

Question Responses to Docket 5-EI-148 from Green Valley Dairy, Krakow, Wisconsin

Green Valley Dairy built an anaerobic digester in 2005. The system is a European based design with 605 kw of generating capacity. Green Valley Dairy has maintained detailed records to support the answers submitted.

Answers to questions as numbered below:

3d. Based on our own experience with anaerobic digestion: Our original system was sized for 500 kw and 2500 cows, digesting manure only. Our cost was \$2.3 million, operating and maintenance costs have been \$9000 per month. After some additional work and approximately \$60,000, we have experienced output of 550 kw net at 91% availability.

A second phase has been built to accommodate another 1100 cows. Sized at 600 kw at a cost of \$1.4 million, it is too early to quote total availability.

4d. Based on our experience: We can produce 550 kw net at 91% availability. We will get 20,000 hours on our engine top end, and 60,000 hours on the bottom end. Our digester should last at least 20 years with normal O&M. Expect engine rebuild cost of \$20,000 for top end and \$75,000 for bottom end.

5a. A primary purpose of the ART policy should be to advance the state of renewable technologies. We have seen significant advances at our site by taking technology developed in Europe to the next step. Advances that would not have been made except for grants and reasonable buy back rates which make the payback at least tolerable. At the same time, we have significantly reduced green house gases, made dairy more neighbor friendly in Wisconsin, and decreased our dependence on oil.

5b. The ART policy must continue at least another 10 years to see where this technology can take us. These advancements take time as these projects have relatively long paybacks (average 7 years in our case).

5c. To be effective the Commission should establish ART's for all utilities because by nature, many of the opportunities for anaerobic digestion are in rural areas which are serviced by all types of utilities.

5d. If ARP's are going to have a real impact, renewables must be developed at every possible opportunity. Much of the innovation will occur through the small customer. If we make decisions on this based purely on least cost, innovation and development will be greatly hampered. Factors including availability, capacity vs. energy, and required infrastructure must be considered in any ART.

5e. I believe that the best mechanism for greenhouse gas reduction is through credit trading mechanisms. Utilities can and should compliment the process, as it seems that states have taken the role the federal government should have in taking the concept forward. So, yes, the small customer is the one that will help. The utilities must act, as they will make the largest difference. Until the federal government moves forward, the states will have to take the lead.

6a. The ART should target new “capacity” primarily. New “generation” second, and third, support existing generation so that we can continue progress.

6c. We believe a forecast IS a plan, all are wrong to some degree, but far better to have a plan than none at all.

6d. Based on our experience, focus programs and ART programs could be independent without conflict.

7b. We strongly believe and have seen the effect of ART on the use of fossil fuels and believe it complements agriculture in Wisconsin. We need agriculture in Wisconsin and the ART policy can compliment sustainable agriculture here. During periods of depressed milk prices, electric revenue has been our only cash flow.

7c. Utilities should definitely allow their customers to purchase specific generation. It is by far our best indicator of public perception and favorability of different sources.

8. ART pricing would ideally be a seller’s choice of fixed price or fixed premium. This would help in financing, and if priced properly, should make the utility indifferent.

9c. If size limits are imposed, they must be on a first come, first served basis to allow the market to function.

10a. ART should further technologies to limit our dependence on fossil fuels as well as future capacity investments. So ART should take into account technologies promised to further these goals. Hydro, being a finite source, should have little sway,

12a. Contract duration for anaerobic digestion should be offered to 10 years, as this seems to be necessary to secure financing.

13a. It seems we all have a stake in the benefits from ART—so all rate payers should contribute.

14b. ART’s must treat REC credits and methane credits separately—the REC credits

15b. ART pricing dependent on project size makes a lot of sense because there are economies of scale in anaerobic digestion projects. However, Europe does have price breaks for project size and developers simply size accordingly, so it’s two edged sword. We probably are forced with living with inequalities to keep it simple.

15c. ART payments should have a capacity component—otherwise, how can we ever promote alternative energy properly? Energy without capacity is of far less value than capacity with ie.what’s the cost to a utility to build capacity?

15d. You cannot dictate payment based on the generator’s profit very well. Who’s to determine the true costs of the project? Our utility was concerned more in making sure that we had a poor return than what they paid for the energy.

15e. It makes all the sense in the world to base rates on time of use. All other electric purchases are time of use based, so why not in this case? It is far easier to administer the contract, the generator is rewarded for producing when the energy is most in demand, so in effect, it’s self-policing.

15h. Why not index price changes to the retail rate of the utility with limits on the annual changes? This would be much like other contracts where interest is tied to LIBOR or prime with annual changes limited to not more than 3%.

15i. To make financing feasible ART prices must stay predictable to compliment amortization of loans.

15j. In our case, we made the decision to go ahead with the project based on electric revenue. Any other benefits are nice, but do not pay any bills.