

# MATERIALS MANAGEMENT 101: PLASTICS

*January 31, 2023*

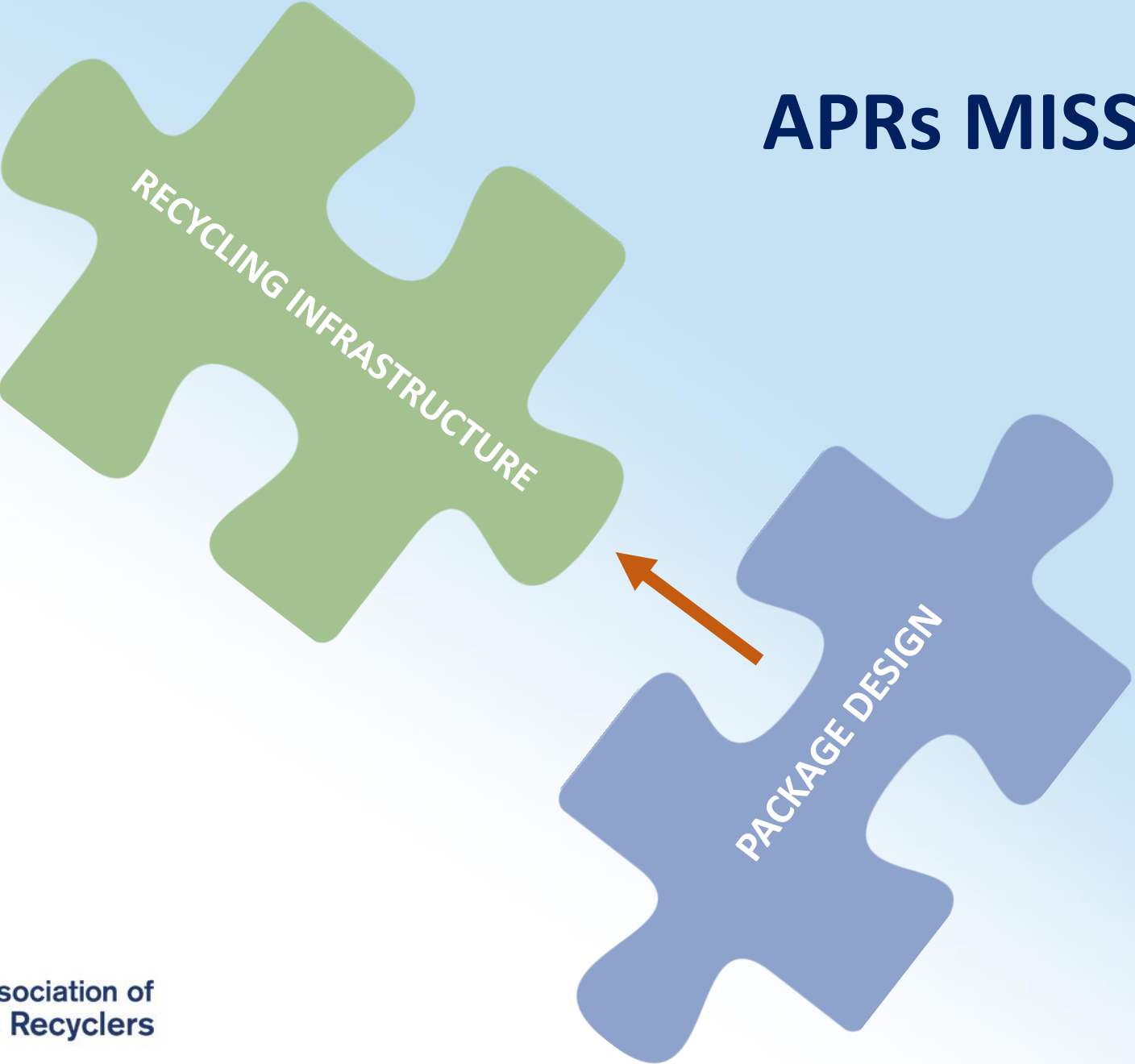


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# WHO IS APR?



