The Sustainable Materials Management Webinar Series

Cartons: Recycling’s Newest Success Story, Building Access Nationwide for Carton Recycling

Tuesday December 16, 2014/1:30 – 2:45PM ET

Presenter: Jason Pelz, Vice President of Environment for Tetra Pak Inc.
Cartons: Recycling’s Newest Success Story

Building Access Nationwide for Carton Recycling

PARMC Webinar Series
December 2014
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What are cartons?

CARTONS ARE LIGHTWEIGHT, SUSTAINABLE packages for REFRIGERATED and SHELF STABLE food and beverage products.
Who is the Carton Council?

Carton Council

A group of carton manufacturers united to deliver long term, collaborative solutions to divert valuable cartons from the landfill.

Associate Member

Weyerhaeuser
Our Goals & Outcomes

- INCREASE ACCESS
- INCREASE RECOVERY

In under five years, we’ve brought carton recycling to more than half of all US households!
More access = more visibility

- The on-pack logo makes carton recycling more visible to consumers because the package informs consumers of what to do.

- Brands that use carton packaging are now able to include a qualified logo* on their packaging.

* Currently with a negative qualifying statement in compliance with Federal Trade Commission guidelines. As cartons reached a significant majority of households with carton recycling access, the packaging may reflect only the recycle symbol.
Visibility = More Recovery

More access brings a better recycling message on cartons

<table>
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<th>Pre 2010</th>
<th>2010 - present</th>
<th>Coming Soon</th>
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<tbody>
<tr>
<td>No Message</td>
<td>Between 30-60% access</td>
<td>Over 60% access</td>
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Many cartons already display recyclable messaging – but we want more!
Why Cartons? Why Recycling?
Cartons are sustainable

Cartons are one of the *most sustainable* options for food and beverage packaging.

- **RENEW**
  - Made mainly from paper
  - Paper is a 100% renewable resource
  - Fiber comes from well-managed forests

- **REDUCE**
  - Light weight and compact
  - Low package-product ratio
  - Low carbon footprint through lifecycle

- **RECYCLE**
  - Cartons are recyclable!
Cartons contain valuable materials

Made with 100% virgin fibers, cartons contain some of the best fiber still in the waste stream.

Refrigerated “gable top” cartons
- 80% paper
- 20% polyethylene

Shelf-stable “aseptic” cartons
- 74% paper,
- 22% polyethylene
- 4% aluminum

Cartons are Not Wax Coated
Cartons are recyclable

Carton Recycling is Standard Practice Globally

- Cartons recycled in US for more than 2 decades
- Carton recycling is already available to more than half of US residents.

Over 140 mills taking cartons worldwide
How Carton Council Achieves its Goals
Target the Recycling Supply Chain

Our goal: Build carton recovery
Work Backwards from End Markets

Build sustainable markets - “Build the Demand”

Create sustainable infrastructure - “Build the Pipeline”

Develop awareness and participation “Fill the Pipeline”
Building Sustainable Markets

Building the Demand
Where to Start?

- Cartons are small volume, but valuable
  - .5% to 2% of incoming loads in successful programs
  - EPA estimates 500,000 tons of cartons per year in municipal waste stream.
- In 2008, only 1 active mill in North America handling cartons
- All components of cartons have potential value
  - poly and ply/al residual can be recycled into other products.
Looking at Markets

- Containerboard
- Tissue
- Newsprint
- Printing & Writing
Building End Market Demand

- From 1 active mill in NA in 2008 to many that are now buying cartons, with more demand in pipeline
Pacific Rim End Markets

- Shin Chang & Paper Industry Co. Ltd, Chungchongnam
- Daewang Paper Co Ltd, Gunpo-si
- Samjung Pulp Ind. Co Ltd., Godeokmyeon
- Daewon Paper Co, Pochun

- Fiber Pattina, Thailand
What is it that’s moving?

SIMS Facility   Brooklyn, NY   August 2014
Grade #52 officially recognized by recycling industry in April 2011

New PSI* Spec Grade #52 - Definition

Consists of liquid packing board containers including empty, used PE coated, printed one-side aseptic and gable-top cartons containing no less than 70% bleached chemical fiber and may contain up to 6% aluminum foil and 24% PE film.

Prohibitive materials may not exceed 2%

Total out-throws may not exceed 5%

*PSI = The Paper Stock Industries (PSI) Chapter is a national chapter of the Institute of Scrap Recycling Industries, Inc. (ISRI). It is dedicated to the recovered paper industry
## Opportunities for Grade #52

<table>
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<tr>
<th>Product</th>
<th>Pacific Rim Mills</th>
<th>North American Mills</th>
<th>Source Material</th>
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<tbody>
<tr>
<td>Tissue and toweling products</td>
<td>• Shin Chang &amp; Paper Industry Co. Ltd, (S. Korea)</td>
<td>• Great Lakes Tissue (MI)</td>
<td>• Post-Consumer Cartons</td>
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<tr>
<td></td>
<td>• Daewang Paper (S. Korea)</td>
<td>• Kimberly-Clark (MX)</td>
<td>• Factory (Pre-Consumer) Waste</td>
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<td></td>
<td>• Samjung Pulp (S. Korea)</td>
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<td>• Filling Machine Waste</td>
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<tr>
<td></td>
<td>• Daewon Paper (S. Korea)</td>
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<td>• ONP, OMG, white ledger, other grades</td>
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<tr>
<td>De-inked pulp</td>
<td>• Fiber Pattana (Thailand)</td>
<td>• Fibrek (WV)</td>
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<td>• Fox River Fiber (WI)</td>
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<td>• GET (MX)</td>
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<tr>
<td>Building products</td>
<td>• Fiber Pattana (Thailand)</td>
<td>• ReWall (IA)</td>
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<tr>
<td>(wallboard, sheathing, ceiling</td>
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<td>tiles, roofing sheet)</td>
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Pricing for Grade #52

