

V-Cycle Task Force Update for VSC Resource Efficiency Initiative

Presented to VSC Vinyl Recycling Summit

July 19, 2021

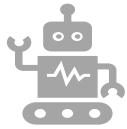
Richard Krock

SVP, Regulatory and Technical Affairs

Value Proposition - V-Cycle Task Force



An industry wide procompetitive collaboration to create a movement that



**Drives
innovation in
technology**



**Increases
infrastructure
investments**



**Addresses
issues**



**Informs
recyclers and
product
producers**

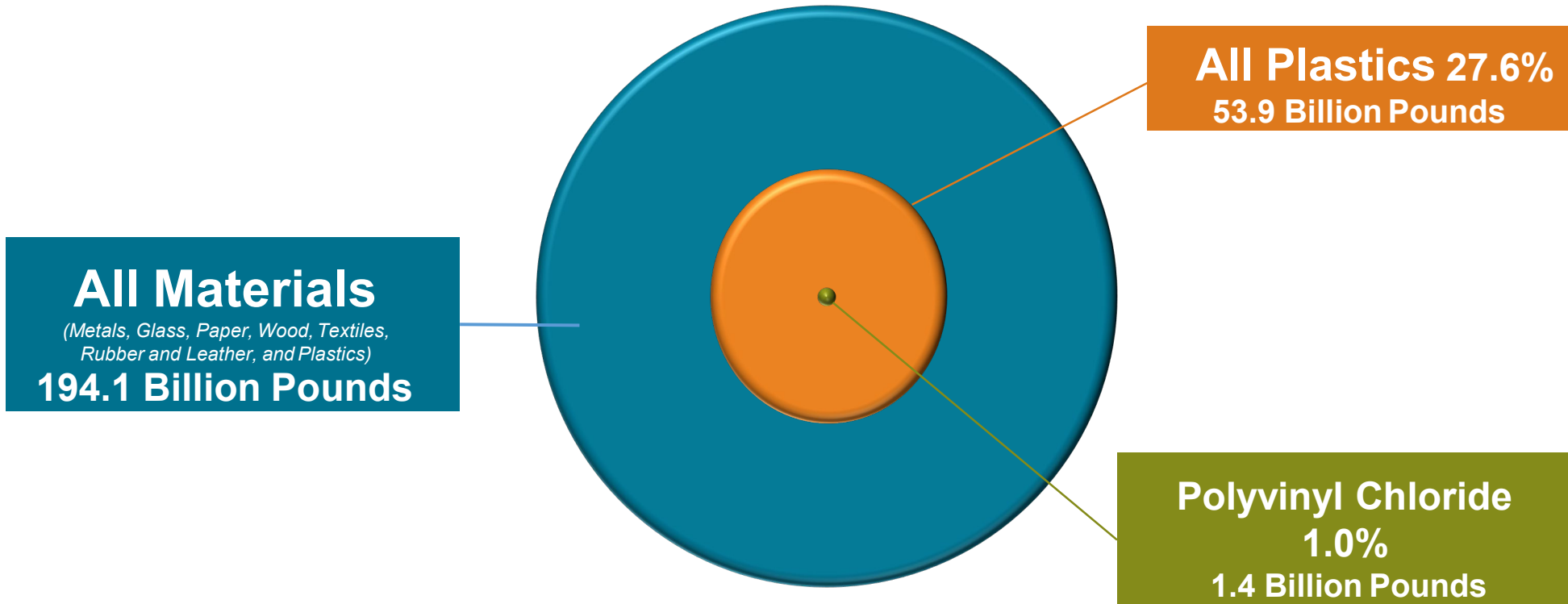


**Communicates
success stories**

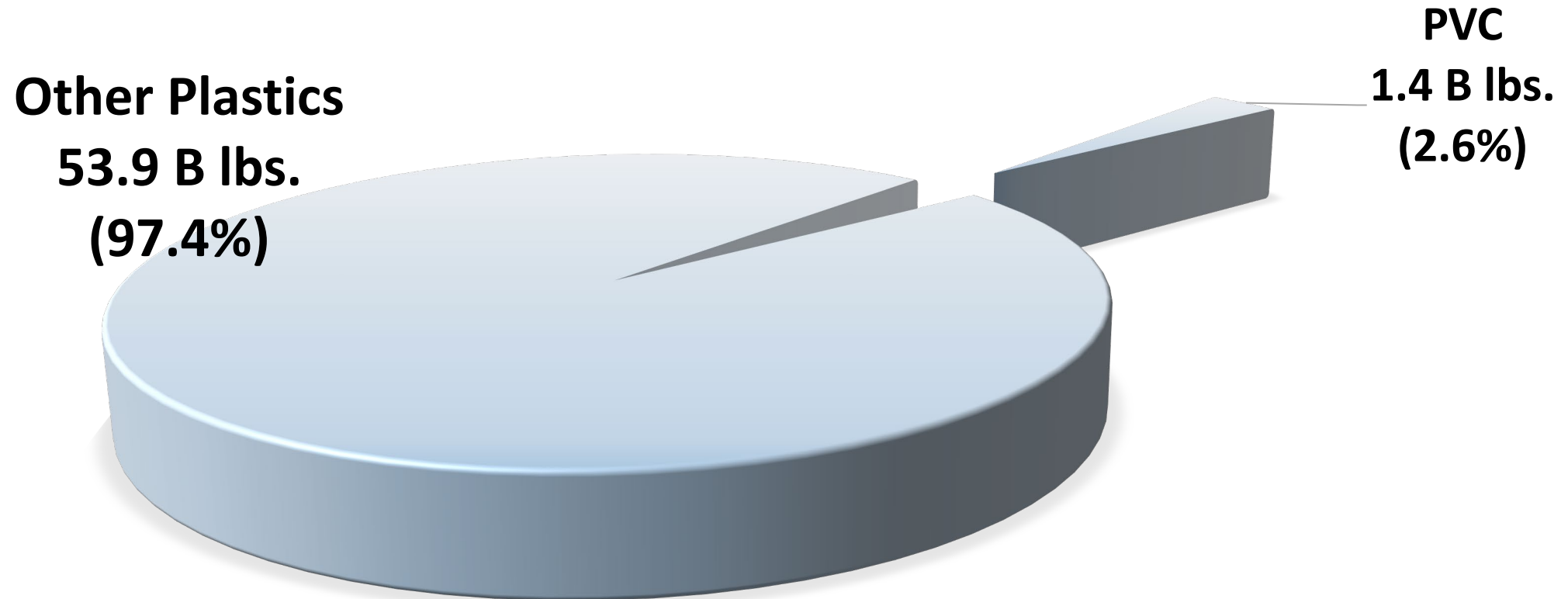