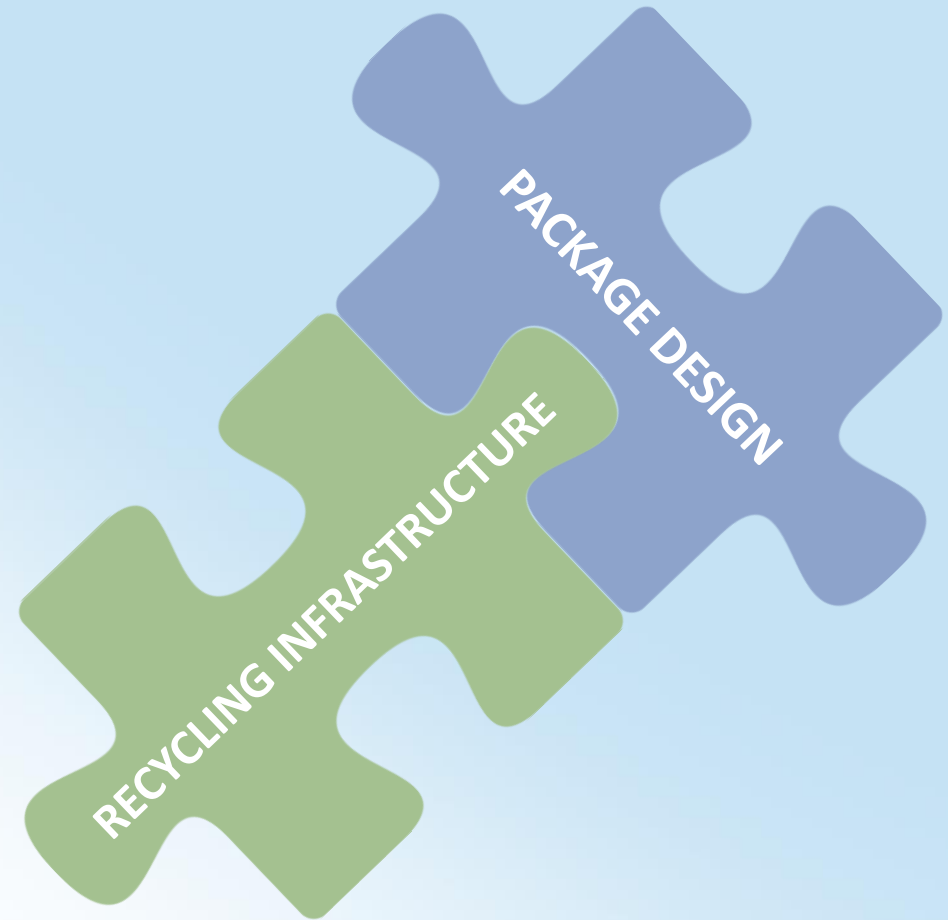
# APRs MISSION



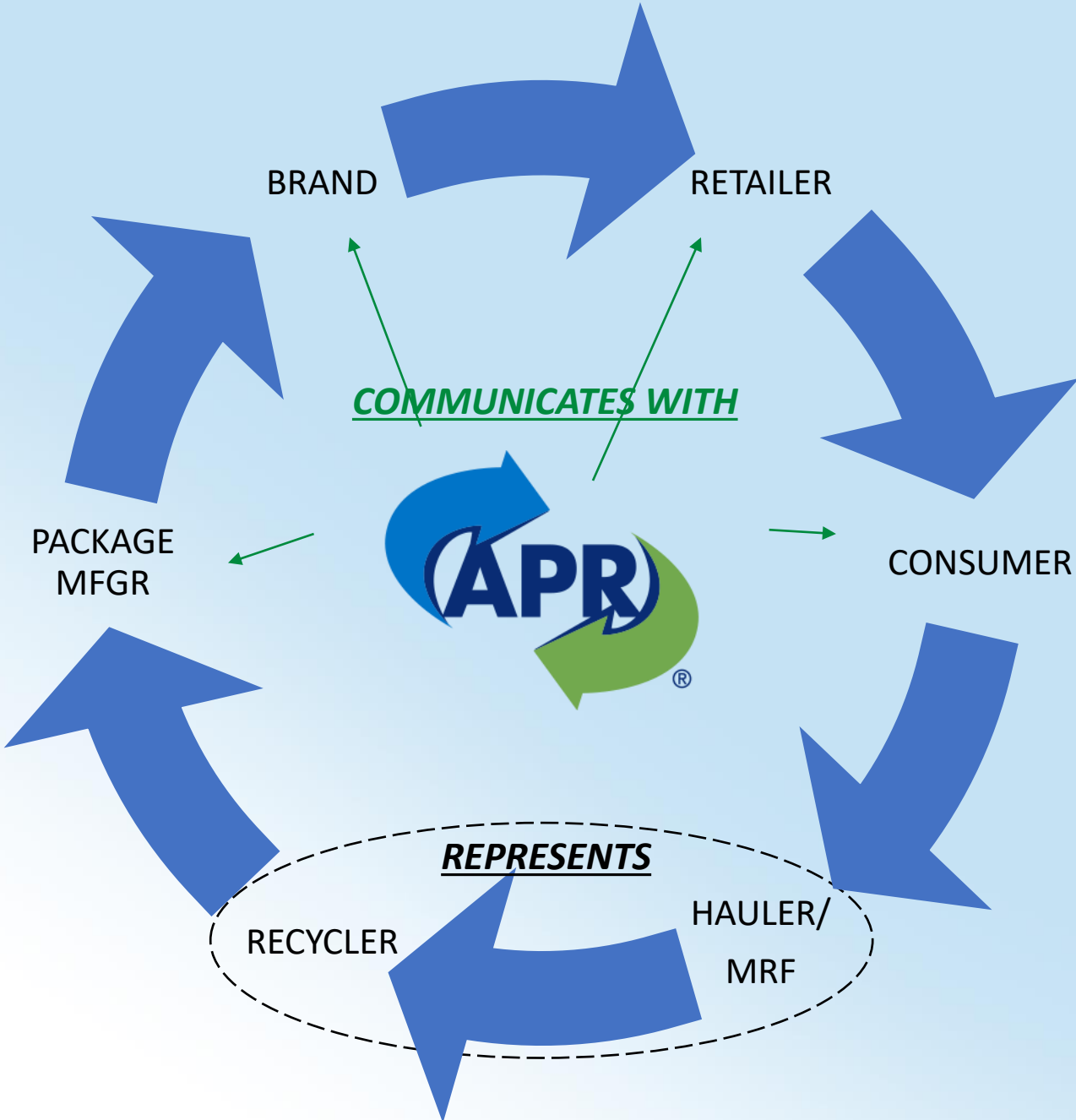
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# WHO IS APR? ENSURING PACKAGE DESIGN FITS WITH RECYCLING INFRASTRUCTURE

- APR Design® Guide for Plastics Recyclability
- Test Methods
- Training
- Communication
- Advocacy



# PLASTICS RECYCLING VALUE CHAIN



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# APR MEMBER SAMPLING



CUSTOM POLYMERS, INC.  
RECYCLE.DIFFERENT.



CLEAN TECH  
INCORPORATED



# LABELING: RESIN IDENTIFICATION CODES

- Only Identify the Material
- They DO NOT mean it's recyclable





# TYPES OF PLASTIC PACKAGING: PET



*Most recycled plastic if designed correctly!*

- Stiff, strong, heat resistant
- Clear
- Good chemical resistance
- Good oxygen and CO<sub>2</sub> gas barrier
- Excellent food and beverage safety credentials



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# TYPES OF PLASTIC PACKAGING: HDPE



*Widely recycled if designed correctly!*

- Strong
- Light
- Versatile
- Good moisture barrier



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# TYPES OF PLASTIC PACKAGING: PVC



