



SB 1383: California's Organic Waste Reduction Mandate

The Resource Recovery Coalition of California (Resource Coalition) supports a long-term strategy to effectively divert California's organic waste and build the essential infrastructure to bolster our green economy and meet our climate change goals.

Executive Summary

The passage of SB 1383 (Lara, 2016) set an ambitious goal to divert the vast majority of California's organic waste from landfills by 2025 and significantly reduce methane emissions. Beginning January 1, 2022, cities and counties must collect and recycle organic waste from all residential and commercial generators, ultimately requiring over 160 new or expanded anaerobic digestion and compost facilities across California. It is estimated SB 1383 implementation and infrastructure development will cost upwards of \$10 billion by 2030 to achieve.

Preceding the COVID-19 pandemic, jurisdictions faced substantial financial, regulatory, and regional barriers in meeting SB 1383 programmatic expectations. Now with continued uncertainty regarding the extended fiscal impacts of the COVID-19 national emergency, communities are even more constrained in their ability to meet California's organic waste reduction requirements.

While initially a considerable cost, the cumulative economic, public health, and climate benefits associated with recovering organic waste will ultimately exceed the cost of the investments required, and will provide permanent green jobs at a time when California is experiencing extraordinary job loss and economic recovery needs. Achieving this will require harmonization across state and local agencies to overcome the barriers we face in building our essential organic waste management infrastructure.

Ultimately, meeting our organic waste reduction mandate will require a long-term, comprehensive policy framework that provides financial support and a coordinated, cross-agency strategy to develop the infrastructure and programs required.

Policy Background

The passage of AB 32 (Nuñez, 2006), the California Global Warming Solutions Act of 2006, affirmed California's commitment to reducing greenhouse (GHG) emissions, and set the stage for the California Air Resources Board (CARB) to regularly update a Scoping Plan to achieve our emission reduction goals.

A number of subsequent bills, including SB 605 (Lara, 2014), SB 32 (Pavley, 2016) and SB 1383 (Lara, 2016) served to codify CARB GHG reduction recommendations addressed through the Scoping Plan process. Notably, CARB identified that short-lived climate pollutants (SLCP), which include methane,



black carbon and fluorinated gases, have an outsized impact on climate change in the near term, and that the science unequivocally underscores the need to immediately reduce these emissions.ⁱ

One immediate and critical action identified to reduce California methane emissions is to divert organic waste from landfills. The phasing in of organic waste disposal reduction programs will reduce approximately 85-90 MMTCO₂e of emissions by 2030.ⁱⁱ In order to realize this significant GHG reduction will require substantial infrastructure capacity to divert and recycle our organic waste material.

Organic Waste Diversion Mandate

SB 1383 established a statewide target to decrease methane emissions at landfills by reducing the disposal of organic waste 75% below 2014 levels by 2025. Beginning 2025 and beyond, California must dispose of 5.7 million tons or less of organic waste annually. To put the enormity of this task in perspective, California disposed of approximately 27 million tons of organic waste in 2017.ⁱⁱⁱ

California lacks the critical infrastructure necessary to manage the volume of organic waste we generate, with less than 6 million tons diverted via compost and anaerobic digestion in 2015.^{iv} CalRecycle estimates that approximately 108 new or expanded compost facilities and 61 anaerobic digestion facilities are needed to meet our organic waste diversion goals. The agency anticipates 29.6% of organic waste, nearly 10 million tons in 2025, will go to compost facilities annually, while 15.7% of organic waste, over 5 million tons in 2025, will go to anaerobic digestion annually.^v This approach assumes the continuous production of compost and renewable biogas for beneficial use within the state.

Building our organic management infrastructure and programs will cost anywhere from \$566 million to \$1 billion a year between now and 2030 to achieve.^{vi} Jurisdictions are expected to meet programmatic requirements through local waste diversion programs, which are funded through local rates. In fact, a recent SB 1383 Local Services Rates Analysis Draft Report finds jurisdictions may be unable to fund organics collection services required without potentially significant adjustments to customer rates. The report recommends that jurisdictions be prepared to defend the necessity of any new rates to cover infrastructure and implementation costs.

The Benefits

Though substantial in cost, organic waste reduction provides significant climate benefits and supports local green job creation at a critical time for the state. CalRecycle estimates that achieving our organic waste reduction goals by 2025 will generate 11,700 permanent green recycling jobs and 4,500 temporary construction jobs in California.^{vii}

Local infrastructure development will also help jurisdictions meet organic waste product procurement requirements under the new CalRecycle SB 1383 regulations. Commencing January 1,



2022, jurisdictions must purchase enough organic waste products to meet annual population-based procurement targets. Permissible recovered organic waste products include renewable natural gas (RNG) from in-vessel digestion, compost, mulch and electricity from biomass conversion.

