



TECHNOLOGY PROVIDER
TECHNOLOGY INFORMATION
REQUEST

Technology/Service:	DMT Clear Gas Solutions LLC	
Information by:	Carborex and Sulfurex	Date: 2/8/16

COMPANY INFORMATION

Company Name:	DMT Clear Gas Solutions LLC		
Phone:	503-438-4913	Web Site:	www.dmt-cgs.com
Address:	19125 SW 125th CT	State:	OR
City:	Tualatin	Zip Code:	97062

TECHNICAL CONTACT

Name:	Robert Lems
Phone:	971-336-2963
Email:	rlems@dmt-cgs.com
Address:	Same as above
City:	
State:	
Zip Code:	

DEMONSTRATION SITE CONTACT

Site Name:	N/A
Contact:	
Title:	
Phone:	
Email:	
Address:	
City:	
State:	
Zip Code:	

INITIAL TECHNOLOGY OVERVIEW

This information is to guide in the development of a more specific and detailed Technology Information Request. Please answer the following questions for each Technology or Service provided.

What is the name of the technology or service you provide?

Carborex and Sulfurex

Describe how this technology is used in a larger Nutrient Management System. Please be as detailed as possible.

If a digester or lagoon is used in the Nutrient waste management, then there will be biogas. We can clean up the biogas before using it into boilers, gas engines or into the gas grid.

How many systems do you have installed on dairy farms or other livestock operations?

	Number of Sites	Size of Installations
Dairy	15	
Pork		
Poultry		

Do you have a preferred region or area for the location of projects?

No

Location of farm(s)?

Mostly Europe

What's the smallest and largest farm using your system?

In biogas flow rates 50SCFM-2000SCFM

Input and output of your unit/system – do you have a mass balance analysis?

If a mass balance is available, please attach or include as a separate document.

Yes, project specific:
H2S is removed for 99%
CO2 is removed for >95%
CH4 recovery is achievable up to 99.5%

Input material description/characteristics:

For example: raw manure, digestate, screened digestate, suitable non-farm feedstocks, other.

Biogas

Does the technology treat the full manure stream for a farm or a fraction of the stream?

Only biogas

Do you consider this a mature system or ongoing farm development?

Mature with on-going development of systems.

Any weather constraints? Yes No *Please describe.*

Any bedding constraints? Yes No *Please describe.*

Output materials description and characteristics:

Please include the % of the total stream for each material, i.e. 10% fiber and 90% screened liquid by weight.

Free of H₂S and CO₂

Do the Outputs of the process have a resale market identified? Yes No

If so under what brand name or who is the contract with?

Is this process scalable and to what extent (top and bottom limits)? *Please describe.*

50-3000 SCFM

Do you have a known scaling factor? *Please describe.*

No

Does this technology require any air input? Yes No

What is the preferred air connection? *For example: psi, fitting size, air quality.
If not distributed by the system please list each connected device.*

N/A

Does this technology require any water input? Yes No *If so, please describe.*

What is the preferred water connection? *For example: psi, fitting size, water quality, gpm.
If not distributed by the system please list each connected device.*

N/A

Does this technology require any electrical input? Yes No *If so, please describe.*

What is the preferred electrical connection? *For example: phase #, voltage, full load amps.
If not distributed by the system, please list each connected device.*

Depends on project. Typically high voltage (460V) preferred. US standards.

Does this technology require any mechanical input? Yes No *If so, please describe.*

What is the preferred mechanical connection? *For example: horsepower, connection, rpms.
If not distributed by the system please list each connected device.*

N/A

Does this technology require any special plumbing? Yes No *Please describe what is required.*

Does this system require and special foundations or pads? Yes No *If so, please describe.*

Flat concrete pad

Do you consider this technology part of a larger system that you provide? Yes No *If so, please describe.*

Yes it should be installed between a lagoon/digester and a CHP, boiler, gasengineer or gas grid.

Does your system require any other components that you do not provide or are not included in your proposal?

