ARE BIODIGESTERS THE NEXT FRONTIER IN FOOD WASTE?

August 9, 2022



By John B. Thomas

Managing our waste streams in ways that don't pollute the planet is a fundamental challenge for New York City and the Coop. New York City sends 4 million tons of waste to landfills every year, a third of which is food waste. This food waste decom-

poses in landfills to produce methane, a potent greenhouse gas that has nearly 80 times the potential to carbon dioxide to contribute to climate change. Methane is also the primary component of natural gas, which still makes up about a third of total U.S. energy consumption. So not only is the methane from food waste bad for our climate, it's also a wasted resource we could be using to create energy. Efforts to limit food waste are critical both to reduce waste and by proxy all of the wasted water, energy and labor that went into the production of unused food; but also a key component in the fight against climate change.

ENTER THE BIODIGESTER

Biodigesters—systems that turn organic waste like food scraps and wastewater into energy and fertilizer—are a technology that may help address the city's food waste problem. Typically composed of a large covered pit buried in the ground, biodigesters use a process called anaerobic digestion to consume organic matter like food waste, producing methane and manure as byproducts. Smaller ones are about the size of a septic tank, typically buried in the ground. Larger industrial-scale biodigesters can take up a similar footprint to a small power plant. But most have large tanks where the process of anaerobic digestions (bio-digestion) takes place. Biodigesters harness the methane that would be lost by food rotting in landfills and offset the need for industrial fertilizers.

Biodigesters are also a passion of Coop member Matthew Landfield, who recently took a course in ecological design after moving to the Hudson Valley during the pandemic and developing a curiosity about how to reduce his home's environmental impact. "In a future where we continue to burn fossil fuels and our waste streams are a net loss, we need to better manage these waste streams and the organic matter they produce as they decompose," he said. "It would be interesting to explore if something like this might be useful to help manage the Coop's waste streams."

Biodigesters are not a new technology. "They are well dialed-in as a technology all over China and Northern Europe," says New York-based biodigester expert Andrew

Faust. Faust teaches a course on urban permaculture online (learn more at www.permaculturenewyork.com; andrew@homebiome.com). Biodigesters have been in use since at least the early 1900s, when Germany built the first biogas-producing wastewater treatment plant. They have since spread to India, China and parts of Asia as cheap sources of cleaner energy and an alternative to wood-burning stoves for cooking, especially in rural areas. To this day, Germany is still the world's largest producer of biogas with an estimated 9,706 biogas plants operating as of 2018—the highest number of biogas plants in any country in the world. Yet smaller scale biodigesters are gaining ground in Asia, where the number of household level units likely vastly exceed Germany's number, with some estimates suggesting 50 million or more household units in China alone.

> EFFORTS TO LIMIT FOOD WASTE ARE A CRITICAL COMPONENT IN THE FIGHT AGAINST CLIMATE CHANGE.

Biodigesters vary significantly in scale, from home-level units that rely on the input of a single or multiple families, to industrial facilities like those at Newtown Creek, with its gleaming silver eggs that have been icons on the East River for decades. They can also operate at an intermediate scale, like the biodigester developed by Magic Hat brewery, where the onsite set-up produces nearly all of the Vermont brewery's daily energy needs.

WHAT DOES THIS MEAN FOR THE COOP?

Could biodigesters be a good solution to help the Coop reuse its food waste to create energy and fertilizer? The short answer is: potentially, but likely only in partnership with our broader community.

When it comes to food waste, the Coop—like most grocery stores in New York City—produces not an insignificant amount of waste. The Coop doesn't have precise da-

ta on our food waste. General Coordinator Elinoar Astrinsky estimates that we fill a 65-gallon drum with discards almost daily during the summer months, and a bit less during the cooler months. Using a very rough estimate, that means the Coop likely produces around 66 tons of food waste annually.[1]



General Coordinator Elinoar Astrinsky

What do we do with that waste? It is hard to imagine a more thoughtful approach more in the cooperative spirit than what we already do. The first thing the Coop does is prevention. With our air conditioning and refrigeration, the cool temperatures at the Coop help to extend the shelf life of our produce. The second is diversion: the Soup Kitchen Committee oversees a daily delivery of food that is slightly bruised but still good to the C.H.I.P.S. food kitchen on 4th Avenue.

