

## February 6, 2017

Mary Nichols, Chair California Air Resources Board 1001 "I" Street Sacramento, CA 95814

# Re: Comments on the Draft Environmental Analysis for the Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target

Dear Ms. Nichols;

The California Compost Coalition (CCC) is a statewide organization representing operators of permitted facilities involved in the processing and composting of green and food waste materials throughout California. On behalf of these companies, we have already submitted comments on December 2, 2016 Discussion Draft of the 2030 Target Scoping Plan Update and on the December 14, 2016 meeting on the Natural & Working Lands model. CCC supported SB 32 and SB 1383 and looks forward to the joint implementation of SB 1383 by CARB and CalRecycle in the regulatory process to divert 50% of all organics from landfill by 2020, and 75% of all organics by 2025.

CCC supports the overall vision and strategy set forth in the 2017 Climate Change Scoping Plan Update and the November 2016 draft of the Short-Lived Climate Pollutant Reduction Strategy appreciate that these plans have been linked. Both of these plans need to develop a sustained funding mechanism to develop the multibillion dollar infrastructure to develop over 100 facilities and to foster the use of compost on our working lands, with a focus on irrigated croplands.

Composting and anaerobic digestion form the cement that binds the Governor's Five Pillars together. Eliminating organics from the landfills will mitigate methane generation as a short-lived climate pollutant to implement SB 1383 (Pillar 4), and instead, create biomethane power at anaerobic digestion facilities to generate more renewable energy to achieve the goals of SB 350 (Pillar 2) and carbon negative fuel for the CNG fleet that collects the organics and implements the Low Carbon Fuel Standard (Pillar 1) to displace diesel. The diverted food waste and digestate can be composted to sequester carbon and be integral to healthy soils (Pillar 5). Organic power and compost use have been deemed among the most cost-effective greenhouse gas (GHG) reduction strategies and bond all Five Pillars together. The California Legislative Analyst's Office determined the cost of composting and anaerobic digestion to be at just \$9/ton of GHG reduction while the overall average is \$57/ton.

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# Comments on the Draft Environmental Analysis for the Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target

## Comments on Section 2 Agricultural and Forest Resources – i. Cap-and-Trade Measure

#### i. Cap-and-Trade Measure

Under the post-2020 Cap-and-Trade Offset Protocols, eligible offset credits would be generated through projects that are in conformance with all applicable environmental, health, and safety regulations. Implementation of the ODS Offset Protocol and the Urban Forest Offset Protocol projects would not include activities that would be located within agriculture or forest resources, and thus could not adversely affect farmland or forest lands. Implementation of the Livestock Offset Protocol would include the operation of digesters in agricultural settings. Digesters are consistent with agricultural uses and would not represent an adverse change to agriculture or forest resources. Implementation of the U.S. Forest Offset Protocol would not increase the amount of forest activities, but could shift activities to projects that increase carbon sequestration (i.e., reforestation, avoided deforestation).. The U.S. Forest Offset Protocol does not incentivize actions that would encourage the conversion of agricultural land or forest lands (ARB 2010). Implementation of the Rice Protocol would not incentivize new rice fields on lands not currently in production, and would not adversely affect agricultural and forest resources (ARB 2014a). Implementation of landfill projects in Ontario would involve the operation of gas collection and control systems, which would not be located on agricultural or forest lands.

Compost use and biochar use on irrigated agricultural lands should be developed as a Cap-and-Trade Offset Protocol, since it is not business as usual, with only about one million acres of the nine million acres that are irrigated statewide using compost, just 11%. Compost use on irrigated cropland is not included in the Scoping Plan, and should qualify as a Cap-and-Trade Offset Protocol

CCC would like to clarify the intent of the Scoping Plan language should include compost use not be just for grasslands, but also for irrigated cropland. The following has been recommended with supportive information to increase compost use:

- Include Irrigated Cropland (compost use) in the model with a low and high management scenario of 40,000 acres per year and 80,000 acres per year
- Grasslands compost amendment (state/private) Require CalTrans and Department of General Services and other state agencies to use compost following current state law and increase by over 10,000 acres per year

Compost use on irrigated croplands is the largest current market, estimated at over 1,000,000 acres per year, and yet is not included the CALAND model despite its huge potential growth.