Additionally, a number of co-benefits exist when we mitigate organic waste impacts through beneficial use. Recovered organic waste products like renewable biogas displace fossil fuel and serve as an in-state renewable energy source, while compost improves soil health. Obtaining these benefits requires strong market support - as outlined in the SLCP Strategy - in order to efficiently process organic waste outside of the sanitary landfill and generate products that have viable markets to sustainably manage the waste material we generate.

The Current Reality

While the future holds significant promise, the reality is we are far from achieving our organic waste diversion goals. A recent SB 1383 Infrastructure and Market Analysis Report found that California only has 4 million tons of additional available permitted capacity for composting and anaerobic digestion - beyond the 6 million tons processed today. The report also recognizes that accessing this additional capacity will require significantly more vehicle miles traveled (VMT).

A number of environmental and regulatory barriers also exist when managing the various organic waste feedstocks captured under SB 1383. Food waste, for example, is highly putrescible and poses unique volatile organic compound (VOC) emission and odor challenges at the operational level. Indeed, over half of California composters do not accept food waste, while the vast majority who do only accept 10% or less.^{viii} According to the same report, 66% of facilities are not planning any additional future capacity to accept food waste. A combination of factors including contamination concerns, permit amendments, odor management, and costly facility upgrades limit this development at the local level.

One of the most significant barriers to siting and permitting new or upgraded organic waste facilities are local air quality laws and requirements. Meeting VOC emission limits for New Source Review (NSR) obligations, especially in federal non-attainment air districts, is difficult and often requires the purchase of emission reduction credits (ERC) which may or may not be available. A 2017 CalRecycle study found that even in a low emission factor (EF) scenario, where considerable organic material is transported out of air districts of concern, five air districts might not have sufficient VOC ERCs to offset facility emissions.^{ix}

With any mitigation effort, there is no perfect solution, and both compost and anaerobic digestion pose their own benefits and barriers. Ultimately, critical investments are required so that these facilities can successfully meet the most stringent air and water quality standards, while also managing the volume and feedstocks necessary to achieve our goals. Additionally, the organic waste products they produce must have viable markets to sustain the diversion system.



In California, the single largest market for compost is agriculture. Contamination issues, especially as we introduce more food waste and compostable packaging into programs, is a huge concern for compost producers that must meet rigorous contamination standards. OMRI certified organic composters, for example, cannot accept compostable bioplastics. Furthermore, accessing California's robust agricultural market requires more VMT for non-agricultural regions.

Urban communities are more likely to employ anaerobic digestion technologies, which produce a renewable biogas often converted to electricity or RNG for direct fueling or injection into the pipeline. However, interconnection cost challenges with utilities make these projects incredibly difficult to finance. Moreover, considerable market uncertainty exists as it pertains to the role of renewable biogas from organics as part of California's larger renewable energy portfolio. With the intention to phase out the use of RNG in heavy-duty trucks by 2045, and for refuse trucks to be fully zero emission by 2040, there is no dependable market for this organic waste product long term, even with procurement requirements under SB 1383 regulations. It is critical that we consider these issues as we strive to build our necessary organic waste management infrastructure in the near and long term.

While compost and anaerobic digestion comprise the largest projected tonnage compliance mechanism to manage organic waste generated, food recovery for human consumption or animal feed, paper recycling, chip and grind facilities, biomass conversion, and of course source reduction, all play an imperative anticipated role and provide their own opportunities and barriers to diverting our material. For example, CalRecycle's recently released Analysis of the Progress Toward the SB 1383 Waste Reduction Goals notes that approximately 5 million tons of material disposed of in landfills each year could be sent to biomass conversion.^x Though untreated urban wood material is an appropriate feedstock for biomass conversion, overall annual tonnage of this material currently accepted is just over 1 million tons, with only 4,510,696 tons processed at all California biomass facilities from all sectors in 2019.^{xi} Not only is the projection that an additional 5 million tons be absorbed via California's current biomass conversion infrastructure wholly unrealistic, these facilities have higher emissions and are less efficient than newer, advanced thermochemical technology facilities. California must focus on the development of advanced technologies to manage the complicated feedstocks that comprise our organic waste material stream.

