

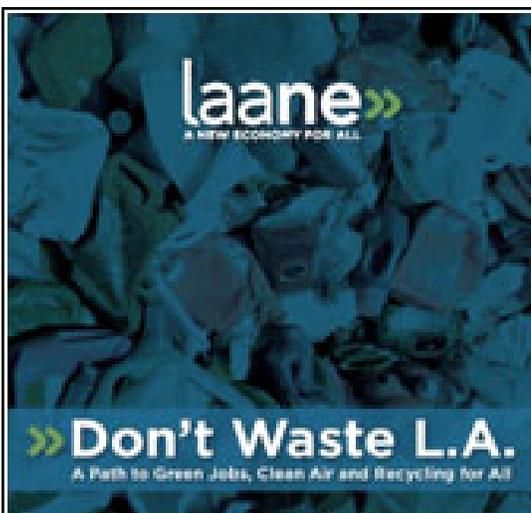
Beyond Waste

Regulatory Report from Edgar & Associates, Inc.
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As the economy is grinding its way back from the Great Recession with real job creation, the China bubble is getting ready to burst, which could force us to recycle like it was 2008, with our bales stacked up at the docks. Millions of Chinese lost their jobs back then as the world's largest importer of waste was hit hard by the collapse in demand for packaging and raw materials. The pricing of commodities nosedived and there was no "bale out" for the recycling industry, other than long term storage and a climb back, led by China demand. California still exports 80% to 95% of our paper, plastic, and metal bales to the Pacific Rim; many more bales are on the way with the passage of AB 341 (Chesbro, 2011). AB 341 will mandate commercial recycling starting in July 2012 and increases the statewide recycling goal to 75% by 2020. The success of AB 939 can be attributed to the global economy, where the success of AB 341 will be dependent on growing the domestic market.

California has long been a national and international leader in environmental stewardship efforts, with bold environmental programs that have moved **Beyond Waste** since AB 939 was passed in 1989. The disposal of recyclable materials in the solid waste stream prevents materials from circulating in the state economy to produce jobs and new products. By requiring recycling, the state has reclaimed valuable resources while reducing the disposal of these materials and avoiding greenhouse gas emissions. By continuing the leadership role with AB 341, California will lead the underserved business community toward a future in which the ecology and the economy are one, and grow stronger together by recycling materials, which creates new jobs, instead of burying resources, which exit the economy forever. Ecos is the Greek word meaning "home" and is the root of ecology and economy, where a clean house equals good business.



Eco-Labor Alliances: A Los Angeles coalition of environmental, labor, community and faith-based organizations working for clean air, green jobs and recycling for all Angelenos released a Report in early 2011, "*Don't Waste L.A. – A Path to Green Jobs, Clean Air and Recycling for All*," prepared by LAANE – Los Angeles Alliance for a New Economy. LAANE claims that few industries have a greater impact on Los Angeles' neighborhoods, residents, workers and environment than the waste and recycling industry. *Don't Waste L.A.* states that smart, urgent policy solutions, coupled with broad-based community engagement, will not only limit impacts but ensure that the region could emerge as a national model for efficient, effective and safe recycling and waste management. AB 341 provides L.A. the pathway and the tools to get to 75% by 2020 with mandated commercial recycling. With Puente Hills landfill closing in less than 2

years, and with an open collection system, *Don't Waste L.A.* wants to enfranchise the City to standardize and increase recycling, while creating green, higher paying union jobs.



More Jobs, Less Pollution: AB 341 has a statewide goal of recycling 75% by 2020 with legislative intent to create jobs, expanding the opportunity for additional recycling services and recycling manufacturing facilities. The Edgar Institute has forecasted the creation of over 40,000 new recycling jobs above baseline with AB 341. The Tellus Institute has determined that by recycling 75% of the nation's waste, nearly 1,500,000 new jobs will be created above baseline by 2030. Recycling, furthermore, significantly re-

duces pollution, saves water and energy, and builds economically strong and healthy communities, according to a study sanctioned by leading labor and environmental groups. Following the *Don't Waste L.A.* eco-labor coalition "*More Jobs, Less Pollution: Growing the Recycling Economy in the United States*" was prepared for the BlueGreen Alliance, Natural Resources Defense Council, International Brotherhood of Teamsters, Service Employees International Union, Recycling Works! and the Global Alliance for Incinerator Alternatives (GAIA.) Organized labor and environmentalists have formed this alliance to encourage policy makers at all levels of government by informing them about what they can do to create a more robust recycling system for our planet and our economy, and that recycling holds great potential to heal the planet in an ecologically and economically productive way with good union jobs.