Grows recycling throughout the vinyl value chain

MSW Landfilled PVC in Perspective



EPA Plastics in Municipal Solid Waste: PVC is a Small Component



Source: US EPA MSW Report for 2019

Tarnell Recycling Survey – 2019 Statistics

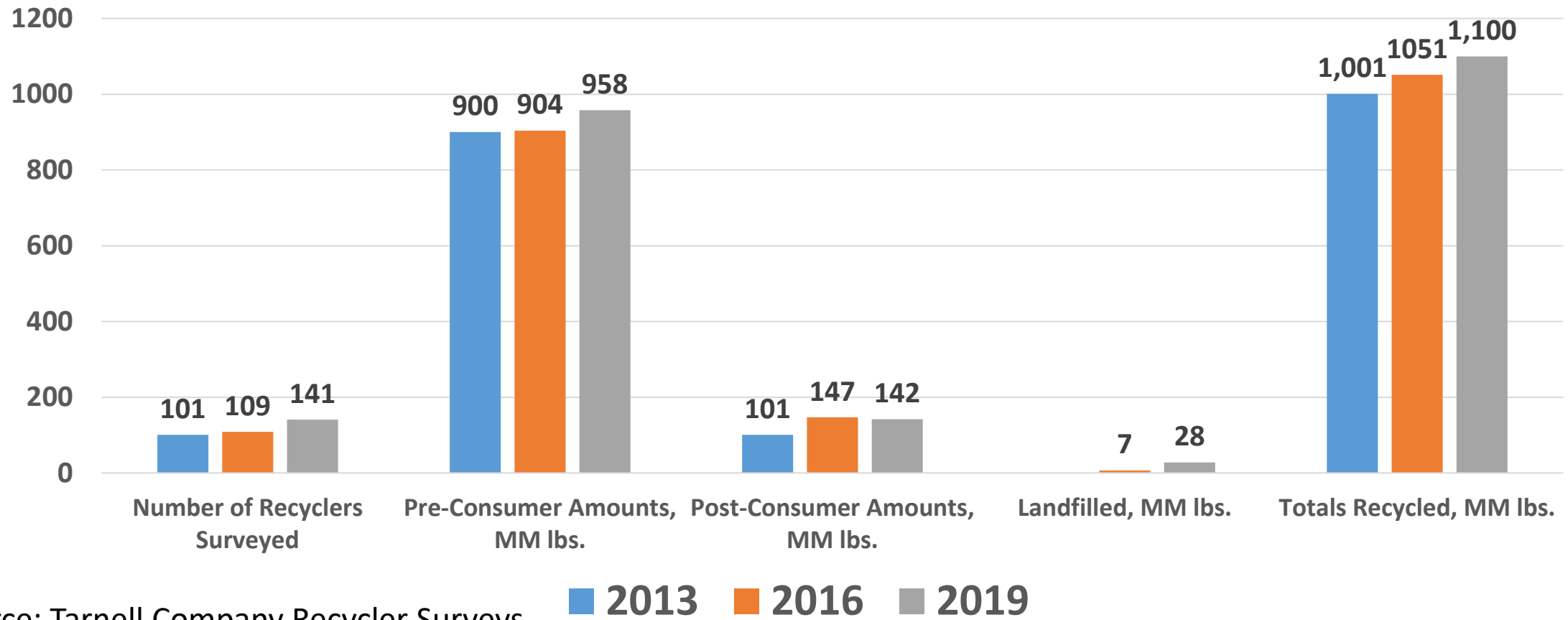
- Volumes of PVC materials recycled in the U.S. and Canada
 - 958 million pounds *pre consumer* and
 - 142 million pounds *post-consumer*
 - 1,100 million pounds *total recycled*
- Recycler Profiles
 - 127 recyclers, brokers, & manufacturers in 32 U.S. States
 - 14 recyclers & manufacturers in 3 Canadian Provinces

