



Waste Management Sector Plan

September 17, 2013

California Environmental Protection Agency
 **Air Resources Board**

CalRecycle 

1



Remote participants:

During workshop, e-mail comments to
climatechange@calrecycle.ca.gov



Workshop Agenda

- Introductions
- Background
- Waste Management Sector Plan
- Major Themes from Stakeholder Comments
- Implementation Plan
- State Procurement Paper
- Public Comments
- Next Steps



Connections to AB 341

- AB 341 mandates 75% recycling goal = reduced disposal & GHGs
- 22 million tons from disposal; 20 – 30 MMTCO_{2e}
- Waste Management Sector Plan identifies activities to help achieve 75%
- AB 341 Process
 - ✓ *May 2012 Report*
 - ✓ *15 workshops*
 - ✓ *Fall 2013 Interim Report*
 - ✓ *January 2014 Report to Legislature*

Connections to AB 32

- AB 32 requires Scoping Plan update in 2013
- Waste Management Sector Plan identifies activities to achieve significant GHG reductions
- 2013 Scoping Plan Update Process
 - ✓ *June: Kickoff Public Workshop*
 - ✓ *June-August: 4 Regional Public Workshops; 2 Environmental Justice Committee Workshops*
 - ✓ *ARB looking to release discussion draft in a few weeks*
 - ✓ *October: ARB Board hears update to Scoping Plan*
 - ✓ *December: ARB Board hearing*
 - ✓ *ARB-CalRecycle Joint Working Group continues working on activities in Implementation Plan*

Waste Management Sector Plan - Process

- Joint Working Group – ARB and CalRecycle
- June: Released Draft Documents
 - ✓ *Overview, Technical Papers, Implementation Plan*
- June 18: Stakeholder Workshop
- Stakeholder Comment Letters
- September: Released Revised Documents
- September 17: Stakeholder Workshop
- Incorporate into 2013 Scoping Plan Update and AB 341 Legislative Report

Waste Management Sector Plan – Overall Goals

- Take ownership of waste
- Maximize recycling and diversion
- Finance and build sustainable infrastructure
- Reduce waste
- 2035: Net-Zero (direct GHG – avoided GHG = 0)
 - ✓ Pre-2020 efforts can achieve significant GHG reductions
 - ✓ Will strongly influence post-2020 actions
- 2050: Reduce direct emissions by 25%

Waste Management Sector Plan

- Overview
- Technical Papers
 - ✓ *Recycling, Reuse, and Remanufacturing*
 - ✓ *Composting and Anaerobic Digestion*
 - ✓ *State Procurement*
 - ✓ *Biomass Conversion*
 - ✓ *Municipal Solid Waste Thermal Technologies*
 - ✓ *Landfilling of Waste*
- Implementation Plan



Stakeholder Comments on Draft Waste Management Sector Plan

Complete comment letters posted at
<http://www.calrecycle.ca.gov/climate/sectorplan/>



Stakeholder Comments

ERFs, Protocols, LCAs (Emission Reduction Factors)

- Include avoided landfill emissions in ERFs
- Adopt offset protocols
- Conduct LCA to quantify baseline GHG emissions
- Landfill gas to energy projects are undervalued
- Landfill emissions are over/under estimated
- Don't credit waste sector w/ GHG reductions from transportation and manufacturing sectors
- Consider GHG reductions from using post-recycled waste materials for fuel & energy production



Stakeholder Comments

Permitting

- Complicated, burdensome, long and expensive
- Develop roadmap that identifies specific barriers and timeline/process to overcome
- Develop model permits, programmatic EIRs, and increase agency interaction
- Work with POTWs to better utilize existing infrastructure for AD
- Permitting is disincentive to innovation



Stakeholder Comments

Funding/Incentives for Infrastructure

- Need incentive & grant programs
- Increase fees on disposal to level playing field
- Mandate recycling to facilitate infrastructure financing
- Provide up-front financing to cover gap until LCF credits are generated
- Incentivize reduction in use of green material ADC



Stakeholder Comments

Funding/Incentives for Infrastructure – cont'd

- Support new food waste infrastructure
- Develop business-friendly regulatory environment rather than subsidizing unviable businesses
- Expand RMDZ program statewide
- Create revolving loan fund to reduce capital costs
- Power Purchase Agreements that adjust based on costs
- Do/Don't incentivize MSW-TT or landfill gas projects



