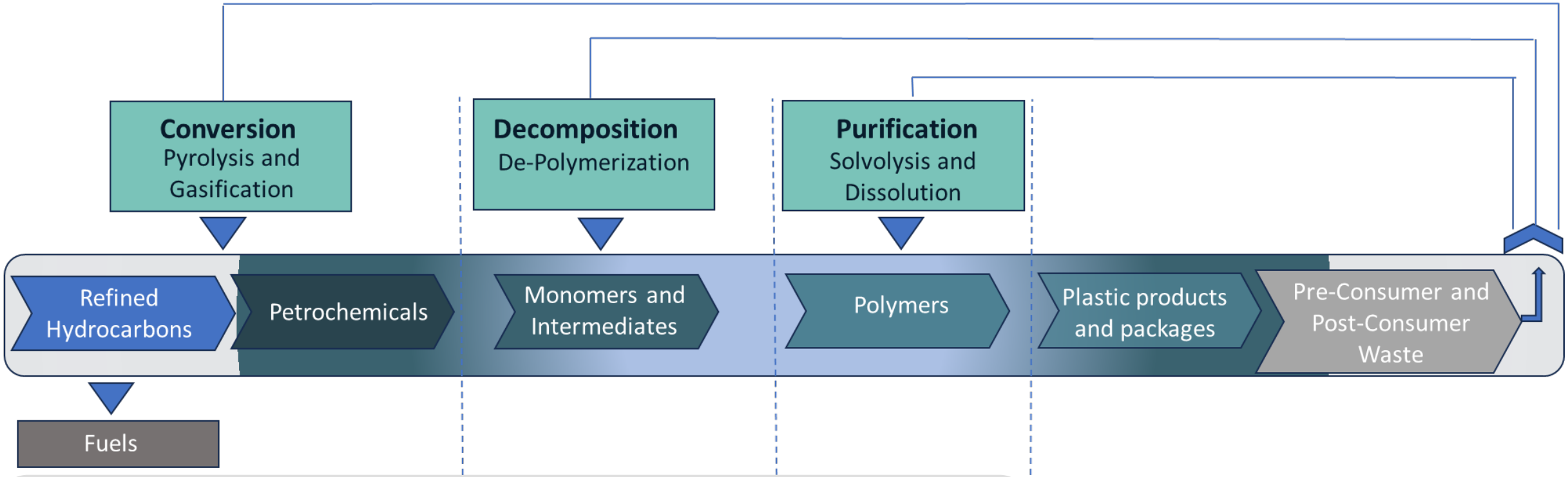
Bio-Based Polymers Capacities



Advanced Molecular Recycling

Also referred to as chemical recycling…encompasses dozens of technologies that use solvents, heat, enzymes, and even sound waves to purify or break down a wide range of hard-to-recycle plastic waste to create polymers, monomers, oligomers or hydrocarbons.

Advanced Molecular Recycling



Conversion - similar to decomposition, plastic conversion processes entail the breakdown of molecular bonds within plastics. However, unlike decomposition, the resulting products primarily consist of liquid or gaseous hydrocarbons.

Decomposition is a process that involves breaking molecular bonds of plastic to recover the simple molecules (monomers) from the plastic which it is made from.

Purification -procedure in which plastic is dissolved in a solvent and then separated into a purified mixture to eliminate additives and dyes, yielding refined plastic as the final product.

https://www.cpchem.com/AdvancedRecycling

Bamberger Amco Polymers

Advanced Molecular Recycling

- Derived from Circular Mixed Waste Post Consumer and Post-Industrial Waste Streams
- Can Process and Convert hard to recycle mixed streams of feedstocks… i.e. Mixed PP, PE, PS and PA flexible films
- ISCC+ Certified Chain of Custody – Verifiable Claims and Recycled % content
- Same as Prime - Highest overall Physical Properties
- Global capacity for Advanced Recycling in 2022 was 928kt and has the potential to grow up to 9,957kt by 2030
- Limited from various states due to classification as a thermal destruction process
- High cost of entry versus traditional fossil-based materials