Sorting Line	Dry Separation	Wet Separation	Washing & Drying	Shredding	Grinding	Pulverizing	Blending	Repelletizing	Compounding	Melt Filtration	Finished Product Manufacturing
33	1	1	16	54	110	33	35	31	41	0	41

Tarnell Survey Comparisons: 2013, 2016, 2019

U.S. & Canada Vinyl Recycling Summary

VI Estimate of Overall US Vinyl Recycling Rate = $(1.3/1+1.7+1)=35\%$



Source: Tarnell Company Recycler Surveys

Industry Goal: Increase Post-Consumer Recycling by 10% over 2016 amounts by 2025

- Modest but achievable
- Amounts to reaching 160 million pounds post-consumer recycled amounts
- Will require \$20 - \$30 million in capital investments in baling, sorting, separating, washing, shredding, grinding, blending, pelletizing, and possibly melt filtering capabilities
- Brand producers are largest post-consumer recyclers today in flooring, wallcovering, roofing, and siding

➤ Challenges:

- Attracting investors
- Removing contamination, inconsistent quality

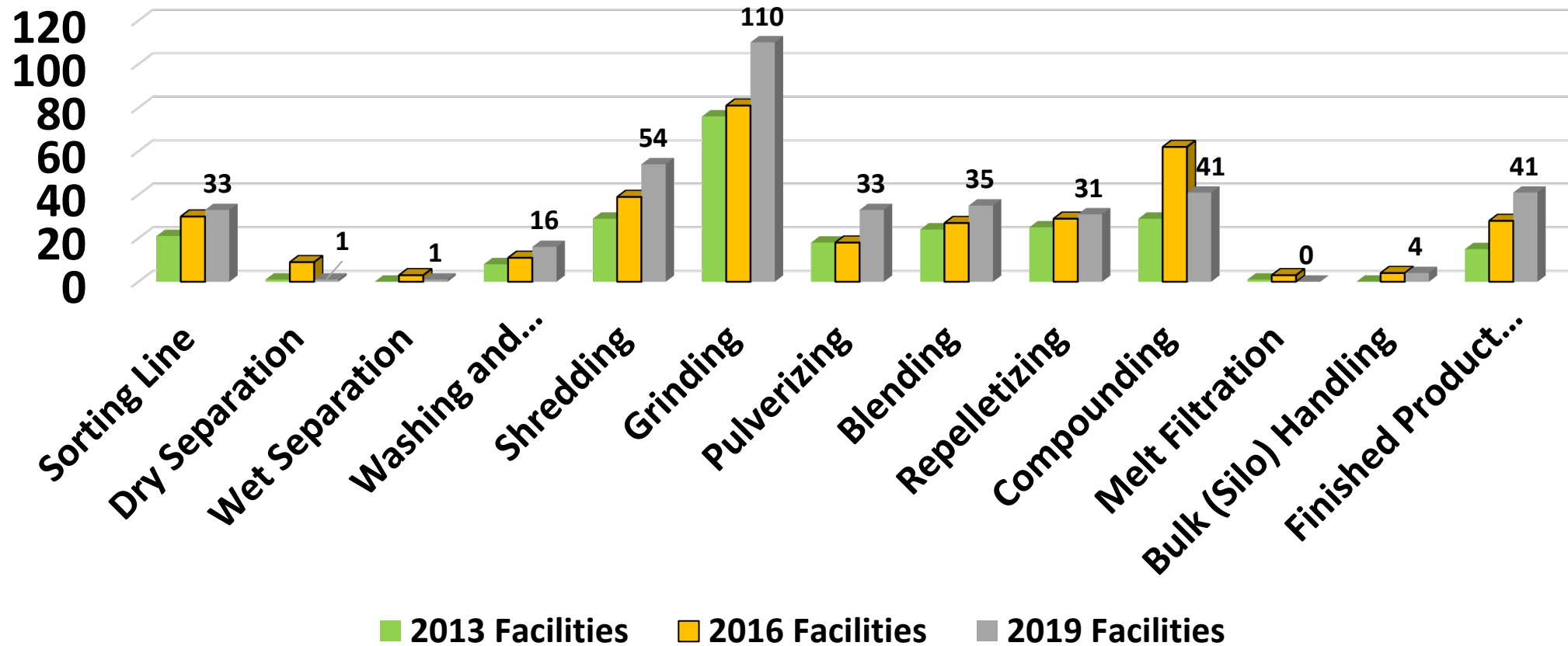
2021 Deliverables - V-Cycle Task Force :