Yes No *If so, please describe.*

How is the system delivered to the site? *For example: skid mounted, assembled on site, constructed on site.*

Skid or container

Is this system portable or configured in such a way that it could be easily transported for use in several locations?

Yes No *Please describe.*

Has your technology been accepted by the NRCS and is it included into a practice standard? Yes No

Describe if necessary.

We follow North American certifications.

Are there any unusable or hazardous byproducts of this process? Yes No

If so, please describe the product and recommended means of disposal.

Only CO2 can be vented to atmosphere.

What spare parts and redundant components are included with the system?

Client specific

How is the system controlled and what are the components and capabilities of the control system?

Allen Bradley PLC and SCADA

What is the usable life of the system?

+/- 20 years

What is the salvage value at the end of the usable life?

5-10% of the investment

What is the educational and technical level of competence for the operation of the system?

Low skilled mechanical worker

What level of maintenance is required for the system?

Please indicate if rebuilds or major components must be replaced and what the frequency is for these components.

Oil and filter changes.

Are consumables used in the process? Yes No

Please provide the nature and purchase relationship for these consumables. For example: proprietary, special contract, generally available.

Oil for lubrication
Carbon and/or other filters depending on project

Which of these NRCS codes would your technology be classified under? Check all that apply. Add if necessary.

CODE	NRCS DESCRIPTION	APPLIES
472	Access Control	
560	Access Road	
309	Agrichemical Handling	
371	Air Filtration and Scrubbing	
591	Amendments for the Treatment of Agricultural Waste	
366	Anaerobic Digester	✓
672	Building Envelope Improvement	
372	Combustion System Improvement	
317	Composting Facility	
554	Drainage Water Management	
375	Dust Control from Animal Activity on Open Lot Surfaces	
373	Dust Control on Unpaved Roads and Surfaces	
374	Farmstead Energy Improvement	
512	Forage and Biomass Planting	
561	Heavy Use Area Protection	
516	Livestock Pipeline	
590	Nutrient Management	
521A	Pond Sealing or Lining, Flexible Membrane	
533	Pumping Plant	
558	Roof Runoff Structure	
367	Roofs and Covers	
318	Short-Term Storage of Animal Waste and By-Products	
570	Stormwater Runoff Control	
606	Subsurface Drain	
635	Vegetated Treatment Area	
601	Vegetative Barrier	
360	Waste Facility Closure	
632	Waste Separation Facility	
313	Waste Storage Facility	
634	Waste Transfer	
629	Waste Treatment	
359	Waste Treatment Lagoon	

Can you provide an estimate of the capital required for the installation of this technology?

Please include all components and designate if provided by you or others.

1-5 MIL USD

Can you provide an estimate of the operational costs required for this technology?

Please include all costs and designate if provided by you or others.

2-4% CAPEX

Is there financing available for this system? Yes No *If so, what are the conditions for this financing?*

We can help find financing on a project to project bases.

Is the system available for lease? Yes No *Please describe.*

Not yet

What sort of warrantee or guarantee do you provide with this technology?

Do you provide any performance guarantees or strictly defects in parts and materials?

Both mechanical and performance guarantees

Explain how this system is unique or transformative and how does it improve upon or go beyond other technologies that are currently available.

Its made as simple and robust as possible so we can guarantee a gas to grid time. There are hardly any operaton and service hours and low skilled mechanic can operate the system.

Would you be willing to provide a location for a site visit by Newtrient? Yes No

If so, please provide location.

Technology References. Please provide customers with whom we can discuss this technology and its performance. Include a company name, location, contact name and contact information.

Reference 1

Company Name:	
Company Location:	
Contact Name:	
Contact Information:	

Reference 2

Company Name:	
Company Location:	
Contact Name:	
Contact Information:	

Reference 3

Company Name:	
Company Location:	
Contact Name:	
Contact Information:	

Reference 4

Company Name:	
Company Location:	
Contact Name:	
Contact Information:	

Are there any other facts about this technology that you feel should be included in this document?

All plant have been delivered well within the agreed delivery time and all plant have an up time of >97%