

**EBJ REPORT 215**

# **Solid Waste Management, Resource Recovery & Waste Management Equipment**

**Overview of Markets and Competition**

**November 2010**

# Report 215 - Solid Waste Management and Resource Recovery

## Table of Contents

<b>1.</b>	<b>Solid Waste Management .....</b>	<b>2-6</b>
1.1.	Recent Activities.....	2-6
1.1.1.	2008 Update.....	2-15
1.1.2.	2006 Update.....	2-20
1.1.3.	Waste Generation and Disposal in 2001 .....	2-23
1.2.	Solid Waste Management Markets.....	2-25
1.3.	Collection Markets .....	2-28
1.4.	Processing Markets .....	2-31
1.5.	Disposal Markets.....	2-32
1.6.	Geographic Distribution of Solid Waste Management Markets .....	2-39
1.7.	Other Solid Waste Management Segments .....	2-47
1.7.1.	Recycling.....	2-47
1.7.2.	Landfill Gas.....	2-50
1.7.3.	Composting .....	2-50
1.8.	Competition in Solid Waste Management.....	2-52
1.8.1.	Top Solid Waste Management Companies .....	2-54
1.8.2.	Veolia Environmental Services: Innovations in Waste-to-Resource .....	2-61
1.8.3.	Morgan Joseph .....	2-64
1.8.4.	Leading Firms in Waste to Energy .....	2-68
1.8.5.	Biomass on the Frontier .....	2-69
1.8.6.	Municipal Solid Waste Authorities .....	2-75
	Source Separation Of Organics Advances Slowly .....	2-75
	Compostable Organics out of Landfills by 2012; COOL 2012 .....	2-84
1.9.	Strategies for Success.....	2-86
1.9.1.	Casella Waste .....	2-87
<b>2.</b>	<b>Resource Recovery.....</b>	<b>2-91</b>
2.1.	Resource Recovery Market .....	2-91
2.1.1.	2010 Trend Review .....	2-94
2.1.2.	2008 Trend Review .....	2-104
2.1.3.	2006 Trend Review .....	2-108
2.1.4.	2004 Trend Review .....	2-112
2.1.5.	2002 Trend Review .....	2-121
2.2.	Niche Markets .....	2-125
2.2.1.	Photo Waste Recycling .....	2-125
2.3.	E-Waste.....	2-129
2.3.1.	Responsible Management .....	2-130
2.3.2.	Lamp Recycling .....	2-138
2.4.	Paper Recycling.....	2-141
2.5.	Plastics Recycling .....	2-143
2.6.	Aluminum Recycling.....	2-147
2.7.	Steel Recycling.....	2-151
2.8.	Glass Recycling.....	2-153
2.9.	Tires.....	2-153
2.10.	Construction & Demolition Recycling .....	2-154
<b>3.</b>	<b>Waste Management Equipment.....</b>	<b>3-157</b>

3.1.	Waste Management Equipment Market .....	3-157
3.1.1.	2008 Update.....	3-160
3.1.2.	2006 Update.....	3-163
3.1.3.	2004 Trend Review .....	3-164
3.1.4.	2003 Trend Review .....	3-166
3.2.	WME Company Profiles.....	3-168
3.2.1.	Compaction America.....	3-168
3.2.2.	Heil Environmental Industries .....	3-170
3.2.3.	Morbark Inc. ....	3-173
3.2.4.	Rehrig Pacific Company .....	3-176
3.2.5.	Leach Company.....	3-178
3.2.6.	Wastequip .....	3-181
3.3.	Leading Companies in Waste Management Equipment .....	3-184
3.3.1.	Selected Companies in Waste Containers .....	3-184
3.3.2.	Selected Companies in Liners .....	3-184
3.3.3.	Selected Companies in Recycling Equipment .....	3-185
3.3.4.	Companies in Waste Vehicles and Bodies.....	3-186

### List of Exhibits

Exhibit 1-1	Size of the Solid Waste Market by Business Type, 2007 .....	2-6
Exhibit 1-2	Size of the Solid Waste Market by Business Type, 2004 .....	2-7
Exhibit 1-3	Size of the Solid Waste Market by Business Type, 2001 .....	2-7
Exhibit 1-4	Size of the Solid Waste Market by Industry Segment, 2007-2009.....	2-8
Exhibit 1-5	Size of the Solid Waste Market by Industry Segment, 2004 .....	2-9
Exhibit 1-6	Size of the Solid Waste Market by Industry Segment, 2001 .....	2-10
Exhibit 1-7	Structure of the U.S. Solid Waste Industry: 2006.....	2-12
Exhibit 1-8	Structure of the U.S. Solid Waste Industry: 2009.....	2-12
Exhibit 1-9	Existing and Projected Solid Waste Market by Participant (in Billions \$).....	2-13
Exhibit 1-10	Solid Waste Market Volume in 2007 .....	2-16
Exhibit 1-11	Trends in Waste Generation & Disposal in the U.S., 2000 - 2001 .....	2-24
Exhibit 1-12	Number of Operating Waste Disposal Operations, 2001.....	2-24
Exhibit 1-13	Volumes, Average Prices & Revenues from Landfilling MSW, 2001 & 2000 .....	2-24
Exhibit 1-14	2000 to 2001 Materials Recovery Volumes .....	2-25
Exhibit 1-15	Disposition of Municipal Solid Waste 1989-1998 .....	2-25
Exhibit 1-16	Size of the Solid Waste Market by Industry Segment, 2007 .....	2-26
Exhibit 1-17	Size of the Solid Waste Market by Industry Segment, 2004 .....	2-26
Exhibit 1-18	Historical and Projected Growth in Solid Waste Management .....	2-27
Exhibit 1-19	Solid Waste Collection Markets, 2007 .....	2-28
Exhibit 1-20	Solid Waste Collection Markets, 2006 .....	2-29
Exhibit 1-21	Solid Waste Collection Markets, 2005 .....	2-29
Exhibit 1-22	Solid Waste Collection Markets, 2004 .....	2-30
Exhibit 1-23	Solid Waste Collection Markets, 2001 .....	2-30
Exhibit 1-24	Growth in the Number of U.S. Recycling Facilities and Programs .....	2-32
Exhibit 1-25	Number of Landfills by Region and Ownership, 2001 .....	2-33
Exhibit 1-26	Number of Landfills by Region and Ownership, 1991.....	2-33
Exhibit 1-27	Average Landfill Monthly Tipping Fees by Region 2007-2008 .....	2-34
Exhibit 1-28	Waste Disposal Pricing by Type of Facility, State, and Region, 2008 .....	2-34
Exhibit 1-29	Forecast of U.S. Solid waste Industry: Average Tip Fees: 2003 - 2010.....	2-36
Exhibit 1-30	Average Tip Fees for MSW Charged by Landfills by Region and Ownership, 2001 (in \$/Ton) .....	2-36
Exhibit 1-31	Average Tip Fees for MSW, 1991 (in \$/Ton) .....	2-36
Exhibit 1-32	Number of Landfills in the United States (1989-2004) .....	2-37
Exhibit 1-33	Number of Incinerators in the United States (1989-96).....	2-37

