



# Is a digester right for your farm?

**MARK MOSER** is an engineer who has worked with 40 digester start-ups in the U.S. and other countries, including Chile. Based in California, his company, RCM Digesters, is regarded as one of the market leaders in implementing this technology. He has developed a scoring sheet to guide farm owners thinking about a digester and sees these characteristics of successful projects.

✓ **Design**

“One of the biggest problems with digesters that haven’t worked have been poor design. It’s the difference between knowing what you’re doing and hoping you know what you’re doing,” says Moser. “You just have to make a thousand decisions, and each one has to be right. If one of them is wrong, it’s not going to work.”

✓ **Equipment**

“The next major cause of digester failures would be inappropriate or wrong equipment. You don’t want to have to understand equipment that’s outside of what you normally do. If you put in a Caterpillar or a Ford engine, there’s a mechanic under every tree for those, he says. “Microturbines are something that’s unusual, and the owner has to learn everything about it. The key to success is keeping the generator running — it’s got to be easy.”

✓ **Farm layout**

“The digester needs to fit within the farm operation as opposed to being graphed on. Changing your farm to fit a digester is sometimes not a successful approach,” says the digester specialist. “We spend a lot of time working with owners to make sure it fits — even fitting in the daily traffic plan. If you put the digester out back, it tends to be forgotten. Not that it needs much work, but it’s like anything else, you need to keep an eye on it.”

✓ **Serviceability**

“In the long run, you need to know that there is someone who can support the digester. If something breaks, and something always does because it’s equipment, where do you get the replacement parts or equipment? The service ability of the unit is another key item for success.”

✓ **Transition period**

“It takes about three months from the time you first put manure in until an owner is trained,” he comments. “The digester takes between five and six weeks to start up. While we are training, the owner needs to ask a lot of questions — how this works, where that is, what this means, what that means? Invest time like you would for a new milking system.”

✓ **Time**

“What I will tell everybody is reserve an hour a day. Get somebody at your place to look at the digester. If you have a digester, you’re going to need to check the temperature, look at the engine room, see if it has oil and water, and so forth. If you notice a reading isn’t what it should be, find the problem and fix it.”

✓ **Herd size**

“In my opinion, it takes a farm that is 400 cows or larger,” says Moser. “At that size, you’re going to have an extra hour a day because you have enough staff. Whereas, on a farm that is smaller, you might need a few extra hours a day because you’re running tight on time.”

✓ **Other uses**

“Our best digesters are doing more than just saving electricity. There are opportunities to sell digested solids to local gardeners. Other farms use the heat for the house, parlor, and the water. The best digesters fit the farm, fit the site, and fit the owner.”

“In the end, the digester is just something you manage. A digester is not going to save anybody. It’s not a magic bullet. It’s another profit center,” he says. “If you think about it that way, and you devote the appropriate amount of time to it, you will be happy with the results.”

Weighted issues				Weight	Score
(Select the best description, place corresponding weight value in the selection column, add selection values, compare with guideline interpretation below)					
Why install a digester?	“A good idea”			1	
	Environmental concerns			3	
	Financial benefit			6	
	Holsteins				
Animal numbers	<300			1	
	300-500			3	
	500-1000			6	
	>1000			8	
Electric rate	<\$0.05			1	
Actual/kWh	\$0.05-\$0.06			3	
Charge	\$0.06-\$0.07			6	
	>\$0.07			8	
Floor heating	In use in the production areas (and parlor holding area)			10	
Fuel rate, average	<\$0.50/gal. propane	<\$3.00/1000 cu.ft. natural gas		1	
	\$0.50-\$0.75/gal. propane	\$3.00-\$4.00 cu.ft. natural gas		2	
	\$0.75-\$1.00/gal. propane	\$4.00-\$5.00 cu.ft. natural gas		4	
	>\$1.00/gal. propane	>\$5.00/cu.ft. natural gas		6	
Use depreciation on taxes	No			0	
	Partial			3	
	Entirely			8	
Score					

Interpretation: 0-20 = success questionable; 21-35 = success possible; 35-46 = greatest chance of success