- *Develop roadmap for achieving long term recycling goal of increasing post-consumer recycling by 10% over 2016 levels by 2025*
- *Pilot Projects*
 - *Rigid vinyl siding*
 - *Flexible vinyl single-ply roofing*
- *Market by market metrification*
 - *Age of materials in place*
 - *End of life dispositions*
 - *Incompatible additives*

2021 Draft V-Cycle Roadmap	Stakeholder Activities (Lead Highlighted)								
Focus Area	Industry Trade Associations	Resin, Ingredient Producers	Material Compounders	Product Manufacturers	Contractors & Installers	Collection & Logistics	Recyclers	Technology Developers & Equipment Providers	Investors, Grant Funders
Value Chain Engagement:									
Sustainability Commitment	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pilot Projects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Market Metrification	✓	✓	✓	✓					
Expand/Create Infrastructure:									
Identify Existing Gaps	✓	✓	✓	✓	✓	✓	✓	✓	✓
Align Resources	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increase collection	✓			✓	✓	✓	✓	✓	✓
Develop Funding	✓	✓	✓	✓			✓	✓	✓
Increase End Markets:									
Promote Value of Recycle Content	✓	✓	✓	✓	✓		✓	✓	✓
Improve Recyclate Quality	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compatibilize/Separate Additives	✓	✓	✓	✓			✓	✓	✓
Align Standards and Specifications	✓	✓	✓	✓			✓	✓	✓
Broaden Communications									
Emphasize Sustainability	✓	✓	✓	✓	✓	✓	✓	✓	✓
Enable Connections	✓	✓	✓	✓	✓	✓	✓	✓	✓
Create Training	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reward Successes	✓								

