

Relationship with a Utility

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One of the most important things, most important parts of the digester business, is your relationship with your utility. We've been around a while and worked with a lot of utilities, so we have a good amount of experience. I'm going to address three aspects.

The first is about the utility and the project and then I have a section in here for utilities. I know that Energy Northwest is here. I've thrown it in in case there are other utilities to talk about, benefits to them, because a lot of the things that are available are issues that could be mutually beneficial, all depending upon the attitude and the appreciation of the utility.

One of the first thing that a lot of people really don't start out with is an appreciation, and I'm going to review from this morning. If you have cows, sows, nursing pigs and finishers which really don't apply here, you're going to be able to make somewhere between 2.5 and 3.7 kilowatt hours per cow per day if you can get all the manure. Now in a typical modern dairy farm, that should take care of everything you need on the place. Therefore you'll be in excess and have an opportunity to export or sell to the utility. So that puts you in business with them. We always recommend that our owners operate in what's called "in parallel." This parallel means that you are hooked on the line with the utility, sharing the line, operating at the same phase and frequency so that the power use and the power produced interface seamlessly. If you're producing on your side of the meter, you're pumping in for your own use and you supply your own use first and nothing comes on. If your engine drops off, there is no need to reconnect the utility; the power you need just flows on. It's similar to a water system with two wells feeding it. Depending on where the use is, more water comes from one side or the other or, in this case, more electricity comes from one side versus the other.

We feel the utilities are important because it's an actual cash money flow that you can quantify. You know how much money you can make and save because you know how much you spend on electricity, so it's an actual quantifiable commodity.

Something that's often talked about, utilities being deregulated and that's great. Multiple sources of power, that's great. But unlike the telephone company, there's still only one set of wires that runs in front of your place, and that means you're going to deal with the utility who feeds you. That's the only way in and the only way out for power. You can't pick up your cell phone and dial in electricity because it's not going to happen. Regardless of whatever laws there

are, tariffs, requirements, you can say, "This is a great idea," if a particular utility, due to their official position, decides it's a great idea in spite of the fact that we sell everybody power for two cents, they'll find a way. We put in a project in Minnesota where the local rural electric cooperative bought all the power from Haubenschild Dairy at more than the dairy would have paid for the power. The utility turned around, put it in a green package, marked it up and resold it to the public at a profit. Everybody won. Conversely, if they decide they really don't want to deal with you, they'll find a way. New York power is 12 cents, California power is 11 cents. You'd think we'd be going crazy. Well, we're going crazy mainly because of the number of iterations we have to go through with utilities.

On any dairy digester project, the utility has two areas in which they can affect you. The utility pretty much controls these, and you will have to agree. The first is signing a contract with them. The contract can say, "Okay, I agree to produce power, I agree to be safe, I agree to abide by your rules and pay for everything, provide the insurance for everything, build everything, pay maintenance costs," and this is all just typical business, it's not a big deal. The other area is the physical inter-tie, and there's quite a bit of debate on equipment used to inter-tie. Now, there are IEEE standards, national standards, that can be followed; however, there are also a thousand utilities and each of the thousand utilities has an opportunity to name their own standard. So this is important because it can affect the cost and the time to implement.

One of my great stories is from Pennsylvania. We were going to put a generator set in there and everything was agreed to and all the equipment was there and the inter-tie panel was there and the engine was there and all the money was spent. The utility inspector walks in and says, "Oh, this will never do. We have to have a red-green switch." I went, "Hello, what's a red-green switch?" We'd been through the whole process, through the utility engineers, through the utility departments, had everything signed off on, and it turns out there is some red-green switch that this guy had to have. We researched it further and said, "Okay, we'll just buy one" because it was a simple disconnect switch, either on or off. But that was what their linemen were used to and somehow that did not make it from the construction department over to the utility engineering department. Further, we found out it was a switch made only in Puerto Rico in November and we had already missed the season. We could have waited a year. We worked it out, it turned out they found one on the shelf and put it in for us. But these are real issues that

you run into. Something like that they could have used as a hammer on us. But we just went, "We thought we'd done everything, you'd approved everything," and the switch appeared.