The vast majority of America's trash can be readily recycled or composted. Unfortunately, most of the nation's waste is still being sent to landfills or incinerators - Only 33% is currently diverted from disposal. The State of California, however, has nearly doubled that rate to 64%. By implementing a bold national recycling and composting strategy of a 75% waste diversion rate by 2030 - following the lead of California with AB 341 - the report shows that Americans can also create much needed local green jobs, up to 1.5 million new jobs above an assumed baseline (where 33% recycling would be expected normally to increase to 41% by 2030); this new job creation was calculated from the adjusted baseline of 41% recycling expanding to 75% recycling by 2030.



The Institute for Local Self Reliance developed a set of job production estimates for 11 recycling and processing business categories that were used in the report as highlighted below, where so many jobs are created for each 1,000 tons of material type handled for collection, processing, manufacturing, landfilling, and incinerating. For every ton landfilled or burned, there are 20 new jobs created by recycling, or 5 new jobs by composting, and manufacturing can add between 30 to 100 new jobs for each ton diverted, as summarized in the table on the next page.

California was able to recycle its growth from 1993 to 2006, where the per capita disposal rate remained relatively constant at 6.2 pounds per person per day. Assuming that California will continue to recycle its growth, as a baseline assumption from 2010 to 2020, our state will need to divert an additional 6.8 million tons from landfilling by 2020, to reduce landfill disposal from 30.4 million tons to just 23.6 million tons by 2020. According to The Edgar Institute, this decrease in waste disposal will result in 3.1 pounds per person per day for California, for a 75% landfill diversion rate equivalency by 2020. CalRecycle plans to hold workshops in early 2012 to forecast the material types and amounts that can be diverted to achieve a 75% rate by 2020, and what programs and policies need to occur for California to meet the 75% goal.

The CalRecycle report is due to the Legislature by January 1, 2014. Meanwhile, the following projects will be used to determine job creation.

Material Type	DIVERTED WASTE				DISPOSED WASTE		
	Collection	Processing	Manufacturing	Reuse	Collection	Landfill	Incineration
	Jobs per 1,000 tons handled				Jobs per 1,000 tons handled		
Paper			4.16	N/A			
Glass			7.85	7.35			
Ferrous			4.12	20.00			
Aluminum	1.67	2.0	17.63	20.00	0.56	0.10	0.10
Plastics	per	per	10.30	20.00	per	per	per
Rubber	1,000	1,000	9.24	7.35	1,000	1,000	1,000
Textiles	tons	tons	2.50	7.35	tons	tons	tons
Wood			2.80	2.80			
Food		0.50	0.50	N/A			
Yard			0.50	N/A			

Recycling policies to-date have helped to create over 125,000 jobs in the state, according to recent reports. Staying the course and recycling our growth as baseline, and then increasing the diversion rate from the current 64% to 75%, will add over 40,000 new jobs, as highlighted in the table below. By diverting 75% of the nation’s waste, the country would reduce greenhouse gas emissions by 276 million metric tons by 2030, or the equivalent of eliminating emissions from 72 coal-fired power plants or taking 50 million cars off the road. By diverting 75% of California waste, greenhouse gas emissions would be reduced by 18 million metric tons by 2030.

