WasteDIVE

Inside Vanguard Renewables, the Northeast's biggest food waste recycler

The company recently opened its latest farm-based anaerobic digester, with more on the way. CEO John Hanselman explains why his business works where others have failed.

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Up a steep dirt road in Haverhill, Massachusetts, past a set of old farm buildings, sits one of the newest anaerobic digesters in the country. It's the fourth facility of its kind from Vanguard Renewables, with many more on the way.

On a bright and brisk December afternoon, a tanker truck has pulled up to empty its liquefied organic contents into the underground receiving pit. The system can process up to 120 tons per day, but it will take multiple days for the slurry to actually make it into the adjacent digester domes.

First, it will be held in a 15-foot-deep tank and screened for contaminants, adjusted for acidity and "blended" before getting fed into the system. Keeping the colony of methnoagenic bugs that feast on it even-keeled is key to the operation's success — a crash could result in extended downtime.

Credit: Cole Rosengren

Walking around the site, you can barely perceive odors — and that's by design. Following the expensive downfalls of other sites around the country, Vanguard has taken extra precautions.

“We may be overzealous, but you can’t underestimate the impact of food waste," said CEO John Hanselman.

It also helps that Vanguard's "farm-powered" model is designed to come with automatic community benefits. While Hanselman said the six-year-old company's original plan was to focus on energy production, their scope has since expanded to include much more.

A small adjacent building contains a 1 MW engine capable of generating up to 7,700 MWh of electricity per year from the resulting methane. In addition to a 20-year power purchase agreement with the city of Haverhill, Vanguard is providing free heat to the multigenerational family business — Crescent Farms — that hosts it on their land. The AD facility also handles all of their manure, creates enough liquid fertilizer for them to swear off synthetic material entirely and makes an animal bedding byproduct that has reportedly led to higher quality milk yields among the cows.

Vanguard was named "Organics Recycler of the Year" by the NWRA in 2018 and enjoys growing regional recognition. However, it still has a relatively low profile on the national scale — something sure to change once the company opens a new digester

in Vermont, three more in Massachusetts, three in New York and five de-packaging facilities throughout the Northeast.

Following the tour, Waste Dive sat down with Hanselman to discuss expansion plans, his outlook on industry competition and how Vanguard's approach fits into broader national trends.

The following interview has been edited for brevity and annotated for context.

WASTE DIVE: There has been growing interest from companies and municipalities in co-digestion at wastewater treatment plants as a solution for urban areas. You're not interested in expanding in that direction?

Mike Davidowicz, owner of Crescent Farms, and John Hanselman, CEO of Vanguard Renewables
Credit: Vanguard Renewables

JOHN HANSELMAN: No. It's very attractive at the outset, because there's all the infrastructure there for handling the inbound food waste, for handling the effluent as it comes out of the process.

The problem is that as attractive as that all looks, you end up really producing something that doesn't benefit the wastewater treatment plant. The primary function

of the taxpayer's money is to create clean water and we're sending stuff there that is not clean water, so there's a dynamic tension that builds.

That's resolved usually either by increasing the tip fee for the effluent going into the system or reducing the amount of effluent that can go into the system — and either one of those outcomes is severely detrimental to the digester. Whereas we have this great symbiotic relationship with the farm, and the more we produce the better. Also, we think what a terrible waste all that great fertilizer is getting flushed through and blown out into the local water system.

Co-digestion has been eyed as an option by large cities with limited space and is currently being utilized in the Boston area. The city of Cambridge says this enabled it to expand curbside organics collection, while detractors cite environmental concerns. Hanselman notes his Haverhill facility is a similar distance from Boston and offers competitive tip fees for clean material.

Hanselman said he'll be closely watching how much activity happens on farms over the coming years — especially in the Northeast, where multiple states and cities have regulatory requirements to keep organics from getting disposed. This is why Vanguard is pursuing multiple projects in the region, including near New York City, which he calls "the holy grail of food waste right now."

Is Vanguard mainly interested in markets with regulatory drivers or incentives?

Hanselman explains that that's not always the case, citing inflated energy credit values in California's Low Carbon Fuel Standard system that he believes aren't sustainable and could prove risky for investors.

So we said, "Let's stick with the basics. New York is great. We know we can sell power at a reasonable price. We know there's a ton of food waste, let's go there." Philly, same thing. Our model is to keep moving with our customers and moving with folks across the Eastern seaboard.

There are parts of the south that as we apply our metrics look really interesting. There are parts of Florida that are really interesting.

Moving into a discussion about the competitive landscape, Hanselman said he's hard pressed to think of other food waste recycling companies at such a scale. Multiple projects have hit roadblocks in recent years, some closing entirely, and made the prospect of investing in capital-intensive AD projects less appealing.

HANSELMAN: It's a very small community, and I think it's proved to be pretty dangerous terrain to traverse for a lot of people. We've taken a really, really heavy data-driven approach. We've had to deconstruct every component of the life-cycle of the food waste. And that's been hard learning, but I think puts us in a position where we can now look at a new opportunity [and] say, knowing what our inbound cost is,

knowing what a local tipping fee is, knowing what a local energy rate is, can we make a viable project?

Credit: Vanguard Renewables

Larger, vertically integrated companies that own landfills have sought to downplay growth potential for AD and similar projects. Do you see yourself as competing with them or taking a broader approach?

HANSELMAN: We're a perpetual landfill for organics. We don't fill up and we want to have the same [expectations], which is if you pull up to our gate, we want you to come in — as long as you meet our quality standards. And we're pretty fiendish about that — knowing where it came from, what's in the load — and we inspect everything.

