



Real Change, At Scale.



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# Delterra works in multiple countries to address a root cause of the global waste crisis: breaking the cycle of insufficient supply and weak demand for recycled materials

## RETHINKING RECYCLING

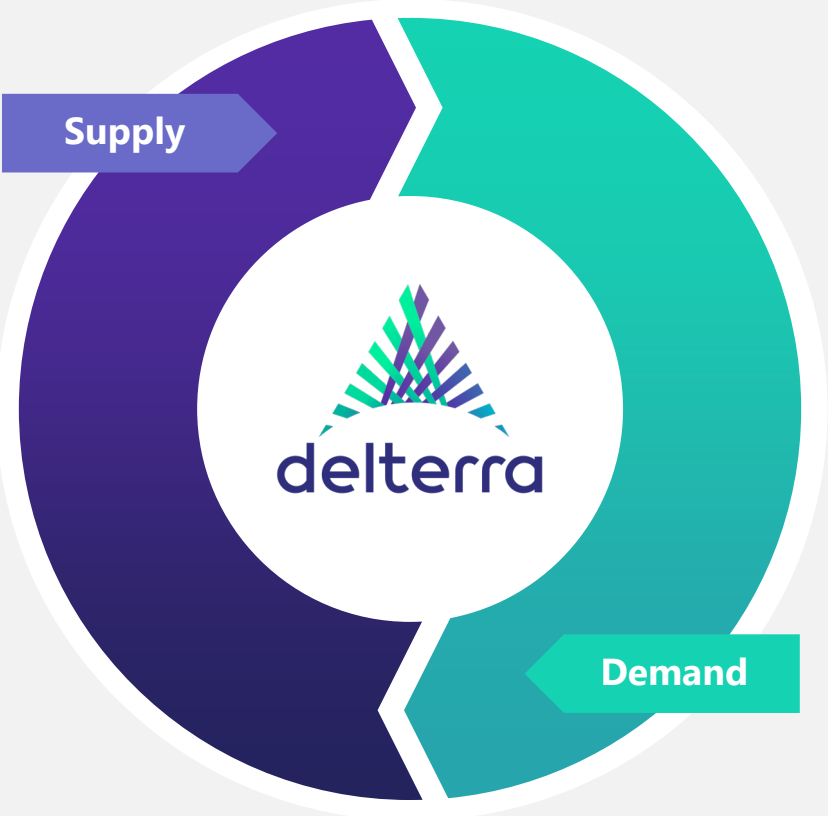


Households & businesses



Collectors & Sorters

Working with municipalities and communities



## RESHAPING MARKETS



Aggregators & transporters

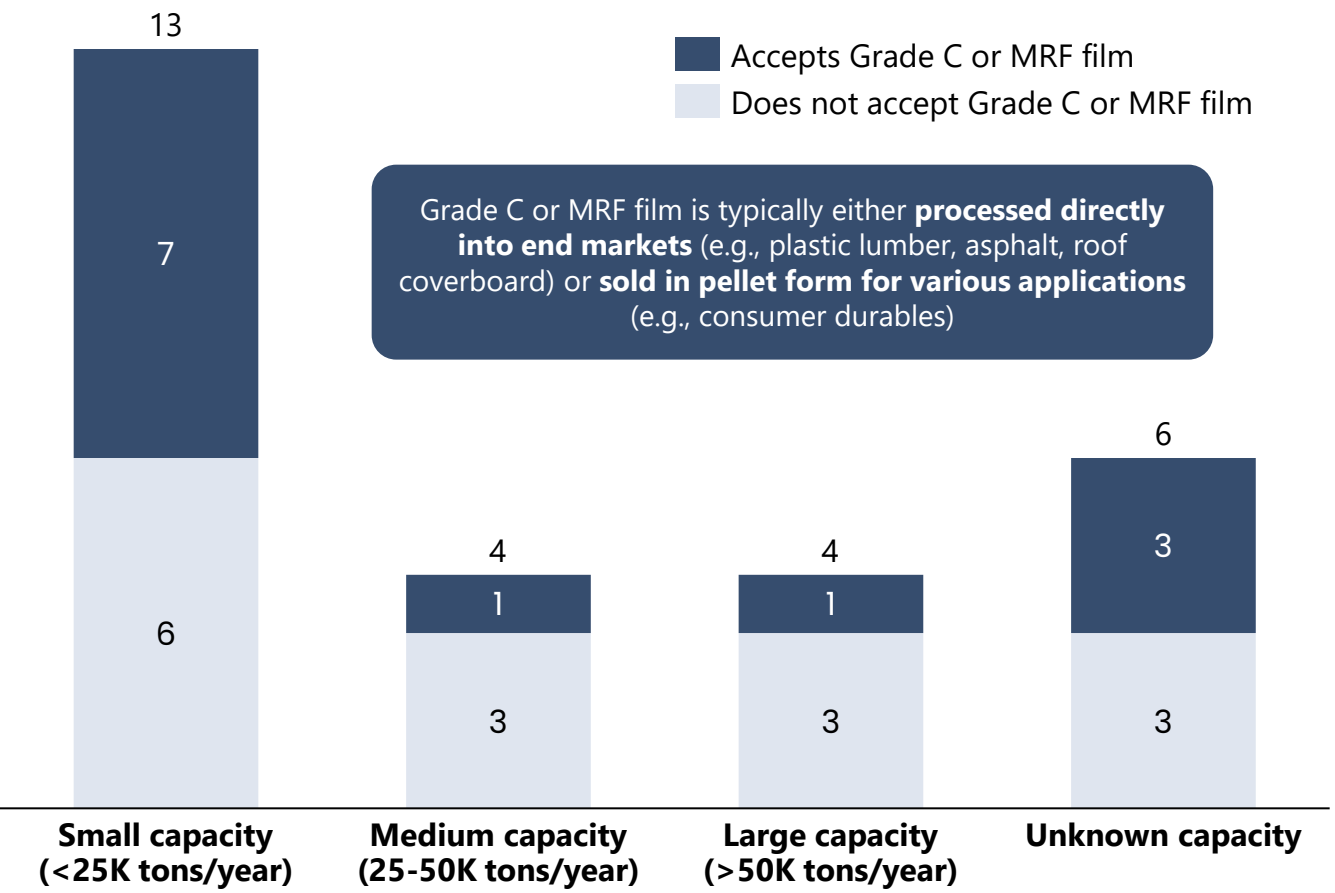


Processors & End buyers

Working with companies and institutions

# Under SB 54, California could add 400-800K tons/year of post-residential PE film to US supply, but limited US reclaimer experience with lower-grade material translates to skepticism on new applications

Currently operating mechanical flexible PE recyclers in North America, count



- **California could generate 400-800K tons/year of post-residential PE film<sup>1</sup>**, adding to the ~200K tons/year generated by the rest of the US under a business-as-usual scenario<sup>2</sup>
- However, US manufacturers are **hesitant to use anything below Grade A** given limited experience – in turn **limiting the willingness of reclaimers to process lower grades** without incentives
- **A more mature market in Europe** - boosted by recycled content mandates - has demonstrated technical feasibility for several applications that have not been proven in the US but which offer significant opportunities to increase demand for recycled film and flexible PE

Source: CAA, interviews with reclaimers, company websites

1. Estimates based on: lower bound estimate derived from 75-88 lbs/household/year of film and flexible packaging generation (source: TRP) multiplied by 13.8M households in California and 115M households in rest of US. Upper-bound estimate for California based on CAA perspective.  