Material Type	Diverted Tons	Avoided Greenhouse Gases (MMTCO ₂ e)	New Jobs Created
Commerical Recycling	1,500,000 tons	5.0 MMTCO ₂ e	13,000
Anaerobic Digestion	3,500,000 tons	2.9 MMTCO ₂ e	7,500
Compost Use	1,000,000 tons	0.7 MMTCO ₂ e	2,170
Lumber to Energy	2,200,000 tons	0.5 MMTCO ₂ e	14,200
Carpet Recycling	600,000 tons	2.8 MMTCO ₂ e	4,000
Grand Total	8,800,000 tons 6.8 million tons not counting ADC	18 MMTCO ₂ e	40,870 new jobs

COMMERCIAL RECYCLING – 1.5 million tons of traditional recyclables. CalRecycle, with HF&H Consultants, prepared a study to determine the tonnage and costs to reduce 5 million metric tons of carbon dioxide equivalents (MMTCO₂e) by 2020. With 1.67 collection jobs, 2.00 processing jobs and an average of 5.00 manufacturing jobs per 1,000 tons, the 1.5 million tons may result in over 13,000 new jobs.

ANAEROBIC DIGESTION – 1.5 million tons of Food Waste and 2.0 million tons of Green Waste: CalRecycle released the Final Program EIR for Anaerobic Digestion (AD) Facilities, where it assumed that there will need to be 70 AD facilities processing 50,000 tons (or 200 tons per day) of solid waste by 2020 to achieve state goals, which would divert about 3.5 million tons per year of organic material and avoid 2 MMTCO₂e of GHGs. Assuming a ratio of 40% food waste to 60% green waste in a dry fermentation process, 1.5 million tons of food waste would be recovered in 2020. Just one-third of the food waste disposed of in 2010 would need to be diverted over the next 10 years. From ADC to AD, about 2 million tons of green waste ADC that does not count as disposal in 2010 could be re-directed to AD to bulk up the food waste.

With 1.67 collection jobs, and 0.50 processing jobs per 1,000 tons, the 3.5 million tons may result in over 7,500 new jobs.

COMPOST USE – 1.0 million tons of Green Waste: CalRecycle released the Organic Road Map, where it assumed that there will need to be 28 more composting facilities processing 500 tons per day. About 3.65 million tons per year of organics would need to be composted by 2020 to achieve strategic goals. A conservative one million tons, or about one-half of the green waste disposed of in 2010, not counting green waste ADC, would need to be composted over the next 10 years. With 1.67 collection jobs, and 0.5 processing jobs per 1,000 tons, the 1.0 million tons may result in over 2,170 new jobs.

LUMBER TO RENEWABLE ENERGY – 2.2 million tons of Wood Chips: The BioEnergy Action Plan, coupled with new laws to accelerate the Renewable Energy Standard (RES) from 20% to 33% renewable by 2020, plans to bring 1,500 MW of green power from biomass by 2020. The potential new market could divert all of the estimated 4.4 million tons of lumber that was disposed of in 2010. Assuming a modest 50% recovery rate of what is still being disposed, 2.2 million tons of wood chips could be diverted. With 1.67 collection jobs, 2.0 processing jobs and 2.8 manufacturing jobs per 1,000 tons, the 2.2 million tons may result in over 14,200 new jobs.

CARPET RECYCLING – 0.6 million tons: AB 2398 (Perez, 2010) was the first extended producer responsibility (EPR) bill in the nation. Recycling just 50% of the carpet that was disposed in 2010 (or about 600,000 tons), the amount of GHGs avoided could be 2.8 million metric tons. With 1.67 collection jobs, 2.0 processing jobs and 2.5 manufacturing jobs per 1,000 tons, the 600,000 tons may result in almost 4,000 new jobs.



The legislative intent of AB 341 was to create jobs by expanding the opportunity for additional recycling services and recycling manufacturing facilities with the supply of more recycling feedstock from mandated commercial recycling. Under the leadership of the Greater Stockton Chamber of Commerce, the Recycling Build Infrastructure Now (BIN) Coalition has been created to develop legislative concepts for 2012. A BIN White Paper has been published with a series of recommendations and ideas to retain the recycled feedstock and create domestic jobs. As China bubbles along and accommodates our bales, California needs to be poised to grow our economy and create over 40,000 new jobs, while significantly reducing greenhouse gases.