- Low Management
  - Assumed 1,000,000 acres baseline in 2017
  - 500,000 acres by 2030 to get 50% of new compost produced –
  - o Add 40,000 acres each year
  - Possible 1.5 million acres using compost 17% of all irrigated cropland
- High Management
  - Assumed 1,000,000 acres baseline in 2017
  - 1,000,000 acres by 2030 to get 100% of new compost produced –
  - o Add 80,000 acres each year
  - Possible 2.0 million acres using compost 22% of all irrigated cropland

#### Comments on Section 2 Agricultural and Forest Resources – Post-Mitigation Significance Determination

Consequently, while impacts could be reduced to a less-than-significant level by land use and/or permitting agency conditions of approval, this Draft EA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes that, operational impacts to agriculture and forest resources associated with reasonably foreseeable compliance responses related to increased stringency of the LCFS regulation and offset protocols under the Cap-and-Trade Program under the Proposed Plan would be **potentially significant and unavoidable**.

Compost use on irrigated croplands is a large current market, estimated at over 1,000,000 acres per year, and yet is not included the CALAND model despite its huge potential growth, and could double by 2030, to another one million acres. The implementation of a Cap-and-Trade Offset Protocol for compost use would have a net benefit and not potentially significant and unavoidable impacts.

#### Comments on Section 3 Air Quality – ii. SLCP Measures

Operation of new green waste composting facilities could potentially increase VOC and PM emissions depending on the type of composting employed. These facilities could also cause other criteria pollutant emissions associated with the use of heavy equipment on-site (e.g., tractors, compost turners, and grinders) and from waste-haul truck traffic to and from the sites. Air quality impacts from the operation of digesters and associated equipment at composting facilities could depend on the type of digester technology and the end use of the captured biogas and may include CO, PM, SOX, VOC, and NOX. Although there would be emissions associated with these sources at anaerobic digestion and composting facilities, the operation would divert organics out of landfills. As a result, there would be less mobile source at activity at landfills. Operation of digestion facilities could also help offset other emission sources by generating electricity or producing biogas as a substitute for fossil vehicle fuels.

The Environmental Analysis needs to recognize baseline conditions for organic waste management practices such as landfilling when assessing the emissions from composting and anaerobic digestion facilities. Page 62 (copied above) states that compost facilities could potentially increase VOC and PM emissions, but does not discuss the baseline conditions of these materials being landfilled, with methane and other associated landfill operations emissions. Since the SLCP measures are diverting food waste and green waste from landfilling, these baseline conditions need to be recognized where the net benefit of both greenhouse gas reductions and criteria pollutants can be demonstrated when diverting green waste and food waste from landfills to composting and/or anaerobic digestion facilities.

Some local air districts are treating new covered aerated static pile (CASP) compost facilities, using the best available control technologies as a new source, as inferred in the statement above, where the cost of permitting and offsets can stop the development of the facility. This Environmental Analysis needs to recognize the net benefit of both greenhouse gas reductions and criteria pollutants can be demonstrated when diverting green waste and food waste from landfills to composting and/or anaerobic digestion facilities.

Because the implementation details of many of the methane measures identified in the SLCP Strategy depend substantially on the design of future incentive and regulatory programs, and upon local permitting decisions, long-term air quality impacts at this point are difficult to categorize with certainty. As described above, there are methods available to implement the identified measures that may have beneficial impacts on long-term air quality through the replacement of more-polluting emissions sources and fuels. Indeed, as a statutory matter, per SB 605, SB 1383, and AB 32, along with existing Health and Safety Code mandates for criteria pollutant planning, ARB will ultimately need to develop approaches to addressing these issues that ensure that air quality goals are achieved. However, for the conservative purposes of this programmatic analysis, ARB has also disclosed implementation choices that could substantially affect air quality.