Stakeholder Comments

Public Education/Acceptance

- Increase funding for recycling education
- Promote participation in community curbside and drop-off recycling programs
- Facilitate industry, local government, State collaboration
- Support local public relations efforts
- Develop community based social marketing programs to promote source reduction



Stakeholder Comments

Markets/Product Quality

- Utilize existing infrastructure at POTWs for AD
- Develop plan to overcome impact of China's Green Fence
- Support/Oppose state procurement mandates
- Need EPR Framework/EPR will harm existing markets
- Develop new markets for compost, including rangelands



Stakeholder Comments

Sustainability

- Rename the Waste Sector
- Plan should account for local constraints
- Composting policies need to address public health, safety & environmental issues
- Don't prioritize community over utility scale biomass projects
- Reduce food waste and improve landscape design
- Develop statewide transport packaging program



Stakeholder Comments

Sustainability – cont'd

- Prioritize energy recovery – it complements recycling
- Producer responsibility for “hard to recycle” products
- Implement formula of 50% recycling, 30% AD, and 20% gasification to achieve zero waste
- Actions in plan are focused on composting & AD but should be technology neutral



Stakeholder Comments

Research

- Complete it all in the near term
- Compost - H₂O savings, emissions, odor, erosion, crop yields
- Improve measurement of landfill emissions
- Conduct LCA (environmental & economic) on Waste Sector Plan – consumption-based inventory
- New air pollution control technologies
- Study beneficial reuse options for ash



Stakeholder Comments

Cap and Trade

- Exclude/Include Landfills & MSW-TT
- Identify manufacturing specific strategies to increase use of recycled feedstock in California
- Use auction \$ to fund infrastructure
- Use auction \$ to support feedstock collection/transport to existing biomass facilities
- Develop offset protocols for rangelands, compost, AD, Biomass, MSW-TT, & landfills



Stakeholder Comments

Regulatory/Statutory

- “Disposal-related” tonnages should/should not count in recycling calculations
- For/against landfill regulations – organics & ADC phase-out or ban, more stringent limits on methane emissions
- EPR for products with large GHG footprint
- Revise statutory definition of gasification
- Allow full implementation of MCR prior to taking additional steps to achieve 75% recycling

Stakeholder Comments

Regulatory/Statutory – cont'd

- Require commercial organics recycling
- Mandate source separated food waste collection
- Support use of MRF fines and inerts for ADC
- RPS credit for biogenic portion of MSW-TT feedstock
- Do/don't provide RPS & diversion credit for MSW-TT
- MSW-TT to transportation fuels should = recycling

Stakeholder Comments

Regulatory/Statutory – cont'd

- AB1900 – treat biomethane same as natural gas
- Ensure CPUC interconnection rule supports biomass
- CPUC - level playing field between biomass, solar, wind
- Include compensation for biomass fuel GHG offsets in new PPAs
- Make biomass conversion definition technology neutral
- Include near-term measures to go beyond 33% RPS



Implementation Plan

- Developed based on technical papers & stakeholder input
- Working model to address issues and activities
- Outlines initial set of potential actions needed to meet GHG and waste reduction goals
- Includes estimated timeframe for completing actions
- Dynamic working document, will undergo revision based on continued collaboration



Implementation Plan

1. Emission Reduction Factors (ERF)

Short Term Considerations:

- Revise compost ERF to include landfill emissions
- Develop new ERF for aerobic and anaerobic digestion
- Develop other ERFs for recyclable materials including carpet and paint
- Update ERF for landfills
- Consider additional data on end use of exported recyclables



Implementation Plan

2. Permitting

Short Term Considerations:

- Work with regulatory bodies to address conflicting requirements
- Streamline permitting process, develop programmatic EIR's
- Develop web tools for planning and permitting
- Investigate facilitating co-location of organics processing at POTWs and post-closure landfills



Implementation Plan

3. Funding & Incentives for Infrastructure

Short Term Considerations

- Provide funding to meet air, water, and EJ goals
- Pursue expanded infrastructure financing
- Cap & Trade funding for incentives, grants, and loans
- Establish feed-in tariffs; monitor and assess ReMAT feed-in tariff
- Increase AB118 funding for AD
- Continue providing regulatory certainty for LCFS credits from AD and pursue further pathways

