

Chomp's Circular Solution to Food Waste: On-site Anaerobic Digestion

Monday, 30 October 2023

The escalating issue of food waste has reached a critical juncture, demanding immediate and comprehensive solutions. Current statistics reveal that methane emissions from food waste contribute significantly to greenhouse gas (GHG) emissions. To address this pressing concern, On-site Anaerobic Digestion (AD) has emerged as a game-changer in the battle against food waste and its dire environmental consequences.

Why Food Waste Needs Urgent Attention

It is critical that we reduce food waste to fight climate change. The statistics are alarming: a staggering one-third of the world's food production goes to waste, which translates to over 1.3 billion tons of food wasted each year.

What's even more concerning is that when this discarded food decomposes in landfills, it generates methane – a greenhouse gas that is up to 28 times more potent than carbon dioxide. These methane emissions from food waste contribute significantly to overall GHG emissions, exacerbating climate change.

According to the International Energy Agency, "Methane is responsible for around 30% of the rise in global temperatures since the industrial revolution, and rapid and sustained reductions in methane emissions are key to limit near-term warming and improve air quality."

Anaerobic Digestion: A Time-Tested Solution

Anaerobic digestion, a process that has been used for thousands of years, offers a promising solution to the food waste crisis. This chemical process involves the breakdown of organic materials into biogas, which can be used as a renewable energy source, and digestate, a nutrient-rich fertilizer.

This technology has long proven its efficacy in converting food waste into valuable resources with minimal impact on the environment. Chomp Energy has miniaturized this technology, making it accessible to a wide range of organizations, including supermarkets, university and college campuses, food manufacturing and processing facilities, utilities, and residential communities of 500 to 50,000 people, so that these businesses can start to take responsibility for their food waste and harness the energy it produces.

On-site AD vs. Off-site AD: The Key Distinctions

Chomp's on-site Anaerobic Digestion distinguishes itself from off-site AD by converting food waste into renewable energy right at the source of generation. This approach offers numerous advantages, including:

Availability of Biogas Onsite: Businesses and communities using on-site AD can take advantage of behind the meter biogas and save money on fuel. Biogas can also be used to generate heat or for hot water, or can be converted into electricity for use onsite.

Lower Hauling Emissions and Fees: The elimination of long-distance hauling of food waste reduces transportation-related emissions and expenses and waste hauling fees.

Ownership Leads to More Incentives: Organizations that own and implement on-site AD are eligible for tax incentives and carbon credits that would otherwise have gone to a third party project developer.

Island Spring Organics: A Circular Success Story

Island Spring Organics exemplifies the practicality of Chomp's on-site AD. By implementing on-site Anaerobic Digestion (AD) technology, Island Springs has transformed its tofu production byproduct food waste into valuable resources beneficial to its business and the surrounding Vashon Island community.

Use of Biogas

The biogas produced by the Island Springs digester serves as a renewable energy source. Some of the biogas is conditioned and used by the tofu factory behind the meter for their energy needs. By providing this renewable energy, Chomp is reducing Island Spring's dependency on traditional fossil fuels, contributing to a greener and more sustainable operation. The remaining biogas is used to fuel cars on Vashon Island .

Use of Biofertilizer

The digestate generated during the AD process is a nutrient-rich biofertilizer that can be used to enhance agricultural practices, creating a closed-loop system. The biofertilizer produced through the tofu digestion process at Island Springs is distributed each week among local farms and the truck used for delivery is run on the very biogas produced by the anaerobic digester!

The results? Astonishing crop yields that surpass those achieved with conventional, petrochemical fertilizers. The benefits of this nutrient-rich biofertilizer are undeniable, contributing to healthier soil, enhanced plant growth, and circular, sustainable agricultural practices.