Exhibit 1-34	Average landfill tonnage and price per day in SW collection/processing 2007-2008.....	2-40
Exhibit 1-35	Waste Disposal Volumes by Type of Facility, State, and Region, 2008.....	2-41
Exhibit 1-36	Trends in Waste Generation & Disposal by State, 2000 - 2001 (in Millions of tons) .....	2-43
Exhibit 1-37	Number of Operating Waste Disposal Operations by State in 2001.....	2-44
Exhibit 1-38	Volumes, Average Prices & Revenues from Landfilling MSW by State, 2001 & 2000 .....	2-45
Exhibit 1-39	Year-to-Year Materials Recovery Volumes by State (in Millions of Tons) .....	2-46
Exhibit 1-40	Forecast of U.S. Solid Waste Industry: Shares by Company Type: 2003-2012.....	2-52
Exhibit 1-41	Forecast of U.S. Solid Waste Industry: Shares by Company Type: 2003-2010 .....	2-52
Exhibit 1-42	Market Share in Solid Waste Management by Competitor Type, 1999 - 2008.....	2-53
Exhibit 1-43	Shares of U.S. Solid Waste Industry: 2005 .....	2-54
Exhibit 1-44	Top 75 Firms in the Solid Waste Industry: 2007 .....	2-54
Exhibit 1-44	Top Firms in the Solid Waste Industry: 2004-2009.....	2-56
Exhibit 1-45	Top 75 Firms in the U.S. Solid Waste Industry: 2005 .....	2-57
Exhibit 1-46	Leading Companies in Solid Waste Management, 2004.....	2-59
Exhibit 1-47	Leading Companies in Solid Waste Management, 2001.....	2-60
Exhibit 1-48	Distribution of Revenues in U.S. Solid Waste Industry, 2006.....	2-60
Exhibit 1-49	Distribution of Revenues in U.S. Solid Waste Industry, 2001 .....	2-61
Exhibit 1-50	Largest Waste-to-Energy Companies Ranked by Total Capacity .....	2-69
Exhibit 2-1	Historical and Projected Growth in Resource Recovery .....	2-92
Exhibit 2-2	Sales of Recovered Materials in/from the U.S., 1995-2005 (\$bil) .....	2-93
Exhibit 2-3	Sales of Recovered Materials in/from the U.S., 2005-2009 (\$bil) .....	2-93
Exhibit 2-4	Exports of Recovered Materials from the U.S., 1995-2005 (\$bil).....	2-93
Exhibit 2-5	Sales of Recovered Materials in the U.S., 2004 (\$bil ) .....	2-94
Exhibit 2-6	Sales of Recovered Materials in the U.S., 2007 (\$bil) .....	2-94
Exhibit 2-7	Waste Paper - Exports and Domestic, 1994-2004 .....	2-142
Exhibit 2-8	Waste Paper - Exports and Domestic, 2005-2007 .....	2-143
Exhibit 2-9	Plastic - Exports and Domestic, 1994-2004.....	2-145
Exhibit 2-10	Plastic - Exports and Domestic, 2005-2007 .....	2-146
Exhibit 2-11	Aluminum Cans- Exports and Domestic, 1994 - 2004.....	2-148
Exhibit 2-12	Aluminum Cans- Exports and Domestic, 2005-2007 .....	2-149
Exhibit 2-13	Aluminum Scrap - Exports and Domestic, 1994-2004.....	2-150
Exhibit 2-14	Aluminum Scrap - Exports and Domestic, 2005-2007.....	2-151
Exhibit 2-15	Steel/Ferrous Scrap - Domestic and Exports 1994 - 2004.....	2-152
Exhibit 2-16	Steel/Ferrous Scrap - Domestic and Exports 2005-2007.....	2-153
Exhibit 2-17	Leading Companies in Recycling .....	2-156
Exhibit 3-1	Waste Management Equipment Market by Equipment Type 2000-2009.....	3-157
Exhibit 3-2	Waste Management Equipment Market by Major Equipment Category 2003-2009 .....	3-158
Exhibit 3-3	Waste Management Equipment Breakdown: 2003 - 2009 .....	3-159
Exhibit 3-4	Historical Sales of Waste Management Equipment, 1991-2001 .....	3-160
Exhibit 3-5	Growth in Waste Management Equipment 1988-2007 .....	3-161