Implementation Plan

3. Funding & Incentives for Infrastructure (cont.)

Short Term Considerations

- Investigate criteria pollutant offset banks and credits for new and upgraded compost and AD facilities
- Establish new incentive programs for biomass conversion
- Ensure EPIC fund is devoted to new bioenergy facilities
- Investigate transmission grid interconnection costs
- Identify landfills with geographic potential for biogas injection
- Evaluate MSW Thermal technologies with regards to renewable energy credits

Implementation Plan

4. Public Education/Acceptance

Short Term Considerations

- Initiate public education campaign
- Educate project developers on odor and emission control technologies

Long Term Considerations

- Foster State, local, and private cooperation
- Evaluate effectiveness of education programs

Implementation Plan

5. Markets/Product Quality

- Enhance State procurement of recycled-content products (reform SABRC statutes, provide enforcement, increase education of state purchasing officials)
- Establish grants and performance standards to recover higher quality commodities
- Support development of cost-effective processes and equipment to remove contaminants from organic waste
- Investigate feasibility and impact of not allowing green waste ADC to count as recycling
- Consider mandatory organic waste recycling for large commercial generators

Implementation Plan

5. Markets/Product Quality – cont'd

- Incorporate recycling and recyclability as front-end design parameter for packaging and products
- Identify and support recycled, reused, and remanufactured materials markets
- Increase AD/compost markets by investigating financial incentives for use of compost and AD coproducts
- Work with industry to standardize compost/AD product quality specs
- Complete updates to regs for composting and AD of food and other highly putrescible wastes

6. Sustainability

Short Term Considerations

- Establish front-end processing standards for MSW-TT feedstocks

Long Term Considerations

- Maximize recycling of packaging materials
- Evaluate opportunities to reuse materials
- Develop new product stewardship programs

7. Research

- Improve characterization of direct and avoided GHG emissions from composting and AD-related sources
- Characterize properties of AD digestate to determine best uses
- Support R&D for new AD and composting BMP's
- Research emerging biomass conversion and thermal technologies
- Additional research for safe/beneficial uses of MSW and biomass conversion ash



Implementation Plan

7. Research – cont'd

- Investigate carbon sequestration and water savings through compost use
- Improve understanding of landfill gas collection efficiencies
- Conduct statewide characterization of landfill methane emissions and criteria pollutants
- Support research and demonstration of methane capture technology for conversion to LNG



Implementation Plan

8. Cap and Trade

Short Term Considerations

- Consider use of auction \$\$ for infrastructure development
- Review benchmarks for capped recycling and remanufacturing facilities
- Determine status of MSW-TT facilities
- Review landfills for inclusion in Cap-and-Trade