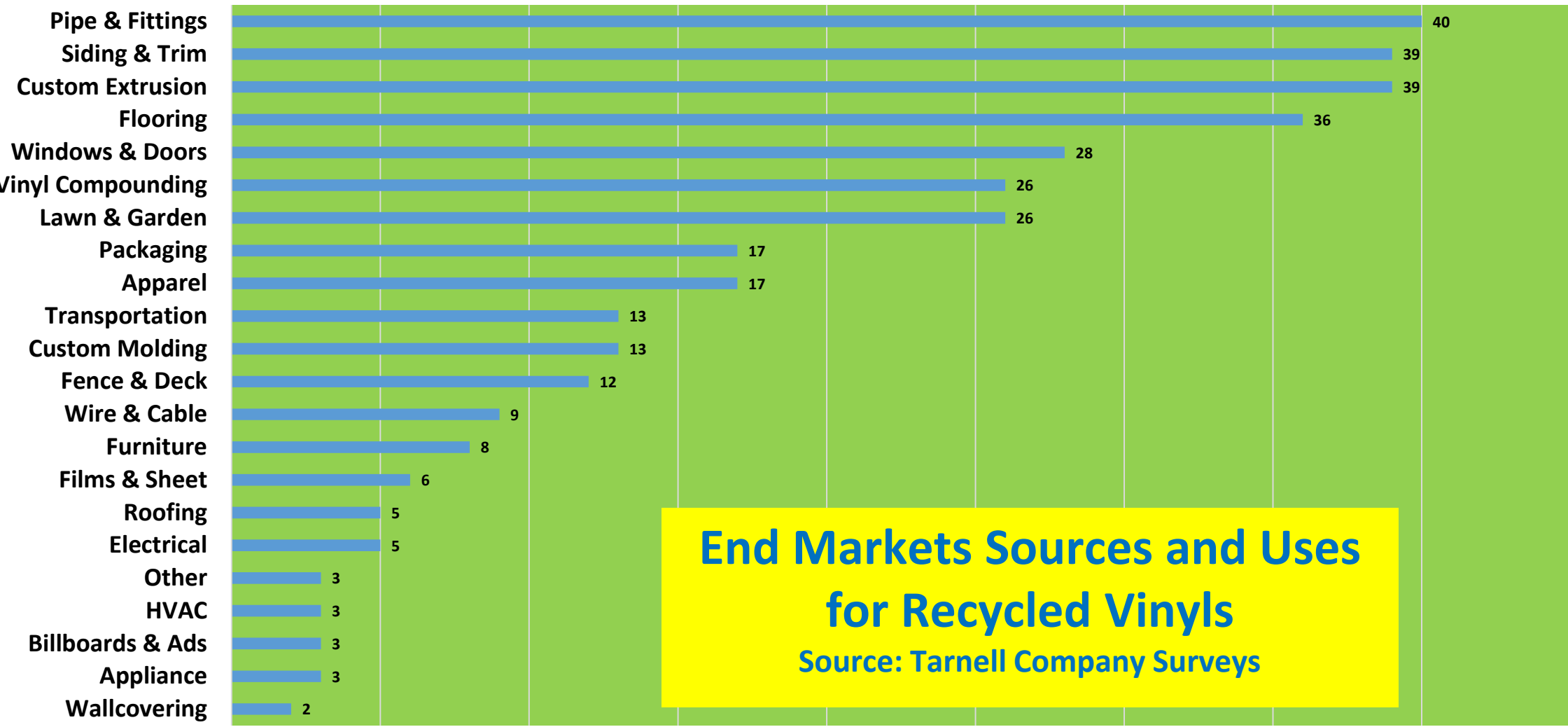
Reprocessing Capabilities Growing 2013 to 2019

Source: Tarnell Company Surveys



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Reward Successes	✓								

Number of Companies



**End Markets Sources and Uses
for Recycled Vinyls**
Source: Tarnell Company Surveys

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Rigid Pilot Program: Vinyl Siding Recovery

- In collaboration with Vinyl Siding Institute – 2021 kickoff
- Target collection in Northeast Ohio
- Pilot will work with entire value chain to facilitate recycling:
 - Manufacturers, Distributors, Contractors, & Installers
 - Solid Waste Districts
 - Logistics providers
 - Recyclers
 - End users – siding, fence, deck, trim



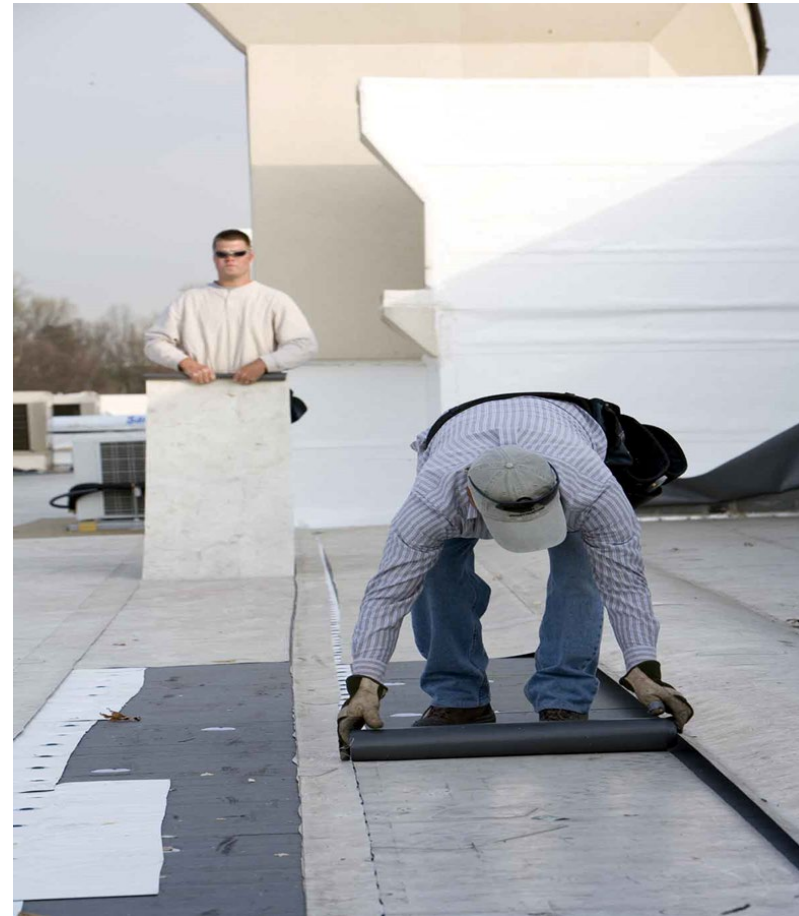
Northeast Ohio Vinyl Siding Recovery Coalition