When it comes to the unavoidable waste of the Coop, we do three key things. The first is led by the Compost Committee. For more than 20 years, the Coop's Compost Committee comes in daily to collect food waste and then processes it in local commu-

nity garden compost facilities. This food waste then gets turned into compost that becomes fertilizer for the gardens.

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If there is too much food waste for the Compost Committee, the remainder is picked up by a group called BK ROT, New York City’s first community-supported, bike-powered, fossil fuel-free food waste hauling and composting service. The organization provides young people of color who are interested in getting a foothold in the environmental space with jobs hauling residential and commercial organic waste and transforming it into high quality compost. The Coop then sells this compost to members, creating a closed loop of our food waste.

Finally, in the summer months when there is that excess compost due to warmer temperatures, the Coop contracts with a compost hauling service called Mr. T Carting. They take the remaining compost to an industrial composting facility upstate. This remaining portion of our compost—which is not insignificant during summer months—could be converted to a biodigester to keep all of our food loss and waste local, and to maximize the recovery of methane.



A bin ready for compost.

When it comes to energy, the Coop has already done quite a bit to reduce the greenhouse gas emissions associated with our energy use. Currently, the Coop gets its energy from a provider called Constellation Energy. Constellation sells energy to the local utility, Con Edison, and we direct Constellation on what kind of energy to procure. For several years, now the Coop has purchased exclusively wind energy through Constellation to meet our electricity needs.

Beyond wind energy, the Coop has aggressively pursued efforts to improve energy efficiency such as completing an LED retrofit of all our lighting. This last action alone reduced our annual electricity bill by $40,000 at zero cost to the Coop, as we took advantage of a retrofit program offered by Con Edison.

We still use some amount of natural gas to power our ammonia absorption chillers for air-conditioning, and this alone may be reason to explore biodigesters as a way of capturing methane that might otherwise be released to the atmosphere from food

waste. “We are always looking for opportunities to reduce our energy usage,” said Astrinsky.

WHERE DO WE GO FROM HERE?

While the Coop has a sophisticated approach to reducing our greenhouse gas emissions and utilizing our food waste in ways that are good for our community and the planet, biodigesters could play a role to help fully wean the Coop off of fossil fuels. But likely not without cooperation beyond our membership, as a biodigester is a significant undertaking.

Says Faust, “Biodigesters might be something to explore as a community initiative. Could the Coop create a collaborative project in your neighborhood where you work with restaurants and other grocery stores to create community-generated power?” Working at this scale could offer two solutions: the need to reduce food waste in our city, and the need to reduce our reliance on natural gas.

Individual homeowners may also want to consider home-scale biodigesters as a way of reducing their impacts. With a regulatory gray area due to unclear permitting requirements, home biodigesters are technically feasible and in widespread use as a retrofit to septic systems, for example. Landfield has witnessed one of these home biodigesters in action. “They are remarkable to see because all of the things about the processes make absolute logical sense. Human waste produces methane, and methane is a component of the natural gas we get from National Grid.” He continues, “We desperately need ways to better manage these resources, or it will just be one crisis after another.”

John B. Thomas works on the sustainability and social impact team for a purpose-driven apparel company.

[1] Food scraps, solid and liquid fats weigh 412 lbs. in a 55 gallon drum, or 487 lbs. in a 65 gallon drum. Assuming we gather 1 65 gallon drum per day for 6 months of the year, and half of that for the other 6 months, the annual tally comes out to approximately 132,952 lbs. or 66 tons, of food waste per year.

FLASH OF INSPIRATION OR IRRITATION? NEW ‘NEXT MEMBER’ LED SIGN SPARKS CONFUSION

August 9, 2022



By Sara Ivry

There it is, flashing in green neon, affixed to the glass just inside the Coop’s vestibule.

To some, it is reminiscent of neon signs advertising beer at all-night groceries, beckoning thirsty customers who may or may not notice it or even need it as a reminder.

The sign, of course, is not for drinkers or smokers or those in search of Girls! Girls! Girls! It's for Food Coop members. And it reads "NEXT MEMBER," to nudge would-be shoppers waiting in the entrance line that their time has finally, at long last, come.

