

## Response to CCSMM's request for comment and solutions

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Thu 10/15/2020 18:25  
To: DEEP RecyclingProgram  
Cc: Scott E. Kalb <Scottekalb@gmail.com>  
Comment for CCSMM Oct 15 2020.pdf  
969 KB

Dear CT Coalition for Sustainable Materials Management,

Please find attached our response to your request for comments and solutions to reduce food waste. We are recommending the CCSMM consider the process of converting food waste into animal feed as a viable, scalable solution for reducing waste in the organics focus area. We look forward to further discussions with the coalition.

Thanks so much.

Best,

Jonathan

**Jonathan Fife**

Smart Feed Tech, Board Member

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**Scott E Kalb**

Town of Greenwich RTM, District 7

Town of Greenwich First Selectman's Waste Management Committee, Secretary

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**RE: Public engagement questions and request for comment and solutions, to solicit input, concepts, and considerations for sustainable materials management solutions.**

Dear CT Coalition for Sustainable Materials Management ("CCSMM"),

Please find our response below to your request for comment and solutions to reduce food waste. We recommend the CCSMM consider the process of converting food waste into animal feed as a viable, scalable solution for reducing waste in the second focus area, organics. We look forward to further discussion with the coalition.

- 1) Are there any model programs, best practices, or innovative concepts that the Coalition should consider, that could provide a scalable solution in any of the Focus Areas, listed above? The Coalition is interested in hearing about approaches that are conceptual, implemented on a pilot basis, or implemented at scale, whether here in Connecticut or in other jurisdictions in the United States or other countries**

*One additional innovative concept that we believe should be considered under organics (focus area 2) is the process by which food waste can be converted into animal feed. Currently there is a plant in North Grafton, Massachusetts that was issued a recycling, composting, and conversion permit to process 375 tons of Fresh Unwanted Food Waste per day and up to 136,875 tons per year by the Mass Department of Environmental Protection ("DEP"). The site has been operating for several years and currently takes in roughly 70 tons of food waste per day on average. After removing unwanted materials, grinding, and mixing the waste, the operation then heats the waste, exceeding temperatures that are required by the FDA and state law, and pelletizes the output. The operation currently sells the pelletized final product to brokers who distribute to farms in the Northeast.*

*We note that plants converting organic food waste into animal feed also have been operating in New Jersey and California. Additionally, several East Asian countries have achieved strong results converting food waste to animal feed by carefully monitoring compliance with governing laws and regulations, notably Japan and South Korea.*

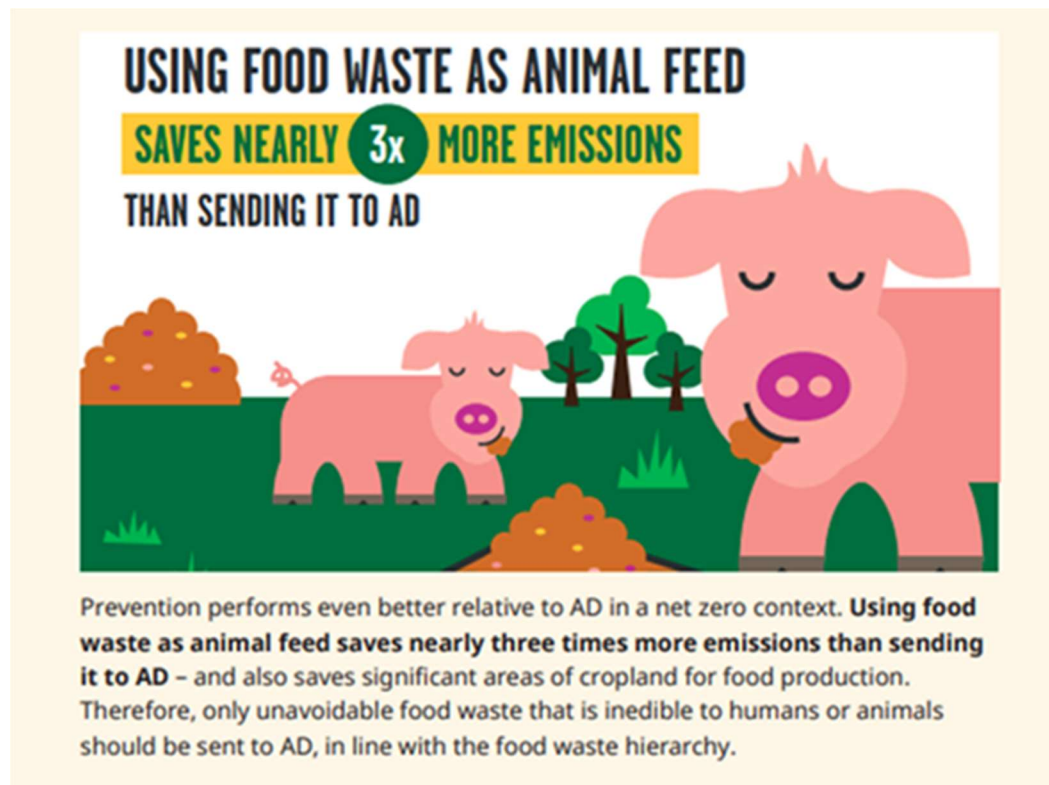
*The economic characteristics of this solution are more attractive than many existing comparative solutions. Currently, the price per ton for feed in the U.S, depending on the nutrient make-up (i.e. protein, fats, amino acids), is north of \$100 per ton. Even, when taking into account the cost of operating a plant, including moisture that is lost in the heating*