Other things can happen in your routine interface with a utility. Our company generally handles this, not the farmer. It requires electrical engineering submittals, negotiations for settings, particular types of equipment that deal just with the utility. It effects the project in that, depending on what is required, there is man time, equipment, man time cost, equipment cost. There are delays due to reviews or referrals for reviews, or referral to referral to review, or the third time around on the same thing, which we had happen. This can add to the project completion time which becomes a concern because of the level of investment. In concluding this section, we can say that the utility can either enable or prevent a green energy project, and it's all attitude. There's nothing technical about it.

We'd like to say that we think digesters are a win-win type of investment. For a utility, we'd like to think that this would attract customers and result in retaining customers because, if a digester can solve a problem that keeps a dairy in a community and the means to pay for that is power, well, you keep the dairy in the community, and there's a consumer. And you provide some support to the grid. One thing that you have to consider is that every 100 cows supports a family, so if the dairy is there, you can pretty much chalk up one family per 100 cows as staying. So if you lose the dairy, you lose the number of cows divided by 100 in terms of families, or they have to find something else to do.

We all know that there is no way that a dairy digester or 800 dairy digesters would ever put a utility out of business. What we showed in the earlier slide is maybe we'll have a little extra, but a dairy in this climate can't even provide enough energy on a year-round basis to do its irrigation. What it can be is a supplement, it can be line support, and it can maintain economic viability for dairies in the area.

One other thing, if you're here you're interested in digesters, but there are more producers not here than are here and we know from talking around that not everyone is going to put in a digester. So even if you look at the entire State of Washington and all 800 producers, should utilities be concerned that maybe 200 put in digesters? How is that going to affect utility balance? It really won't hurt the utilities if this were to happen.

I got ahead of myself when I was talking. One of the greatest fears of many utilities is that there is a revenue loss. This is an attitude that is prevalent in California. Our utilities went

bankrupt, so they're counting all their pennies and they were sure the dairy industry was going to harm them economically. With the five digesters we've put in in the last two years, none of them have gone out of business. As a matter of fact, most of them came out of bankruptcy, so we must be helping. As I said before, the benefits of the dairy in the local economy are profound. In many places, they support the local economy, especially when there is a large concentration of dairymen. And you start to lose that, you start to lose the infrastructure, and you start to lose lots of business in the area.

We like to point out to utilities that digesters are safe and reliable. As a matter of fact, if a digester engine generator runs 80% of the time, it's probably pretty poorly run. Most of ours are running 90+% of the time. An average operator will make 80%. If the guy is not really paying attention, just once in a while making sure the engine is still there, he'll run 80%. And that's over the long term. Langendorf's run in the low 90-percents for about 23 years. And your down time is for maintenance, oil change, and the occasional (once every 5 years when you're down 10 days because you're rebuilding the engine).

We did a comparison, a funny story when we were in California during our energy crisis. Our little 350-cow digester got a phone call every afternoon during the middle of that crisis when Diablo Canyon was down and half of Moss Landing was down and a third of the power in the power production state was off, because he was on the distributed power list. They were calling up every afternoon—"are you going to be on today?" Here's Leo Langendorf saying, "Yep, I'm replacing the nuclear power plant."

Our job is to work with the utilities and convince them that our equipment is safe, meets the IEEE standards. As far as deployment, it can take 4 to 8 months from the time an engine is ordered until the time it is operating, depending mainly on utility inter-tie issues. Delivery of an engine takes about 16 weeks with generator and controls.

Other issues for utilities—we're not going to compete for fuel source and we're adding capacity to their side, to their system, without their investment. Again, this is more for utilities—we've worked out in the country at the end of long lines and many times we've been complimented, "You've put your digester in, you stabilized this feeder." If you're in the dairy business and there's another dairyman down the road, you're all on the same feeder and everybody milks at the same time. You tend to have a little low voltage late in the afternoon and

then a little high voltage early in the morning. Having a digester on the system helps with voltage support and voltage regulation.