We appreciate the recognition of the beneficial impacts on long-term air quality mentioned in the statement above, but the analysis then notes there could be choices which substantially affect air quality. This Environmental Analysis needs to recognize the net reduction, with a macro analysis, that both greenhouse gas and criteria pollutants reductions can be demonstrated when diverting green waste and food waste from landfills to composting and/or anaerobic digestion facilities. Attached is a White paper by Edgar & Associates calculating that the new benefit of greenhouse gas reductions is over 14 million metric tons per year in 2025 by diverting over 13 million tons of organics from landfilling as required of SB 1383. With respect to criteria pollutants, the covered aerated static pile compost systems have been shown to reduce VOC emissions by over 80% with the use of biofilters, which should be compared to the baseline landfill system.

PRC 42649.87.b from AB 1045 states that California Environmental Protection Agency shall promote a goal of reducing at least five million metric tons of greenhouse gas emissions per year through the development and application of compost. Using the adopted emission factors, it would take 9.8 million tons of compost use to reach this requirement, diverting almost 17 million tons of organics from landfills. Calculations are provided below. This Environmental Analysis should provide the metrics and needed programs to achieve this requirement in the GHG section. Applying compost on irrigated croplands could use 7 million tons of compost by 2030, which would represent only 22% of the irrigated farmland, and Caltrans and the other state agencies should be capable of using the remainder.

| PKC 42049.87.D           | 5,000,000   | wrtc0 <sub>2</sub> e      | nonicom     | post <i>use</i> . |   |
|--------------------------|-------------|---------------------------|-------------|-------------------|---|
|                          |             |                           |             |                   |   |
| Decreased Soil Erosion   | 0.25        | MTCO <sub>2</sub> e/      | per ton con | npost             |   |
| Decreased Fertilizer Use | 0.26        | MTCO <sub>2</sub> e/      | per ton con | npost             |   |
| Decreased Herbicide Use  | 0           | MTCO <sub>2</sub> e/      | per ton con | npost             |   |
|                          | 0.51        | MTCO2e/                   | per ton con | npost             |   |
|                          |             |                           |             |                   |   |
| 9,803,922                | tons of     | compos                    | t to reac   | h this go         | a |
| 0.58                     | conversio   | compost                   |             |                   |   |
| 16,903,313               | tons of co  | tons of compost feedstock |             |                   |   |
|                          |             |                           |             |                   |   |
| Source: https://www.arb. | ca.gov/cc/v | waste/cerf                | ffinal.pdf  | pg 19             |   |

### Seven million ton of more compost use by 2030:

## **Compost and Anaerobic Digestion as a Cost-Effective Measure**

The LAO has determined that organics/recycling loans and organic composting/anaerobic digestion grants are among the most cost-effective (from \$4/ton to \$9/ton) where \$57/ton is the average and the high has been up to \$725/ton. Since December 2014, Edgar & Associates has provided similar data, utilizing a CO<sub>2</sub> reduction supply curve to the LAO, ARB and legislators, to show that compost/AD as one of the most cost-effective GHG reduction strategies, using the "marginal cost abatement" methodology. We are happy to see the LAO validate this work. This information needs to be presented in **Table III-3**. **Estimated 2030 Cost Per Metric Ton by Measure** showing compost and anaerobic digestion as an implementing measure of SB 1383 and the Short-lived Climate Pollutant Reduction Strategy, to divert organics from landfills.