process, we believe it is evident that a business in this segment can operate profitably and therefore sustainably over the long-term (see commentary in question number 2 below for current barriers to profitability and considerations here).

Given steady demand and consistent pricing trends for animal feed over time, we believe the economics of converting food waste into animal feed are significantly more attractive than anaerobic digestion or converting food waste into power. This economic advantage can provide important cost savings to municipalities in terms of lower tipping fees for food waste at animal feed plants (AF) versus anaerobic digestors (AD).

We further note that converting food waste into animal feed saves nearly 3x greater greenhouse gas emissions than converting food waste into power via AD, according to a report by Feedback, the UK not for profit dedicated to transforming the food system.

<https://feedbackglobal.org/wp-content/uploads/2020/09/Feedback-2020-Bad-Energy-report.pdf>



The United Nations also recommends converting food waste into animal feed, as noted below.

“The United Nations estimates that if farmers all around the world fed their livestock on the food we currently waste and on agricultural by-products, enough grain would be liberated to

*feed an extra three billion people, more than the additional number expected to be sharing our planet by 2050.”*

*Source: United Nations Environment Programme (2009), The Environmental Food Crisis – The Environment’s Role in Averting Future Food Crises, A UNEP Rapid Response Assessment, ed. C. Nellemann et al., February 2009, p. 19*

**2) For any solution identified in Question 1, what are the barriers that need to be addressed in order to advance any of these solutions at scale in Connecticut?**

**A) Are there different implementation considerations for full or partial “subscription” towns versus towns that provide for curbside collection of trash & recyclables?**

*The main barrier that needs to be addressed for this solution to be highly scalable and efficient is the ability to source cleanly separated food waste in a cost-effective manner. In the case of the operation in Massachusetts noted above, the company contracts with restaurants and food dispensaries directly to pick up food waste, but there is often metals, plastics, and other non-food material mixed in that put significant financial stress on the front-end of the operation, requiring workers to pick through the waste. In some instances, the waste collected ultimately needs to be discarded to landfills. Additionally, the Massachusetts operation bears the cost of a fleet of trucks to pick up the waste from its customers in disparate locations. One consideration for the CT Coalition for Sustainable Materials Management is to think of strategies and incentives it can provide to help with sourcing cleanly separated food waste in centralized locations.*

*Another potential barrier to scaling this solution efficiently is the need for high-level technology and equipment to process moisture-rich (wet) food waste effectively. We note that the Massachusetts operation noted above has limited resources and is currently using older technology, limiting food waste sourcing to mostly dry inputs. New drying technologies are available, and we are currently working in partnership with engineers and academicians on a more efficient process to handle both dry and wet food waste and significantly increase capacity in Massachusetts.*

*It is not a barrier per se, but it is worth noting that there are strict Federal and State Laws governing operations that sell feed. Protein-containing portions of mammalian products cannot be fed to ruminants, and most forms of food waste need to be heated to at least 212 degrees Fahrenheit for 30 minutes. In this regard, any operations to convert food waste to animal feed will need to have strong quality control processes to ensure compliance with such laws.*

**B) Is it necessary or beneficial for the solution to be implemented on a statewide, multi-town, or other regional basis, or can it be implemented successfully town-by-town?**