Maybe you've noticed it only upon walking through the automatic door on your way to show your identification card to the entrance worker. And maybe, like member Alex LaMond, you have been thoroughly cheered by its bright and assertive presence.

> HOW IS A PERSON WAITING IN LINE TO DETERMINE THE INTENTIONALITY OF THE FLASHING? IS IT MEANT FOR THEM, OR LEFT OVER FROM A SUMMONS INTENDED FOR THE PERSON BEFORE THEM?

"I really love it," LaMond said. "I've been a member since '01, so forever, and in the pandemic we were all really freaked out. I've admired the Coop's diligence in holding to safety protocols and mask wearing and the line outside—it was necessary," she said alluding to the blocks-long queue members waited in during the pandemic's earliest months.

At that time "we were all learning together, and it was challenging, anxiety provoking, so I really like the new member sign because it allows you to know, 'Come in.' It takes the guess work out, and it's not on the entrance person to wave their hand."

Others, however, are less charmed by the addition. Some question its utility, as well as its expense.

But at $150, the cost of the sign is negligible, said Membership Coordinator Jason Weiner. He is the one who alit upon the idea for the innovation in early May. "I was

trying to think of ways that we could capture members' attention quicker if they're at the front of the line," he explained.

PHOTO BY JENNIFER MACFARLENE

Like fellow membership coordinators, Weiner said he is “down on the floor all the time, and what I noticed with the entrance desk was the worker was often having an issue of letting the member know they can come inside, sometimes because [the member] couldn’t see through the doors. Sometimes the member was on the phone, not paying attention.”

So, Weiner found SpellBrite, an Elmhurst, Ill.-based company that makes custom LED signs that plug in to regular electrical outlets. He fashioned a hard-wire switch for entrance desk workers to turn the sign on and off at will. When switched on, the light flashes incessantly. If the entrance desk worker neglects to turn it off, the non-stop flashing is at risk of becoming little more than the visual equivalent of ambient noise.

> “SOMETIMES I PLAY WITH IT, AND I TURN IT OFF TO SEE IF ANYONE NOTICES. NOBODY NOTICES.”
>
> *MICHAEL RING, ENTRANCE WORKER*

That was how it struck this shopper on a recent visit. If the sign flashes non-stop even as the line to enter advances, how is a person to determine the intentionality of the flashing? Is it meant for them, or left over from a summons intended for the person before them, or simply evidence of entrance worker forgetfulness?

“The worker has the power to control it,” Weiner said, “so what happens is if there aren’t a lot of people in line, they leave it on. It just flashes.”

In Weiner’s experience, the reception to the sign has been generally positive.

“The amount of times the entrance worker hears people say ‘I love that sign,’ it happens constantly,” he said. “People get excited for new innovations—a nice welcoming sign for the members.”

Michael Ring, an entrance worker who works his own shift as well as that of his wife, agreed that in the first few weeks of the sign's presence, shoppers commented on it. They thought it was cute, he said. But soon it became part of the scenery. They stopped mentioning it.

"Sometimes I play with it, and I turn it off to see if anyone notices," Ring said. "Nobody notices. It's big and gaudy, but nobody notices. It needs to be outside, not inside. People get to the front of the line and they look at their phones. They need a poke with a stick, a honk. An audio announcement of 'Step in' would work better. We need a sign that says, 'Have your card ready and your mask on when you get to the front of the line.' Dude, there's people behind you that want to shop."

Karen Fuller, a member since 2004 who sometimes does entrance desk work as part of her work commitment, seconds Ring's observation that the lure of the phone screen preoccupies members, frequently rendering the sign useless.

"They're not looking up. And you keep flicking the light, or making a motion," but it doesn't register, she said. Moreover, "it's used inconsistently, because people in line, not to mention the entry workers, don't know when to use the sign….and you still have the 'NEXT' board, and you can pick that up. Sometimes you just hand gesture to people and wave them in." She is hopeful perhaps winter's onset will make a difference in the sign's impact. "Maybe it will be better in the darker months," she said. "The sign's light will be more prominent."



Sara Ivry is a freelance writer, editor, and podcaster. A long-time member of the Food Coop, she lives in Clinton Hill.