Finally, it is imperative that we advance organic waste management goals with an environmental justice framework to not further burden our most impacted communities with development that could threaten air quality. It is critical that we develop local organic waste management systems and infrastructure that ultimately reduce VMT and guarantee communities remain responsible for their own waste generated. This has the added benefit of bringing green jobs to the local community, with both diversion and food recovery infrastructure, as well as the production of renewable energy, compost, etc. to support the local economy and California's overall GHG reduction goals.



Next Steps

While California recognizes that immediate mitigation of organic waste is a crucial component of our climate change strategy, there is little consensus on how we will achieve this goal given regional limitations and our regulatory reality. How can we harmonize efforts to rapidly incentivize and advance California's goal of diverting organic waste to beneficial use?

California must develop a long-term strategy to efficiently divert organic waste from the landfill that addresses the cost and regional regulatory limitations of organics management, including a strategy for biogas and compost use. Ultimately, we need cross-agency agreement on the immediate, mid-term and long-term approach to mitigating our organic waste. The strategy should include goals for local organic waste management development that support a circular economy framework. In other words, the strategy should bolster local resilience and put organic waste to beneficial use within the local community.

The passage of AB 1045 (Irwin, 2015) was a step in the right direction, requiring CalRecycle to coordinate with CARB, CDFA and the State Water Resources Control Board to develop a policy that promotes the development of coordinated permitting and regulation of composting facilities. Unfortunately, little progress has been made since the November 2018 release of the report, and the report failed to address anaerobic digestion development or other diversion strategies. California requires a comprehensive approach, reflective of regulatory intent, to managing the organic waste we generate.

In order to achieve our GHG reduction goals, create permanent jobs, and ensure California's leadership in organic waste management, California needs to prioritize and incentivize organic waste management. Below are recommended solutions we request the California Air Resources Board and the Legislature consider for a comprehensive organic waste diversion policy framework:

- Coordinated cross-agency strategy to bolster our organic waste diversion system
- Long-term statewide funding to support diversion programs, including an appropriate landfill tip fee increase
- Development of coordinated and streamlined permitting for new or expanded facilities
- Regulatory certainty that investments will not become stranded assets in the future, especially as it pertains to renewable biogas use
- Robust state procurement program of organic waste products to drive organic management development and markets, including RNG utilization
- Tax credits and incentives to encourage more private investment for infrastructure as well as honor the early investment of private entities who supported state efforts for early compliance with recycling mandates



With these solutions, California can meet our GHG reduction and organic waste diversion goals, as well as provide a roadmap for the rest of the nation on how organic waste mitigation can provide significant economic, public health and environmental benefits.

Please feel free to reach out with any questions to the Resource Coalition representatives below:

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ⁱ California Air Resources Board (CARB), Short-Lived Climate Pollution Reduction Strategy, Sacramento, March 2017, <https://ww2.arb.ca.gov/resources/documents/final-short-lived-climate-pollutant-reduction-strategy-march-2017>

ⁱⁱ California's Climate Strategy: Waste Sector Goals (4/18/2019), <https://www2.calrecycle.ca.gov/Publications/Download/1436>

ⁱⁱⁱ CalRecycle 08/20/19 Presentation – Proposed Organic Waste Regulations Draft Environmental Impact Report, <https://www2.calrecycle.ca.gov/PublicNotices/Documents/11257>

^{iv} CalRecycle, State of Recycling in California, Updated 2016

^v CalRecycle 08/20/19 Presentation – Proposed Organic Waste Regulations Draft Environmental Impact Report, <https://www2.calrecycle.ca.gov/PublicNotices/Documents/11257>

^{vi} SB 1383 Appendix A Cost Update

^{vii} <https://www.calrecycle.ca.gov/docs/cr/organics/slcp/sb1383benefitsca.pdf>

^{viii} CalRecycle, SB 1383 Infrastructure and Market Analysis Report, April 2019, <https://www2.calrecycle.ca.gov/Publications/Details/1652>

^{ix} CARB, Composting in California: Addressing Air Quality Permitting and Regulatory Issues for Expanding Infrastructure, August 2018 Discussion Paper

^x CalRecycle, Analysis of the Progress Toward the SB 1383 Waste Reduction Goals, August 2020, <https://www2.calrecycle.ca.gov/Publications/Download/1589>

^{xi} SB 498 Reporting 2019 Biomass Conversion, August 2020, <https://www2.calrecycle.ca.gov/PublicNotices/Documents/12294>