- Carton pricing generally follows Sorted Office Paper (SOP) pricing—varies by location of source, fiber mix, etc.

- Export pricing varies based on shipping container weights and locations—strong export demand—over 140 mills consuming cartons worldwide
How Cartons Move

- Carton Council **is not** a broker of materials
- Carton Council is a match maker
- Broker network and mills
  - Working with broker network works better in most cases
  - However it is possible to work directly with mills.
Key Measure of Carton Recovery Success

- **Yield**
  - Defined as % of incoming tons of post-consumer cartons that are recovered and manufactured into new product

- **Carton Bale**
  - Average of 75% fiber – very high quality, long virgin fiber, free of ink.
  - Mills able to recover up to 100% of fiber
  - Poly/Al fraction recovered by some mills
Markets Hierarchy

Preferred for highest yield
1) Whole carton recycling into building products
2) Positive sort of carton into tissue/pulp with poly/al recovery

Preferred for high yield
Positive sort of carton into tissue/pulp - Some poly/al used for energy

Acceptable (least preferred)
Mixed paper into domestic or export markets (various grades)

Unacceptable
Disposal

Requires positive sorting of cartons into Grade #52

Requires cartons to be accepted in recycling programs
Examples of End Products

Fiber

Whole Carton products

Poly products
View from a Mill

- Fox River Fiber in Wisconsin – Pulping Process
View from a Mill

- The pulp is sheeted, baled and shipped to their customers.
Building the Pipeline

Creating Sustainable Infrastructure
Impacts on Volume

Residents fail to put recyclable packaging in appropriate bin

Set-out recyclables don’t end up in the truck

Materials don’t end up in designated commodity bunker in MRF

Bales are rejected/downgraded and commodity is processed
Create Sustainable Infrastructure

- Work with Facilities to
  - Agree to take cartons
  - Agree to report data to Carton Council
    - Household access and tonnages

- Positive Sort of Cartons at Facilities
  - Capital equipment grants available, based on campaign’s criteria
Create Sustainable Infrastructure

- Range of Solutions for MRFs
  - Manual sort with bunkers
  - Vacuum-assisted manual sort
  - Optical sorting

- Matching Right Solution to each MRF
  - Carton Council best practices drawn from experience with MRFs of all sizes
  - Working closely with equipment suppliers and MRF engineers
  - Connecting MRF to carton markets
  - Matching equipment grant to access gains
Create Sustainable Infrastructure

- Optional Assistance Offered
  - Matchmaking with broker networks
    - To include movement of bales/partial loads.
  - Free promotional materials
  - Support for customer outreach
Filling the Pipeline

Develop Awareness and Participation
Develop Consumer Awareness and Participation

- Notify users of facility that now accepts cartons
  - Collectors
  - Communities
  - Residents

- Outcomes
  - Increased visibility of carton recycling
  - Drive carton volumes to facilities
Carton Council offers series of tools to assist with promotion and education around carton recycling

- Tool-kit with template advertisements, etc.
- Mini-grants to assist with costs, case by case basis
- Large major metropolitan area awareness campaigns
Develop Consumer Awareness and Participation

- If you can recycle cartons at home, you can recycle cartons at school.
- Carton Council resources for school carton recycling programs:
  - Grants for program start-up
  - Grants for special recycle bins
  - Start-up Guide, Best Practices
  - Posters and other materials
Successes to Date

As of November 2014
Steady Progress since 2008

CAMPAIGN KICKOFF

1 4 8 10 12 14 15 16 17 17 18 22 30 35 41 48 ？ ？
280% Increase in Carton Recycling Access

- **2008—Before Campaign:**
  - Carton recycling programs in 24 states
  - 18% of U.S. households had access to carton recycling

- **Today:**
  - Carton recycling programs in 48 states
  - 52% of U.S. households have access to carton recycling
77 of the 100 largest U.S. cities have access to carton recycling.

61.5 million U.S. households can now recycle cartons in their communities.

Every month, more carton recycling programs are being added in schools, cities, towns, and counties across the country.
Campaign Performance - Access and Recovery

- Access campaign now over 50% - on track with goals from 2008 campaign kickoff
- Recovery is 2\textsuperscript{nd} piece of the puzzle.
Summary

- Carton recycling is real, it's happening!
- Cartons are valuable, in demand
- Markets exist
- Need to fill the pipeline with more cartons – add cartons to your program today!
- More access = more visibility of carton recycling.
Stay in touch….

Have a question, call the Carton Council at 1-855-7-CARTON

Visit RecycleCartons.com
CartonOpportunities.org
QUESTIONS?

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