 2. Based on Closed Loop Partners estimated recycling rate for residential PE in the US



**... BUT EXISTING END-MARKETS ARE NOT ENOUGH TO ABSORB THE EXPECTED GROWTH IN PCR VOLUMES**

**Delterra, working with Eunomia and funded by Amcor and Kraft Heinz, has launched an initiative to build new end-markets for recycled flexible plastics in the U.S.**

# The Demand Accelerator brings together industry leaders to develop new responsible end markets for recycled LDPE



## Objective

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The Demand Accelerator will demonstrate progress by **enabling the movement of mechanically recycled, post-residential PE film from California into new, viable end market(s)** that can accept material of this quality, increasing the scale and resiliency of demand beyond current outlets

## Approach

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We believe the best path to achieving this is to **pilot the most technically and economically feasible application(s) that have not yet been demonstrated** with post-residential PE film in the US, by:

- **Providing a technical demonstration** of how post-residential bales and the pellets being produced from that material could be successfully incorporated into one or more specified end products, in partnership with a company that makes these products
- **Quantifying the financial support** required to overcome the cost differential of using post-residential PCR for the end markets that we trial (including cost of secondary sortation if required)

# Pilot: Incorporating flexible/film PCR into new products

*Pilot could be implemented for variety of end markets (e.g., construction films, durable goods)*