But if you meet those criteria, we're agnostic ... We want to be the end destination for any hauler in a marketplace, because we don't have, and nor do we ever want to run, trucks at a level where you would have to be able to do it. That's not our business. We have a couple for special [situations], but we really don't want to be in the hauling business. There are a lot of guys who are really good at that. Not us.

But however many years down the line, when Vanguard has more facilities, you'll start to take more of the market share and you do become a competition with the landfills in a way, right?

HANSELMAN: I think for any one of these guys, when they look at it and they say 40% of the weight in any given load is organics, and say half of that's recoverable and could go into recycling, you're just extending the life on what is a pretty heavily burdened system already. So diverting tons, as long as we can make it successful for them from a margin standpoint, I don't think we're competition.

When asked about the argument that landfills with gas capture systems are comparable to AD, Hanselman says that's still an "inefficient" option because some methane is bound to escape — whereas Vanguard is consistently capturing all of that methane, "24 hours a day, 365 days a year." But by positioning themselves as a service option, rather than a hauling competitor, he doesn't see a conflict.

We always want to be just another destination that's in your quiver when you're looking at your customer and saying, "Okay, my cardboard is going to go here, my plastic is going to go here, my organics are going to come here and my trash is going to go here."

So if you don't want any part of the hauling, is it fair to say you're agnostic about where the material is coming from and how it's getting collected?

HANSELMAN: Our pricing model gets pretty simple, which is clean stuff comes in cheapest. We'll take it up to a certain level and then we have to send it off to de-pack or trash.

The key is just a consistency and cleanliness ... You tell us how it's going to come to us, and we'll build the appropriate handling structure for it.

The really, really neat thing out of our six years of toiling here is that food waste recycling works. And I think there's been a lot of folks in the industry that have said, "Well it doesn't. It's either a hobby or really it's not economic." And the answer is that's not true. You can make it work, and we did — and we're profitable and we're growing. And that, to me, is the most important message to the industry.

It takes a lot of concentration. It takes a lot of very specific learning, but it's totally scalable and it's totally doable. We're going to do it in the marketplaces where it's most exciting for us from a revenue standpoint. But you can really do this anywhere.

Then how come others aren't?

HANSELMAN: I think too many times people have tried to go into it without really doing the planning upfront. And that's not supposed to be self-congratulatory, because we've got an enormous amount of scar tissue. We were really lucky. We

have four family offices who are our investors. These are billionaire families [that are] committed to stopping climate change, and they've been exceedingly patient. Picking the right capital choice for us was really important. A traditional venture investor, I think, would have been extremely challenged by our growth profile and by our learning process.

I spent 10 years doing solar before I came to this, and solar is cool. You apply capital — boom! You make a lot of money ... Wind has been much slower to come to the market, but it's the same thing. You apply capital, you plug a bunch of stuff together, and you've got a huge industry. Food waste doesn't scale that way. You have to really spend time in the marketplace. You've got to build the relationships with the haulers. You've got to prove to everybody that you're not competitive.

Is that slower growth profile the reason we haven't seen, for example, talk of a publicly-traded food waste company?

HANSELMAN: I think it will take minimum four or five years for anybody to kind of get to the scale where you could be a publicly-traded.

There have been so many bad examples ... When we first started raising our capital, I went around to all my energy investor friends from the solar world who had invested in wind and solar and geothermal and hydro, and I said, "I've got this great thing, anaerobic digestion, it's happening all over Europe." And they almost uniformly threw me out of their office. They were like, "Absolutely not. We won't touch that stuff." There's been millions, hundreds of millions, of dollars of lost. [Failed digesters] give the industry a real black eye.

The other thing that we would love to do over time is make this an investable asset class. We want to be able to prove that there's a business model that works, and that it's not spooky — it's just hard. It's not impossible. It just takes an awful lot of planning and some really good execution. And I think that's different than what people have thought about anaerobic digesters in the past.

Credit: Vanguard Renewables

The discussion turns to the complexities of federal tax credits, which were once a boon and have now impacted the business model in their absence. Hanselman laments how federal tax credits for renewable energy projects dropped AD after 2016. While intrigued by the new Farm Bill's incentives, Hanselman doesn't see anything comparable to make up for that loss.

You mentioned how the investors care about climate change, and that's a reason they're committed. As climate reports become more dire, do you see that making it any easier to press your case?

HANSELMAN: No. So, I've been in the environmental and then renewable energy business since 2002, and there is a very small portion of America that is committed to reducing climate change. What drives climate change reduction? The reason that the families invested in us, and the reason we started it, is you need good business solutions.

We're all closet greenies, and this is what we live to do — but what we've said is if you have a strong business case, people will adopt. If you're preying on guilt and fear and the green drivers, you get a very small adoption curve.

There are exceptions, there are wonderful exceptions ... but I think the vast majority of America is just trying to make sure that they have a job tomorrow and that they can get home to a warm house at night. What we said is, let's build a really efficient carbon reduction business, but do it where anybody walking in would want to be part of that process, because it saves them money, saves the planet.

What's next for Vanguard?

HANSELMAN: We're really, really excited about the potential for large-scale food waste recovery in the states. I think it's something that is entirely possible, and I think that the more that we can show folks that this is a doable enterprise, the more participation you'll get.

[This] year, we're spending a lot of time and energy on education and informing the population that this is something that really can happen at any level. I think a lot of people don't think that and have never heard of food waste recycling. They're like, "Really? I can take my old cheeseburger and turn it into renewable natural gas? Okay. I'm in." Then the less they understand that there are a lot of bugs involved to do it, the better. Keep it simple.