Intelligent Design

Designing for Recyclability

- Mono-Material Design
- Color
- Labeling
- Fillers

Light-weighting

- Lower Density Materials
- Thin Wall Design
- Limit Packaging

Intelligent Processing

- Reduced Cycle
- Pre-Production (Drying)
- Durable Design
  - Multi-use concept

Sustainability Strategy Guidelines

Recycled Content Source	POST-CONSUMER RECYCLED POLYMERS	POST-INDUSTRIAL RECYCLED POLYMERS	BIO ATTRIBUTED MASS BALANCED POLYMERIZATION	ADVANCED RECYCLING	INTELLIGENT DESIGN
Natural	Some-Limited	Some-Less Limited	Yes	Yes	Yes
FDA	Limited/Varies	Limited	Yes	Yes	Application Specific
UL	Some	Some	Yes	Yes	Application Specific
USP, ISO10993, NSF, DMF	Limited to None	Limited to None	Yes	Yes	Application Specific
Chain of Custody Certification	Green Circle, RecyClass, AIM, GRS	Limited	ISCC+	ISCC+	Application Specific
All Colors and Tight Color Tolerance	Difficult	Improved	All Colors	All Colors	Application Specific
Physical Properties	**Less than Prime**	**Closer to Prime**	**Equal to Prime**	**Equal to Prime**	Application Specific

CO2/GHG Reduction Potential and Properties Comparison by Recycling Pathway

	Mechanical Recycling	Post Industrial Recycling	Bio-Attributed Mass Balanced	Advanced Recycling - Purification	Advanced Recycling- Depolymerization	Advanced Recycling - Gasification	Advanced Recycling - Pyrolysis
Examples of CO2/GHG Reduction Potential (See Reference Key)	~67 to 71% [1]	~30 % [7]	~25 to 100% [2]	~35% [3]	~29% [4]	~20 to 50% [5]	~19 to 63% [6]
Reduced Quality Plastic	Yes	Yes	No	No	No	No	No
Sustainable Fuel	No	No	No	No	No	✓	✓
Recycled Content	✓	✓	Food Waste, Wood Waste, Bio-Waste	✓	✓	✓	✓
Virgin Quality Plastics/ Prime Properties	Limited	Limited	✓	✓	✓	✓	✓
Natural or Clear Color	Limited	Limited	✓	✓	✓	✓	✓
Regulatory Compliance	Limited	Limited	✓	Some	✓	✓	✓
Recaptures Waste from Landfill or Reaching Landfill	✓	Some	Food Waste, Bio-Waste	Hard to Recycle Mixed Waste	Hard to Recycle Mixed Waste	Hard to Recycle Mixed Waste	Hard to Recycle Mixed Waste

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Questions?

Bamberger Amco Polymers

Sources:

- 1 APR: 2018-LCI-Report rPET, rHDPE, rPP: https://plasticsrecycling.org/images/library/2018-APR-LCI-report.pdf
- 2 Covestro, Celanese, Evonik, Ineos Styrolution, SABIC -Bio-Attributed materials PCF
- 3PureCycle (purification): https://www.purecycle.com/blog/purecycle-process-expected-to-use-less-energy-lower-carbon-emissions-than-new-plastic-production
- 4Eastman (methanolysis): https://www.eastman.com/Company/Circular-Economy/Resources/Documents/PRT-Methanolysis-LCA-OnePage-Overview.pdf
- 5Eastman (gasification): https://www.eastman.com/Company/Circular-Economy/Resources/Documents/CRT-Technical-LCA-report.pdf
- 6Argonne National Lab (pyrolysis): https://greet.es.anl.gov/files/lca_postuse_plastic_pyrolysis
- 7BASF Nypel 6235G vs. Ultramid B3EG6 PCF Comparison