

Waste Management Sector Implementation Plan September 17, 2013

ARB and CalRecycle developed this Implementation Plan based on the tasks identified in the technical papers: Recycling, Reuse, and Remanufacturing; Composting and Anaerobic Digestion; Biomass Conversion; Municipal Solid Waste Thermal Technologies; Landfilling of Waste; and State Procurement. The Implementation Plan serves as a working model to address the issues and activities associated with achieving the AB 32 GHG emissions and AB 341 waste reduction goals. This dynamic plan is a tabulated account of the types of actions and the estimated timeframe for completing these actions. This plan outlines an initial set of potential actions needed to meet GHG and waste reduction goals. It is a working document that will undergo subsequent revisions based on the continued inter-agency, stakeholder, and public collaboration.

Category/Task	Actions	Timeframe
1. Emission Reduction Factors	a. Revise compost emission reduction factors to include avoided landfill emissions	Short term/in progress by late 2013
	b. Develop new emission reduction factors for aerobic and anaerobic digestion	Short term/in progress by late 2013, ongoing element
	c. Develop emission reduction factors for materials that can be recycled (carpet, paint)	Short term/mid-2014
	d. Update emission reduction factors for landfills, including avoided methane emissions for organics that are shifted to non-landfill alternatives	Short term/mid-2014
	e. Consider any additional quantifiable data on end use of exported recyclables and incorporate into future new and updates of the emission reduction factors as needed	Short term/2014-2020, ongoing element
2. Permitting	a. Work with U.S. EPA, other agencies, districts, and jurisdictions to address conflicting or redundant requirements, including cross media and multi-jurisdictional issues	Short term/mid-2014, ongoing element
	b. Streamline permitting process for new and upgraded facilities – develop programmatic EIRs and/or model permit and guidance documents to assist in environmental review and CEQA	Short term/mid-2015
	c. Develop industry specific web-based tools for planning and permitting guidance	Short term/mid-2015, ongoing element
	d. Investigate facilitating permits for co-location of organics processing at existing POTWs and for post closure land use at landfills	Short term/mid-2015, ongoing element

3. Funding & Incentives for Infrastructure	a) Provide funding for facility improvement to meet air, water, and EJ goals to develop sustainable low-carbon waste management systems to handle waste shifted from landfills to compost, anaerobic digestion, biomass and other technologies	Short term/2013-2020, ongoing element
	b) Establish feed-in-tariffs for electricity production to make instate renewable energy production more competitive	Short term/2013-2020
	c) Increase AB 118 funding for anaerobic digestion projects and support re-authorization of AB 118	Short term/2014-2015
	d) Continue to provide regulatory certainty that fuel produced from anaerobic digestion of organic waste can qualify for Low Carbon Fuel Credits. Continue pursuing pathways for Low Carbon Fuel Credits for anaerobic digestion	Short term/2013-2015
	e) Pursue expanded sustainable financing for infrastructure development for recycling, composting, anaerobic digestion, and biomass projects: <ul style="list-style-type: none"> • Expand RMDZ program • Obtain GoBiz support and expand technical support • Determine which, if any, offset project protocols are viable for recycling, composting, anaerobic digestion or other bioenergy processes • Establish remanufacturing incentive payments, grant programs, or product stewardship programs for management of high-GHG commodities 	Short term/2014-2015, ongoing element
	f) Obtain Cap & Trade funding or other funding sources for incentive, grant, and loan programs for compost and anaerobic digestion projects, recycling and remanufacturing facilities, and other projects that reduce waste to landfills	Short term/2013-2020
	g) Establish new incentive programs geared for biomass conversion projects, including gasification projects, possibly through Cap-and-Trade revenues	Short term/2014-2020
	h) Ensure EPIC fund is devoted to new bioenergy facilities. Explore tax credits	Short term/2014-2020
	i) Investigate the costs associated with interconnection to the transmission grid from biomass conversion projects	Short term/2014-2020
	j) Identify landfills close to pipelines and evaluate economic feasibility of biogas injection	Short term/2014-2015
	k) Monitor the Renewable Market Adjusting Tariff to assess whether it incentivizes new bioenergy projects	Short term/2015-2020
	l) Investigate the feasibility of criteria pollutant offset banks for new composting & AD facilities and the generation of offsets by upgrading existing facilities to reduce emissions	Short term/2015-2020
	m) Evaluate whether to allow all municipal solid waste thermal technologies (MSW Thermal) to generate renewable energy and receive credits	Short term/2014-2015