*No postconsumer recycling programs*

- Stiff
- Clear
- Excellent chemical resistance
- Processed at low temperatures



# TYPES OF PLASTIC PACKAGING: LDPE



*Recycled in Store Drop off programs if designed correctly!*

- Flexible
- Thin
- Stretchable



# TYPES OF PLASTIC PACKAGING: PP

*Widely recycled if designed correctly!*

- Stiff, impact and heat resistant.
- Can be used in hot filling and retort
- Good moisture barrier
- Light weight
- Good for hinged closure



# TYPES OF PLASTIC PACKAGING: PS

*Extremely limited postconsumer recycling programs*



- Easily foamed for insulated applications



# TYPES OF PLASTIC PACKAGING: OTHER

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*No collection or processing mechanisms*



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# WHAT MAKES SOMETHING RECYCLABLE?

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60% consumer access



Processed by existing infrastructure

- sort
- clean

Can be manufactured into identifiable product



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# WHAT MAKES SOMETHING RECYCLABLE?

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60% consumer access

- PET
- HDPE
- PP
- PE film



Processed by existing infrastructure

- sort
- clean

Can be manufactured into identifiable product



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# WHAT MAKES SOMETHING RECYCLABLE?

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60% consumer access

81% OF  
CONSUMER  
FACING  
PACKAGES

- PET
- HDPE
- PP
- PE film



Processed by existing infrastructure

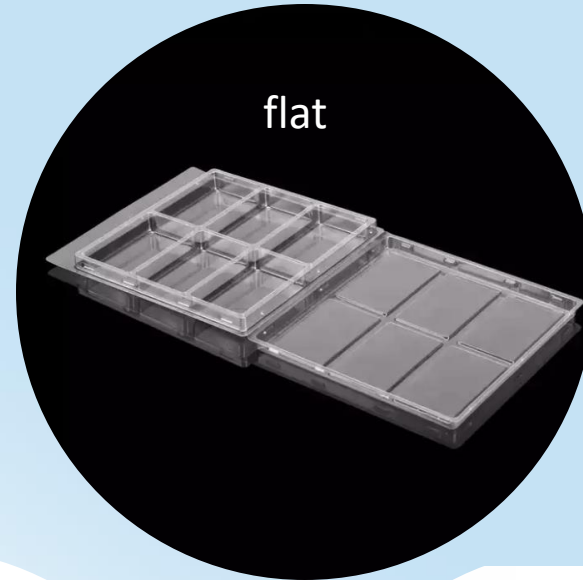
- sort
- clean

Can be manufactured into identifiable product



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# DESIGN FEATURES THAT MAY CAUSE POOR SORTING





caps



Many labels

**ITEMS THAT  
DON'T  
CAUSE  
PROBLEMS**



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## Narrative

### Plastic Recycling Doesn't Work and Will Never Work

If the plastics industry is following the tobacco industry's playbook, it may never admit to the failure of plastics recycling.

JUDITH ENCK AND JAN DELL MAY 30, 2022



## THE CURRENT SITUATION

## Reality

August 11, 2022 11:44 AM

**APR: US recyclers have capacity to grow, but not enough feedstock**



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Brands are changing their portfolios to be recyclable