When utilities consider investment in changing the amount of substations, transformers, tap settings, digesters can be a help to reduce their investment in having to upgrade. I did mention before, a digester could mean to the utility a new product to sell. In Wisconsin, Lion Energy was putting in some engine generator sets and it was an experimental system. They were actually taking the digester gas and making electricity out of it. I think they've passed on that program now, or are they still owning and operating? They're still in the studying phase.

As we've heard, there's a market for green power. There's a market for greenhouse gas credits. Access to that market is a problem. It will become clearer. As I mentioned earlier, I believe that the best way to deal with the greenhouse credits is through the utility. The utility has the most use for them and, since you're directly working with them, passing it to them would be a great idea.

If we were in the East, we'd be talking a little bit more about the acid rain program. It's a small possible benefit. If you're in Pennsylvania or New York and you're producing power, you get credit for your power produced because you're using biogas instead of coal to make power, thereby reducing the amount of coal used and reducing the amount of acid in the air and acid rain. It's a long stretch but it works.

The point of my discussion here is that utility can either enable or prevent alternative energy projects. I have these points written up and you can get a copy from me. There's a list of things that we've run into that utilities do to encourage this, and this is how we can tell in our experience that they really want us there. They'll pay a fair price. They'll have a fixed set of inter-tie standards.

I just heard today that Washington is trying to adopt a statewide standard, which means that there are not statewide standards, which means that, as Steve said, every time you cross a street you might have a different piece of equipment or different philosophy of equipment to deal with. If standards exist, if they're fixed, if they're based on real-world operations, your utility is working with you. If they already have a standard contract, it's a very large project delay if you have to go through and work with a new contract or develop a contract or negotiate a contract.

Phil Lusk said, "Why don't you tell the story about NYSEG in New York?" Well, we put in a project at Double A Dairy. I ended up on the phone with a Wall Street law firm for NYSEG,

who knew nothing about small power producers, but they were trying to negotiate a contract to hook a 500-cow dairy up. It was sort of ridiculous at the time. They didn't have a standard contract, so we had to lead them to one. I used a Pacific Gas and Electric contract.

I would mention that utilities can use tariffs to reward. They can also be reasonable or unreasonable. The State of Pennsylvania is still trying to charge \$250 per month to come read your meter because you're a producer, even though they read meters every month. And it's the same meter, same type of meter.

Another example is capacity charges. In California there are no capacity charges for standby if you're running. If you're in North Carolina, your capacity charges or down time, if you're down for more than 15 minutes, are equal to approximately your monthly bill. This means you can make all your electricity as long as you pay them the same amount you always pay them. Needless to say, there aren't many digesters in North Carolina. This is just the flip side of everything I've already said. We're seeing a lot more cooperation on the utility side.

Pennsylvania has changed their rules; New York changed to retail net metering, which means if you make the power, you keep all the value of the power. If it goes off the site, they're going to pay you the wholesale rate, which is actually a fair deal. That's what they pay everybody else. By allowing you to offset on site, it's a good deal for you because the rates are 12 cents a kilowatt hour when all the services are bundled and unbundled the electricity is worth only 4 cents. So if you make it, keep it on the farm, it's worth 12; if you sell it off, it's worth 4. That actually is a very good deal for an owner.

And this is probably a little misplaced. This is where we've been in the recent past with utilities. One of the greatest problems that you have is if you don't have anything standard and you have to negotiate everything. It can take a heck of a long time to get hooked up, whereas if you're working with someone who wants you to be there, it's very simple. The difference between these two control systems or any of these control systems is nothing. They're all using the same equipment, the same theory of control. There might be a 2-cycle or 1/30th of a second difference in some of the trip settings, but that's immaterial. It's the same piece of equipment. In the future as we do more and more, we'd like to see more Sylkos, more Bencos, more Edisons, more Wisconsin Public Services, and less Niagara Mohawks.