THE RETURN OF PLOW TO PLATE

August 9, 2022



Safe Food Committee Report

By Adam Rabiner

Well, dear readers, it is great to be back writing to you again after a two-year break about the *Plow to Plate Film Series*. I am here to tell you that *PtP* is back too, although not as you remember it. Our official return takes place this September, but you won't have to come to the small and sometimes cramped second floor room at 782 Union Street to enjoy the show. Rather, you can enjoy *The Pollinators*—"a cinematic journey around the United States following migratory beekeepers and their truckloads of honeybees"—from the comfort of your own, hopefully air-conditioned, home.

We were inspired to bring back *PtP* in this new form by the confluence of several factors. After the world seemed to shut down in 2020, we observed the onset of telework and other ways of connecting via our computers. We also noticed a proof of concept in the Flatbush Food Coop, whose film series carried on, via Zoom, with nary a pause

in their screening schedule. We recognize that the world has changed, and although some face-to-face contact has returned, if Covid endures, which is likely, many members will be wary of attending in person. Finally, our squad was informed by the Coop that the second-floor room has been set aside for other purposes that make further screenings there impossible. All of these factors led us to conclude that we either had to adapt or change circumstances to avoid the end of our squad.

So, several months ago, our committee began to slowly coalesce again. We reached out to one another, tentatively at first, via email and then regularly by Zoom. We asked ourselves: can we viably come back and pull this off? During this time, we lost a key member who had overseen our newsletter and website and so we would have to modify our roles and learn new technologies and ways of interacting with our audiences. Also, as you undoubtedly have noticed, this very publication, on which we strongly rely for film reviews and to get the news out about upcoming events, has radically transformed itself from a print biweekly available on the shopping floor, to an entirely digital newspaper. The last print issue of the *Linewaiters' Gazette* is archived on the website from August 10th, 2021. What would this new format mean for our work and our squad? We are still not entirely sure.

What can you expect moving forward? While we can no longer provide the healthy snacks which everyone loved, you can watch at home with your favorite version of an organic Cheez Doodle. Don't worry, you'll be muted. You will also appreciate that the hard, no-frills bridge chair that you previously sat on has been significantly upgraded to your beloved couch.

We have also made a curatorial decision to screen shorter films. Zoom burnout is a real thing and we really have no intention of competing with Netflix or Amazon Prime. *Plow to Plate* has always been as much about the small but dedicated food-loving community we have created over the years, as it is about the films themselves. Part of what made the community, of course, was meeting in person. But a larger ingredient was the involvement of film makers, directors, producers and others we brought in to explain their work and to answer audience questions. *Plow to Plate*, at its core, is

really about your curiosity and engagement. In that regard, we will continue to bring in the experts and encourage dialogue and Q & A. In fact, by going online, we hope to broaden access to our film series to more attendees since logging in from anywhere is a lot easier than showing up at a particular location. Recognizing tradition, and with no compelling reason to further rock the boat, we will continue to host screenings on the second Tuesday of every month at 7:00 p.m.

There remain a lot of unknowns, but we are so excited to be back. Please look for our review of *The Pollinators* soon in an upcoming issue of the new and improved *Gazette* and please check in with us on Tuesday, September 13th at seven o'clock p.m. for our inaugural virtual screening after our two-year hiatus. We will be providing a link in our soon-to-appear *Gazette* review. Until then, be well.

The Pollinators: Tuesday, September 13th, 2022 7:00 PM, Streaming Via Zoom, Link TBA.

A veteran of the Coop bathroom cleaning squad, Adam Rabiner is a member of the Safe Food Committee where he helped organize the Brooklyn Food Conferences' movie screening and founded the Plow to Plate series.

QUESTION: WHAT'S THE COVID TESTING RULE IN REGARDS TO SHOPPING?

August 9, 2022



Dear Editor,

So, at the Coop, “returning to work while awaiting test results” is an actionable offense? Even if the rapid test was negative?

That might have made sense in the earlier days of COVID, but now that testing is available on almost every corner—including the Coop’s corner—many of us have been testing frequently because of, like Joe Holtz, vague symptoms, or because now that

we’ve gone back to living our lives despite high infection rates it’s inevitable that we fear exposure.

This makes me wonder: have I broken a Coop rule each and every time I’ve been swabbed at the testing truck on Seventh Avenue and then shopped?

Janet Gottlieb