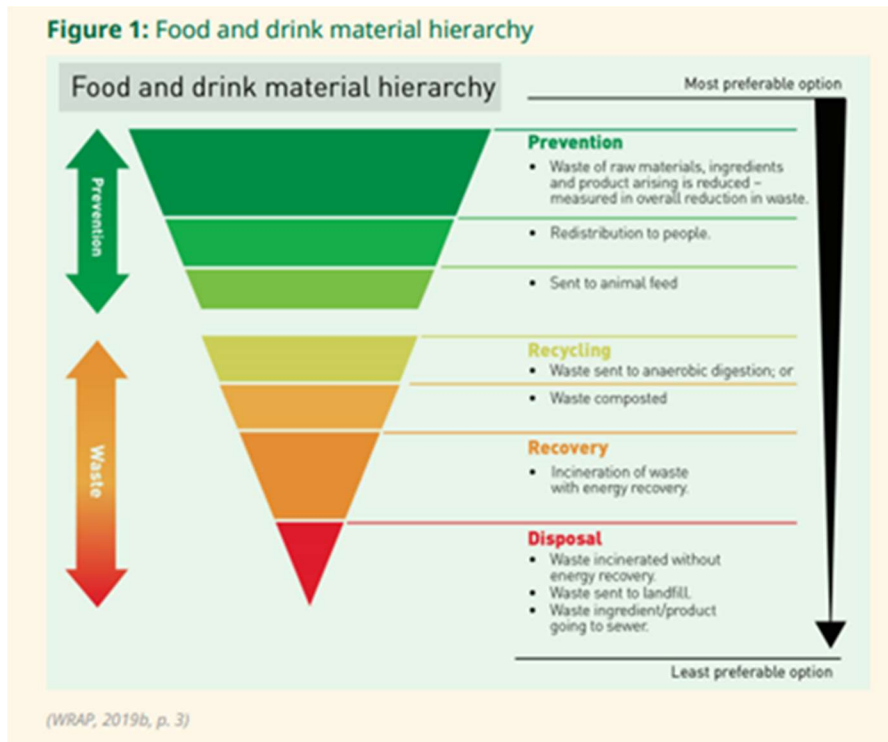
*This solution can be implemented on a town by town basis subject to a minimum number of towns participating, as long as there is a location where waste can be picked up for each*

town, and the participating towns are located in reasonable proximity (less than 45 minute drive times). Since there is a minimum number of towns needed to produce enough waste for any manufacturing plant to receive scale efficiencies, implementing this on a regional basis would be ideal.

**3) For any solution identified in Question 1, please describe the types of implications or benefits that the solution provides with respect to:**

**A) Sustainability- environmental benefits.**

Conversion of food waste into animal feed will benefit the environment by reducing methane emissions. According to the USDA in the United States, food waste is estimated at between 30-40 percent of the food supply translating to 31.7 million tons of food waste each year — 12.5% of the total waste stream. Only 2.6% of that food waste does not end in landfills, creating the second largest single human source of methane emissions, accounting for 23% of all methane sources. The EPA lists feeding animals as the third most beneficial way to dispose of food waste, above industrial uses (such as anaerobic digestion) as well as composting, and only behind source reduction and feeding hungry people. Please see the food hierarchy chart below



**B) Reducing Costs.**

Feed can be sold to livestock producers for prices that are north of \$100 a ton. Creating a product from waste that has high and stable value will allow food waste to animal feed

*operations to charge lower prices to pick up waste. This will in turn translate into lower waste disposal bills for municipalities, businesses, and residents.*

- 4) Would you be interested or willing to present to the Coalition or a Coalition working group on solutions you've highlighted, or is there another speaker or organization that would be helpful for the Coalition to hear from on this topic?**

*We would be interested to present to the Coalition in more detail. We have been working with food waste engineers and are currently organizing a partnership with an academic institution to further research the most efficient way to process food waste. Although the Massachusetts operation is successfully processing waste, resource and funding limitations have prevented it from processing certain higher moisture waste streams. Our technical advisor has presented several newer technologies than the one utilized in Massachusetts, and our academic partnership will be engaged in robust testing to confirm the most cost-effective solutions.*

- 5) DEEP can play an important role in advancing sustainable materials management solutions, including: issuing RFPs for long-term energy contracts to support anaerobic digestion facilities; providing grants for collection trucks powered by compressed natural gas (CNG) or electricity through the Volkswagen settlement; employing different approaches to permitting innovative technologies; and streamlining permitting processes. Are there things that DEEP should do differently in its approach to any of the above roles/functions, that would better support sustainable materials management in Connecticut?**

*As noted above, the most significant threat to this operation is the failure to cleanly separate food waste from other forms of waste. If the municipality could develop tools/policies/strategies to help solve this problem, converting food waste to animal feed becomes a highly scalable, efficient, cost effective and environmentally friendly solution for reducing waste.*

- 6) Are there any solutions that you would like the Coalition to know about that do not fit within the Focus Areas above?**

*No*

- 7) Are there any aspects of the Focus Areas, listed above, that the Coalition should not consider (and if so, why)?**

*Not applicable*