

## **FOOD SCRAPS LAW IMPACT ON FARMS AND PROCESSORS**

### *Constraints in Farm Participation*

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#### **Introduction to Law**

Effective January 1<sup>st</sup>, 2022 New York State will implement new legislative guidance on food donation and scrap recycling – The Food Donation and Food Scrap Recycling Law<sup>1</sup>. This provides an opportunity for farms with an Anaerobic Digester (AD) to harvest the energy and the nutrients from the food waste and add to farm revenue through tipping fees. Although, there are some constraints for the farm to consider before accepting food waste as discussed below.

#### **Initial Questions for Consideration**

When evaluating adding feedstocks, consideration should be given to biogas generation per volume of material, impact on the existing digester's retention time, potential inhibitors of biogas production, ease of integrating into current AD operation, the fate of the additional liquid volume and nutrients that accompany other feedstocks, and impact on economic performance.

- Does incoming food waste volume reduce the digesters HRT below the recommendation for co-digestion or increase the organic loading rate above that recommended by the vendor?
- Are there potentially toxic substances that can suppress successful biological operation?
- Do the proposed feedstocks contain components that affect biogas contamination?
- Can a long-term contract with the supplier of food waste guarantee the feedstock volume, quality, and allow for tipping fees to be secured?
- Will any additions to capital and operating costs be justified by any increase in revenues?

#### **Available Food Wastes**

Suitable co-digestion feedstocks may include the following: pre-consumer (unused and/or expired food from grocery stores or food and beverage processing); post-consumer (including returns, food scraps from restaurants, cafeterias); or food processing wastes. The highest value co-digestion feedstocks are those that biodegrade most easily

such as sugar, starch, fats, and proteins. Consideration should also be given to the feedstocks pH, biodegradability, amount of non-biological contaminants, nutrient balance, mixing and particle size, moisture and total solids, and existence of gases that suppress bacteria.

#### **Legal Considerations**

The acceptance of food feedstocks on-farm requires the reevaluation and consideration of permits and updating required reports for the state.

- Accepting food waste may require new registration or permits with the NYS DEC. Ensure you have the correct permits with your regional DEC office.
- For farms with a Comprehensive Nutrient Management Plan (CNMP) regulatory oversight begins when >50 % of influent is organic waste is received per day 6NYCRR 361-3.3(b)(1).
- The influx of dense nutrient organics could compromise farm CNMP and may require it to be updated.
- Acceptance of food waste should go along with a long-term contract (5 to 10 years) with the feedstock supplier that guarantees the organic quality of the feedstock, the amount that can be provided, and how frequently the feedstock can be delivered. The contract should also include transportation costs and tipping fees.

#### **Operational Considerations**

A major consideration with co-digestion is the operational changes required to effectively operate an AD with more than one feedstock. Many of these operational changes are outlined below but vary based on the existing management.

- An added management layer is often required when moving to co-digestion to deal with contracts with waste producers, managing the wild loads, and provide additional control of the digesters biological function. While a co-

digestion feedstock may emanate from the same source, there will likely be daily variations on solids content and strength that must be monitored to avoid digester upsets.

- Food waste may require preprocessing, de-packaging, and mixing for uniformity.
- Incoming food waste needs to have proper storage that can combat the odors and acidification associated with food feedstocks. Settling and uniform mixing of the feedstock should be considered in the pre-digestion storage.
- Additional volume of organics will require reevaluation and probable reduction in the hydraulic retention time of the existing digester.
- The addition of outside organics increases potential risks for contaminants. Testing for contaminants and chloride toxicity testing will increase in frequency.
- Increases in nutrients on-farm can impact CNMP mass balances, NPK balance, neighbors (farms) acceptance of nutrients, and possible neighbor concerns of odors emanating from pre-digested feedstock.
- Farms should consider alternate feedstocks in the case where a feedstock being utilized becomes unavailable.
- Both the quality and quantity of solid separation can be impacted by the addition of food waste.

### Financial Considerations

Before accepting food waste, it is important to consider how this change can impact the financial viability of the project. Co-digestion will change the amount of biogas produced and may change value of digester products and impact the overall project costs.

- Farms participating in renewable natural gas for transportation may compromise the price of their gas with the addition of food waste. In the case of classification as a renewable fuel, it may alter its Carbon Intensity (CI)<sup>2</sup> score and, therefore, impact project revenue.
- With variable quantity and quality of food waste feedstocks, it is likely to impact the operation of existing AD systems with increased need to monitor and regulate process – changing employment demand for the farm.
- Co-digestion may change the quantity and quality of separated solids.
- Added spreading costs associated with increased digestate should be considered, along with the added storage needed to retain the digestate.
- Tipping fees provide added project revenue. As the biogas production increases from the treatment of these feedstocks, project revenue may also increase.

### Biogas Effects of Adding Food Waste

Farms should be prepared for increased biogas production from adding food waste feedstock to manure influent. Farms should consider how to utilize the variable levels of biogas production that comes from less uniform feedstocks. Consider flares for higher gas production or methods of maintaining equipment when gas production is low. Food waste can also cause variation in the hydrogen sulfide and carbon dioxide levels in biogas, and farms should prepare for variability in gas cleanup needs.

### Conclusion

Farms can have both positive and potentially negative impacts if they participate in a unique opportunity to play a valuable role in the recycling of food waste in NYS.

### Authors

Jennifer S. Bockhahn  
Peter Wright

[jsb466@cornell.edu](mailto:jsb466@cornell.edu)  
[pew2@cornell.edu](mailto:pew2@cornell.edu)

### References

<sup>[1]</sup> NYS Environmental Conservation. “Food Donation and Food Scraps Recycling.” New York Consolidated Laws, Environmental Conservation Law - ENV Title 22 | NY State Senate, [www.nysenate.gov/legislation/laws/ENV/A27T22](http://www.nysenate.gov/legislation/laws/ENV/A27T22).

<sup>(2)</sup> USEPA AgSTAR Project Development Handbook <https://www.epa.gov/sites/production/files/2014-12/documents/agstar-handbook.pdf>.