# THE CURRENT SITUATION



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Meets Critical Guidance



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2019 – 19

2022 - 50



# DESIGN GUIDE TRAINING PROGRAM COMPLETED





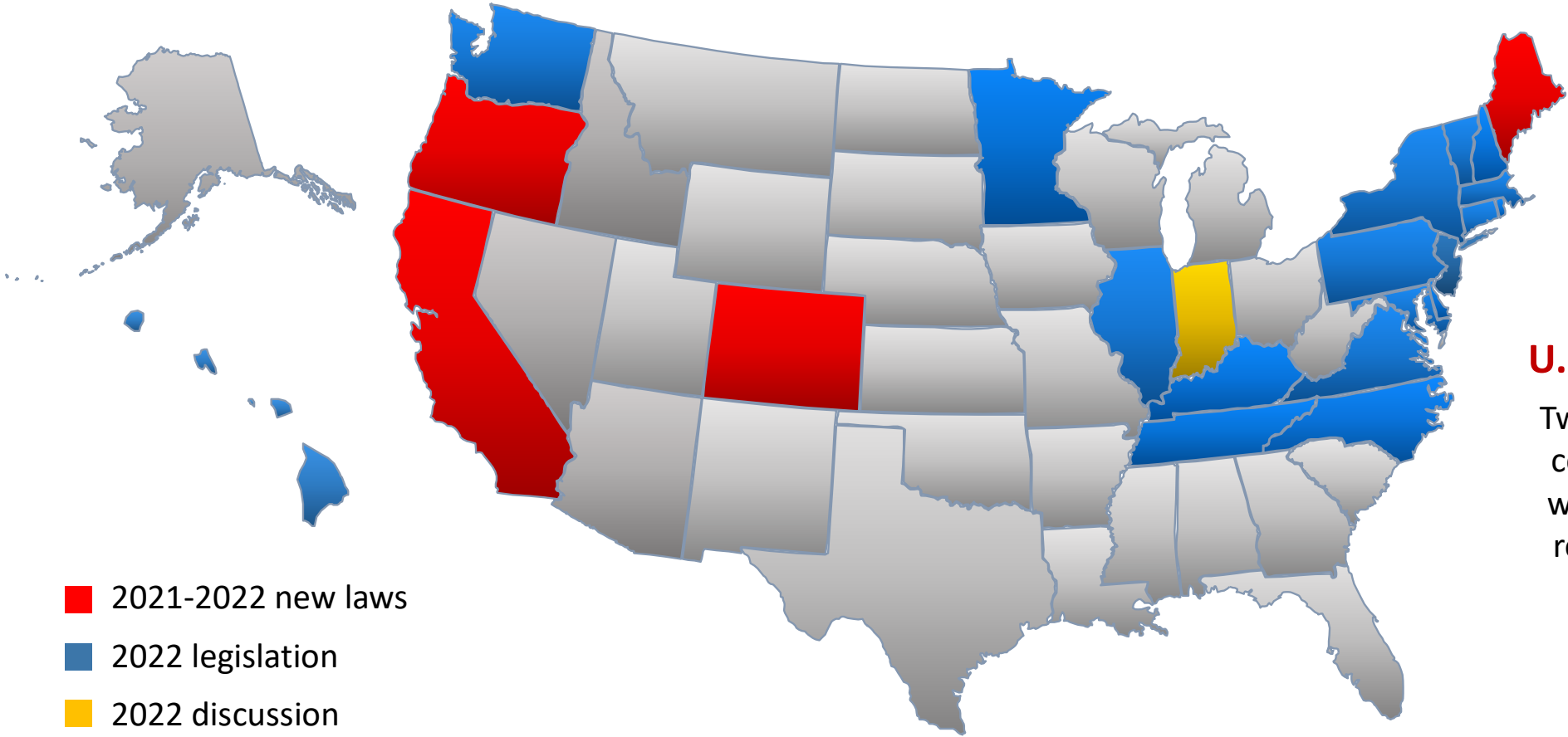


# WHATS IN THE FUTURE



# LEGISLATION

## Packaging Producer Responsibility – 2022 Activity



- 2021-2022 new laws
- 2022 legislation
- 2022 discussion

% of the US population:  
- 15% existing  
- 51% in discussion

**U.S. Congress**  
Two bills under consideration with producer responsibility language

# CHEMICAL RECYCLING

The answer to problematic packaging?

- Can process complicated packaging into very pure material
- Generally more expensive than mechanical recycling (model works if they pay less for incoming material)

**The Challenge: How to isolate and collect complicated packaging cheaply**

Chemical Recycling may have a complementary role but the details are TBD



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# QUESTIONS

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