- Led by: Matthew Dobson, CAE
Vice President, Vinyl Siding Institute, Inc.
(703) 244-2930
mdobson@vinylsiding.org



Flexible Pilot Program: Vinyl Roofing

- Demonstrate the feasibility of post-consumer vinyl roof recycling in a targeted geographic area. 2021 kickoff
- Identify hurdles to expansion of post-consumer roof recycling and potential solutions.
- Identify investment needed to expand post-consumer roof recycling.
- Share best practices within the vinyl roofing industry.



Vinyl Roofing Pilot Program

- Led by: Jennifer Oblock
Chemical Fabrics & Film Association (CFFA)
216-241-7333 x7734
joblock@thomasamc.com
- Assisting: Jay Thomas
Vinyl Sustainability Council
jthomas@vinylinfo.org

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2020 Recycling Awards

The AZEK Co. – Rigid PVC TimberTech Decking Product Line

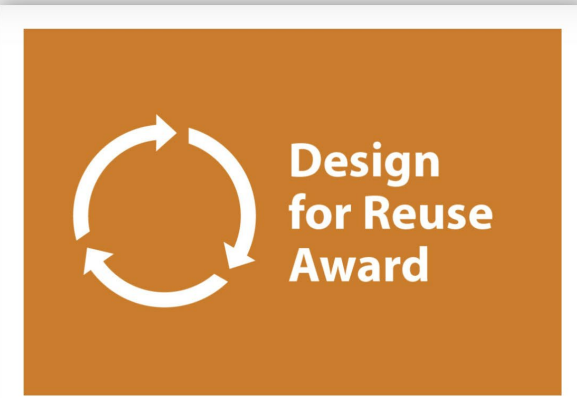


- Increased recycle content of pre- and post-consumer material to 47 % in 2019 from over 150 externally sourced supplies.

Sika Sarnafil – Flex PVC Rogers Centre Roof Recovery, Toronto



- Recycled 460,000 sq. ft. 30 year old vinyl roof in Downtown Toronto, Canada into new PVC roofing product. Replacement Sarnafil product contained 10% UL certified recycled PVC content



2021 Design for Reuse Award

The “2021 Design for Reuse Award” recognizes vinyl products purposely designed for disassembly, recycling, or reuse at the product’s end of life. Priority is given to those products where these [...]

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2021 Social Impact Award

The 2021 “Social Impact Award” recognizes the efforts of a Vinyl Sustainability Council (VSC) member that has demonstrated a strong commitment to their communities. This annual award acknowledges outstanding programs [...]

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2021 Vinyl Recycling Award

The “2021 Vinyl Recycling Award” recognizes the efforts of recyclers and product manufacturers with operations in North America that find new solutions and or markets for PVC end-of-life or scrap [...]

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Join the movement and invest in innovation!

Summary Points

- Over 1 billion pounds of vinyl are recycled each year!
- Vinyl represents a small component of municipal and C&D waste!
- Resource efficiency is the top impact area for sustainability!
- Investments in infrastructure are critical!
- Communicate your success stories at:
<https://www.vinylinfo.org/vinyl-recycling-story-submissions-form/>
- Apply for VSC Recycling Award by October 1, 2021 at:
<https://vantagevinyl.com/2021-vinyl-recycler-of-the-year/>

Thank You for Participating Questions?

Richard Krock
rkrock@vinylinfo.org