4. Public Education/Acceptance	a. Initiate public education campaign addressing: goals of waste sector, benefits of recycling/remanufacture, collection of cleaner recyclable commodities, need for contamination-free feedstocks, reducing carbon footprint through increased recycling	Short term/2013-2020
	b. Educate project developers about next generation organic processing facilities that minimize odors and emissions and can be sited closer to urban centers	Short term/2013-2020
	c. Foster State, local, and private cooperation in achieving Waste Sector Goals	Long term/ongoing through 2035
	d. Evaluate effectiveness of education programs and modify as needed	Long term/2015-2050
5. Markets/Quality of Products	a. Maximize recovery potential by establishing grants and /or performance standards for MRFs and C&D facilities to recover higher-quality commodities	Short term/2013-2020
	b. Support development of advanced processes and/or equipment that enables cost effective removal of contaminants from the organics waste stream, particularly glass and plastic	Short term/2013-2020
	c. Investigate the feasibility and impact of not allowing the use of green waste Alternative Daily Cover (ADC) to count as recycling	Short term/2013-2020
	d. Consider mandatory organic waste recycling for large commercial generators	Short term/2013-2020
	e. Increase markets for anaerobic digestion and compost products by investigating potential financial incentives for increased usage of compost and anaerobic digestion products	Long term/2013-2035
	f. Work with industry to standardize quality specifications for products from composting and anaerobic digestion	Long term/ongoing through 2025
	g. Incorporate recycling and recyclability as front end design parameter for packaging and products	Long term/ongoing through 2035
	h. Identify and support markets for recycled, reused, and remanufactured materials	Long term/ongoing through 2035
	i. Work with stakeholders to promote the sorting of urban organics	Short term/2013-2020
	j. Complete updates to CalRecycle regulations for composting and anaerobic digestion of food materials and other highly putrescible wastes	Short term/2013-2020
	k. Reform SABRC statutes for State procurement (include more products with recycling or GHG implications; revise minimum percentages; include Community Colleges and University of California; require State contractors to meet same purchasing requirements as State agencies; establish enforcement mechanism for non-compliance)	Short term/2013-2020
	l. Provide education on State procurement requirements to all State agency purchasing officials and all staff within agencies that purchase materials	Short term/2013-2020
	m. Create system to verify PCRC of products, identify suppliers of PCRC products, and track State procurement ; require manufacturers and suppliers to disclose product environmental information	Short term/2013-2020

6. Sustainability	a. To protect recycling, composting, and AD programs, establish front-end processing standards for waste sent to MSW-thermal plants	Short term/2013-2020
	b. Maximize recycling of packaging materials	Long term/2014-2035
	c. Evaluate opportunities to reuse materials	Long term/ongoing through 2035
	d. Develop new product stewardship programs (See 3e above)	Long term/ongoing through 2035
7. Research		
a. Improve characterization of direct and avoided GHG emissions from composting and anaerobic digestion and from compost use	Short term/late 2013-2014	
b. Characterize properties of digestate from anaerobic systems and determine the suitability for uses	Long term/2020-2025	
c. Support research and development projects demonstrating newest best management practices for composting and anaerobic digestion	Long term/2015-2025	
d. Pursue research into development and commercialization of emerging biomass conversion and thermal technologies	Long term/ongoing through 2025	
e. Conduct additional research for safe and beneficial uses of MSW and biomass conversion ash	Long term/2025	
f. Investigate carbon sequestration and water savings potential of compost use in agricultural settings such as irrigated croplands and rangelands	Long term/2025	
g. Conduct research to improve understanding of landfill gas collection efficiencies	Long term/ongoing through 2025	
h. Conduct statewide characterization of landfill methane emissions and criteria pollutants by best available direct measurement methods and validation of inventory models	Long term/ongoing through 2025	
i. Support research and demonstration projects for methane capture equipment and technology to convert it to commercial LNG	Long term/ongoing through 2025	
8. Cap and Trade		
a. Consider use of Cap and Trade auction funds for infrastructure development	Short term/late 2013/early 2014	
b. Review benchmarks for capped recycling and remanufacturing facilities	Short term/late 2013/early 2014	
c. Determine status of MSW-Thermal facilities in Cap-and-Trade	Short term/late 2015	
d. Review landfills for inclusion in Cap-and-Trade	Short term/late 2014	
9. Regulatory/Statutory		
a. Consider regulatory or statutory actions requiring phasing organics out of landfills and moving toward inert only landfilling practices	Short term/ongoing through 2020	
b. Investigate regulatory actions to further reduce GHG emissions at landfills such as incorporating BMPs and establishing lower methane emissions standards	Short term/ongoing through 2020	
c. Monitor and participate in potential regulatory changes that could address the cost, timelines, and other hurdles to interconnecting to the electricity grid	Short term/ongoing through 2020	

