COALITION for RESOURCE RECOVERY

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Global Green USA’s Coalition for Resource Recovery

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- Industry working group dedicated to transforming waste into assets.
- Conduct pilots in New York City to identify and program scalable, transferable waste diversion programs and technologies.
Generating Business Value through Creating a Zero Waste NYC

**NYC Opportunity**
- 15,000 tons/day

**Restaurant & Retail**
- 2,400 tons/day

**CORR’s Programs**

- **Food**: 1,100 tons/day
- **Fiber**: 700 tons/day
- **Plastic**: 300 tons/day
- **Metal**: 100 tons/day
- **Glass**: 70 tons/day

**Food Waste**

**Wholesale Packaging**

**Beverage Containers**

**Plastic Bags**

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A Coalition of Members

- Action Carting
- BASF
- Bemis
- Chemol
- DBB Enterprises
- Design & Source
- Dow Corning
- Duro Bag
- LBP Manufacturing
- International Paper
- Interstate Container
- MidPoint International
- N&V International
- Orwak
- PepsiCo
- Pratt Industries
- Pratt Institute
- Pret a Manger
- Smurfit Stone
- Solo Cup Company
- Spectra-Kote
- Starbucks
- Tomra
- TransTech
- Waste Management
- Western Michigan University
Weapons of Mass Destruction

Lack of Clean Water

Global Green USA
US Affiliate of
Green Cross International

Addressing Three of the Greatest Challenges Facing Humanity

Climate Change and Resource Consumption
Why Did We Start With OCC?
# Paper Food Packaging U.S Discards

<table>
<thead>
<tr>
<th>Paper Product Category</th>
<th>2008 Discarded Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper Plates &amp; Cups</td>
<td>1,250,000</td>
</tr>
<tr>
<td>Folding Cartons</td>
<td>3,460,000</td>
</tr>
<tr>
<td>Bags &amp; Sacks</td>
<td>730,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,440,000</strong></td>
</tr>
</tbody>
</table>

EPA Municipal Solid Waste 2008 Facts and Figures
## 2008 Generation & Discard Data

<table>
<thead>
<tr>
<th></th>
<th>Corrugated Boxes</th>
<th>Office Type Papers</th>
<th>Tissue Paper &amp; Towels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation</td>
<td>29,710,000</td>
<td>6,050,000</td>
<td>3,460,000</td>
</tr>
<tr>
<td>Recovery</td>
<td>22,760,000</td>
<td>4,290,000</td>
<td>Neg.</td>
</tr>
<tr>
<td>% Recovery</td>
<td>76.6%</td>
<td>70.9%</td>
<td>Neg</td>
</tr>
<tr>
<td>Discards</td>
<td>6,950,000</td>
<td>1,760,000</td>
<td>3,460,000</td>
</tr>
</tbody>
</table>

EPA Municipal Solid Waste 2008 Facts and Figures
Concept being Tested through NYC Pilots

- All restaurants throughout the United States bag their spent paper food packaging in 100% recycled content paper bags that are collected and recycled with its old corrugated cardboard (OCC), reducing waste costs for restaurants, adding valuable fiber to the recycling stream, and creating a net greenhouse gas benefit.
Pilot Stages
## Metrics and Measurements

<table>
<thead>
<tr>
<th></th>
<th>4Q ’09</th>
<th>2nd Q ’10</th>
<th>4Q ’10</th>
<th>2Q ’11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lbs/Day</td>
<td>50</td>
<td>200</td>
<td>500</td>
<td>1,000</td>
</tr>
<tr>
<td>Percent Processing Volume</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>20% – 50%</td>
</tr>
<tr>
<td>Purity Criteria</td>
<td>≥80% Goal Met</td>
<td>Improve</td>
<td>Improve</td>
<td>≥90%</td>
</tr>
<tr>
<td>Actions to Improve Purity</td>
<td>Test paper bin liner</td>
<td>Test new bin prototype</td>
<td>Test new bin prototype</td>
<td></td>
</tr>
</tbody>
</table>
Material collected for the OCC trial will provide the volumes needed to test the material’s utility for a range of end uses including tissue, folding cartons, medium, and linerboard.
Mill Trial Results
<table>
<thead>
<tr>
<th></th>
<th>Lab</th>
<th>Mill 1</th>
<th>Mill 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedstock</td>
<td>Sbux Hot Cups &amp; Sleeves</td>
<td>PE &amp; PLA–Coated Hot &amp; Cold Cup Cut Waste</td>
<td>PE Coated Hot &amp; Cold Cup Cut Waste; 86% yield in repulpability Lab Test</td>
</tr>
<tr>
<td>% test material</td>
<td>20%</td>
<td>50%</td>
<td>10%</td>
</tr>
<tr>
<td>Pulper, Screen &amp; Process type</td>
<td>High Consistency Pulper, Low Density Reverse Cleaning</td>
<td>Batch, NA</td>
<td>Continuous. Low consistency, high sheer pulper w/detrasher system</td>
</tr>
<tr>
<td>Results</td>
<td>94% fiber yield for cups and sleeves, no operational impacts, 10% increase of burst strength over OCC</td>
<td>Good fiber Increased pulping time, decreased yield, increased rejects, increased energy per ton</td>
<td>Excellent fiber separation, Sheer blade cut PE into small pieces which clogged extractor plate</td>
</tr>
</tbody>
</table>
Mill Results & Next Steps

- Mills that tested the material felt the material tested was not a good fit for their mills.
- To our knowledge, a mill with a high consistency or drum pulper has not yet conducted a mill test. Better understanding of prevalence of pulper types is needed.
- Deinked pulp mills currently recycling post-consumer coffee cups
- Tissue mills process cup stock cut waste and have strong interest in post-consumer material
Collection & Logistics Considerations

- Collection & processing with OCC is preferred method for in-store pick-up
- Other processing methods may be preferred for residential and public space
Food Residuals & Microbials
Are New Grades Needed or Do Existing Definitions Need to be Expanded?
Thank You!

For more information:
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