## Timeline (12-18 months):

**We are here**

### Stage 1: Pilot preparation (4-8 months)

### Stage 2: Pilot execution and reporting (8-12 months)

#### Phase 0: Develop preliminary end-market list (1-2 months)

- Develop list of end-market opportunities
- Size potential demand, complexity, and timeline for each market
- Conduct desk research to create first-pass of prioritized end-market list to progress to field research
- Use this research to create common starting point during Accelerator kick off meeting

#### Phase 1: Prioritize end-markets to short-list (1-2 months)

- Interview end-market producers, gauge interest to participate
- Collect specs from reclaimers, convertors, and end-markets
- Analyze end-market/PCR combinations to determine most likely to be technically feasible
- Refine prioritized end-market list based on learnings and willingness to participate

#### Phase 2: Finalize pilot details through lab tests (2-4 months)

- For top 3 end-markets, buy pellet samples & conduct R&D to test for technical requirements
- Finalize end-market selection for pilot
- Secure contracts with selected end-market, reclaimer, and convertor
- Finalize pilot details including run size, timeline, testing requirements, etc..
- Build draft economics and trade-off analysis

#### Phase 3: Run production trials and field tests (6-9+ months)

- Conduct production runs and corresponding field testing with converters and end-markets
- Track quality, yield, and operational considerations
- Assess economic implications and identify roadblocks to scaling
- Develop and test where possible financial tools to create the right economic incentives for PCR use by end markets

#### Phase 4: Analyze & synthesis results for final report (2-3 months)

- Summarize key findings, including market size, costs, financial mechanisms, and feasibility
- Outline implications for compliance programs and industry adoption
- Share with stakeholders including peer institutions and regulators

#### Deliverables:

- Prioritized list of end-markets that are sizable with highest likelihood to absorb PCR
- Identified top 3 end-markets with business cases developed and PCR samples tested against end-market requirements
- Defined pilot details including contracts with end-market, reclaimer, and convertor

#### Deliverables:

- Completed technical validation and production trials using PCR, with data on quality, yield, and operational performance
- Feasibility analysis, financial models, and scale-up considerations, recommendations and synthesis to inform EPR

# We used several criteria to shortlist end markets for further analysis and potential trials

## Past trials (additionality)

Is post-residential PCR currently being used in North America for the specified product, and would a trial (if successful) demonstrate new technical findings?

## Technical feasibility for converter

To what extent will a converter need to adapt processes and modify product specifications to produce a suitable product using post-residential PCR?

## Technical feasibility for reclaimer

To what extent will a reclaimer need to adapt processes and recipes to produce suitable PCR?

## Potential to absorb post-residential PCR

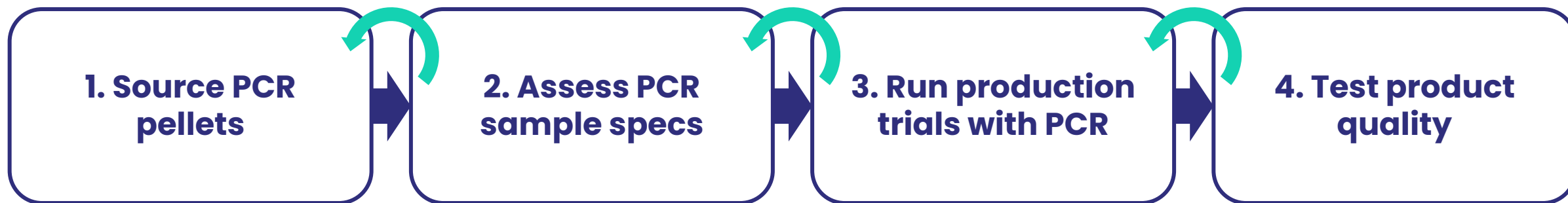
What volume of post-residential PCR could the end market absorb? (expected 2032 PE absorbed by end market \* percentage range of PCR that could be incorporated)

Based on these criteria, we are:

- **Most interested** in rigid and flexible applications with less challenging conversion technologies
- **Less interested** in exploring trials for composite materials that are already at play in North America (e.g., plastic lumber)

# We are now looking for converters and product manufacturers to work with us to test recycled household PE film in real commercial applications

**Delterra will support every step of the process**



Project team to iterate with reclaimer partner to **produce pellets sourced from post-residential PE film** that meet converter feedstock requirements

Converter partner to **conduct required sample testing** with support from project team

Converter partner to **incorporate PCR feedstock into end-product** at defined percentages (e.g., 10-50%), varying by application; select results to be shared with project team

Converter partner to **QA final product** and share results with Delterra

Delterra is **also seeking additional funders** as we enter the pilot phase of this work



# Thank you

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