## Net Zero from the Waste Sector by 2030:

The AB 32 Scoping Plan First Update was adopted on May 15, 2014 by the California Air Resource Board and includes the Net-Zero concept as copied below. Net-Zero has been defined by the California Air Resources Board as when an organization's avoided indirect emissions offset their operational emissions. By reporting the progression of operational vs avoided emissions, it is possible to demonstrate many solid waste and recycling companies have already achieved this goal.

| The concept of Net Zero   |
|---------------------------|
| GHG Emission from the     |
| Waste Sector by Mid-      |
| Term was hallmark in the  |
| Fist Update in adopted in |
|                           |

| Descrete Transport of Carry  | Cost Des Ten                                      |  |  |
|--|---|--|--|
| Program  | Cost Per Ton                                      |  |  |
| Organics and recycling loans 🚖   | \$4   |  |  |
| Forest health  | 4   |  |  |
| Dairy digester research and development program  | 8   |  |  |
| Organics composting/digestion grants 🛧   | 9   |  |  |
| Forest legacy  | 10  |  |  |
| Recycling manufacturing  | 15  |  |  |
| Delta and coastal wetlands restoration   | 30  |  |  |
| State water and efficiency and enhancement program   | 33  |  |  |
| Clean vehicle rebates  | 46  |  |  |
| Sustainable agricultural lands conservation  | 59  |  |  |
| Mountain meadow ecosystems restoration T A C   | 113   |  |  |
| Urban and community forestry   | 116   |  |  |
| Water-energy grant program LEGISLATIVE ANALYS  | T'S OFFICE 141                                    |  |  |
| Affordable housing and sustainable communities   | 191   |  |  |
| Single-family solar photovoltaics <sup>b</sup>   | 209   |  |  |
| Transit and intercity rail capital   | 259   |  |  |
| Single-family energy efficiency and solar water heating <sup>b</sup>   | 282   |  |  |
| Large multifamily energy efficiency and renewables <sup>b</sup>  | 343   |  |  |
| Enhanced fleet modernization program "plus-up"   | 414   |  |  |
| Truck and bus voucher incentives   | 452   |  |  |
| Incentives for public fleets pilot project for DACs  | 725   |  |  |
| Overall Average  | \$57  |  |  |
| <sup>1</sup> Calculated as the amount of cap-and-trade funds awarded to a program divided greenhouse gas (GHG) emission reductions from the projects that receive cap-a Assumes GHG reductions at the midpoint of the administration's estimated range | by the total estimated<br>and-trade funds.<br>Ie. |  |  |

May 2014, and should be part of the 2017 Update, as we can achieve this goal much sooner with the diversion of organics from landfilling, and the use of recycled material in California manufacturing process.

## Achieving Net-Zero GHG Emissions from the Waste Sector by Mid-term

Beyond 2020, additional reductions in GHG emissions from the Waste Sector will be needed to achieve a Net-Zero GHG emissions goal. To achieve these reductions, even greater diversion of organics and other recyclable commodities from landfills must be realized and further expansion and enhancement of the alternative non-disposal pathways must be developed. In addition, greater emphasis will need to be placed on reducing the volume of waste generated, recycling/reusing products at the end-of-life and remanufacturing these materials into beneficial products. To achieve Net-Zero, the direct GHG emissions from the Waste Sector would have to be fully offset by avoided GHG emissions. Avoided GHG emissions are reductions in life-cycle GHG emissions that would occur because waste is shifted from landfilling to alternative non-disposal pathways.

AB 32 Scoping Plan – First Update May 15, 2014

CCC supports the overall vision and strategy set forth in The 2017 Climate Change Scoping Plan Update and the November 2016 draft of the Short-Lived Climate Pollutant Reduction Strategy and appreciates that these plans have been linked. CCC respectfully request that CARB further evaluate our recommendations below to fully close the loop on recycling and composting with waste diversion to compost use in the one of the most recognized cost-effective GHG reduction measures available:

- Seven million more tons of compost use on irrigated croplands by 2030
- Composting and Anaerobic Digestion as most cost-effective measure
- Net Zero for the Waste Industry by 2030

Should you have any questions, please contact me at (916) 739-1200.

Sincerely,

Gran MK YR

Evan W.R. Edgar Regulatory Affairs Engineer

cc: Scott Smithline, Director, CalRecycle