Implementation Plan

9. Regulatory/Statutory

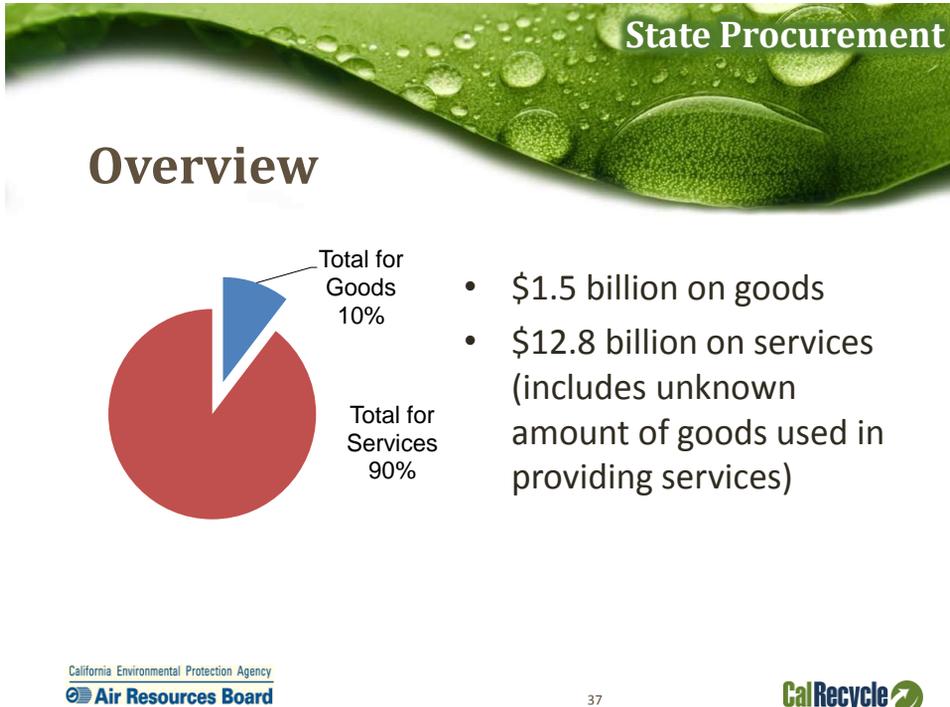
Short Term Considerations

- Consider phasing organics out of landfills and moving toward inert only landfilling practices
- Investigate regulatory actions to further reduce GHG emissions at landfills
- Monitor and participate in potential regulatory changes to improve grid interconnection



State Procurement Draft Paper

- **State Contract & Procurement Registration System (SCPRS)**
 - Tracks all purchases of goods and services over \$5,000.
 - Total reported **\$14.3 billion** (Goods \$1.5 Billion + Services \$12.8 Billion)
- **State Agency Buy Recycled Campaign (SABRC)**
 - Tracks purchases of recycled-content products in 11 broad categories.
 - Total reported: **\$185 million**
- **Each data source has different emphases and limitations**





SABRC Improvements:

- Increasing compliance
- Adding new SABRC product categories
- Increasing recycled content specifications
- Targeting goods under the IT-Services category
- Providing enforcement mechanism



Role of State Contractors

- Required to report on recycled content of goods offered or sold to the State
- However, not required to meet SABRC PCRC requirements
- Example: Building contractors cannot purchase off statewide contracts, and do not have to follow EPP guidelines or standards



Delegated Authority (DA)

- Agencies with DA may purchase independently; unclear whether meet PCRC requirements and whether report adequately
- DGS considering SABRC compliance checks during annual DA certification and renewal
- Would help reduce GHGs and track EPP and PCRC purchasing progress



Reporting of Purchases

- Potential under-reporting of purchases in SABRC
- Different reporting in SABRC and SCPRS
- Do all agencies provide data to SCPRS and SABRC?
- Data needed for carbon footprint analysis



State Procurement

Potential Focus Areas – cont'd

Product Information and Verification

- No system for tracking suppliers to verify PCRC
- Manufacturers and suppliers not required to disclose environmental information
- This data would help carbon footprint analysis



State Procurement

Potential Focus Areas – cont'd

Cost of Recycled Content Products (RCPs)

- In some cases, RCPs can cost more than virgin products
- Statute directs the purchase of fewer more costly products;
- **However**, cost-savings gained from other purchasing decisions can be put toward purchase of potentially more costly RCP products



State Procurement

Paper Case Study: Opportunities for GHG Reductions

Scenario 1:

If half of State agency copy paper purchases were 50% PCRC, and half 100% PCRC:

- **23% reduction in GHG emissions** (11,937 MTCO₂e)
- **Increased market demand** of approximately **12,000 tons** of recycled feedstock.



State Procurement

Paper Case Study: Opportunities for GHG Reductions

Scenario 2:

If half of State agency copy paper purchases were 100% PCRC:

- **33% reduction in GHG emissions** (17,133 MTCO₂e)
- **Increased market demand** of approximately **18,000 tons** of recycled feedstock



State Procurement

Opportunities for Supporting GHG and Waste Reductions

- Revise SABRC categories, establish requirements for contractors, provide enforcement mechanism, etc.
- Improve PCRC purchasing, data collection and reporting
- Identify high volume categories and associated State agencies, contractors, and subcontractors with greatest potential for waste and GHG reductions
- Identify and implement effective approaches to achieve waste/GHG reductions for targeted products



Questions and Comments

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Next Steps

- ARB looking to release discussion draft in a few weeks
- October 2013 - ARB Board hears update to Scoping Plan
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- ARB-CalRecycle Joint Working Group continues working on activities in Implementation Plan



Contact Info/Website

- Air Resources Board Climate Change: Waste Management Sector
 - <http://www.arb.ca.gov/cc/waste/waste.htm>
 - Contact: Mei Fong: sfong@arb.ca.gov
- CalRecycle Climate Change Portal
 - <http://www.calrecycle.ca.gov/climate/>
 - <http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=1025&aiid=935>
 - <mailto:climatechange@calrecycle.ca.gov>
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