NEWTRIENT
INNOVATIVE SOLUTIONS IN RESOURCE RECOVERY

TECHNOLOGY PROVIDER
TECHNOLOGY INFORMATION REQUEST

Technology/Service:	Complete Mix Digester		
Information by:	Steve Peerce	**Date:**	March 13, 2017

COMPANY INFORMATION

Company Name:	DariTech, Inc.		
Phone:	360-354-6900	**Web Site:**	www.daritech.com
Address:	8540 Benson Rd	**State:**	WA
City:	Lynden	**Zip Code:**	98264

TECHNICAL CONTACT

Name:	Steve Peerce
Phone:	206-417-1472
Email:	steve@daritech.com
Address:	8540 Benson Rd
City:	Lynden
State:	WA
Zip Code:	98264

DEMONSTRATION SITE CONTACT

Site Name:	
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?

Complete Mix Anaerobic Digester

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

Anaerobically digests dairy manure, creating methane which can be burned as an energy source and converted to carbon dioxide

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

	Number of Sites	Size of Installations
Dairy	3	700-5,000 cows
Pork		
Poultry		

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

Preferably in the Pacific Northwest where we can build and service as well as design

Location of farm(s)?

Washington and Oregon

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

700-5,000

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.

Input material description/characteristics:
For example: raw manure, digestate, screened digestate, suitable non-farm feedstocks, other.

Raw or digested liquid manure

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

Whole stream

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

Both. System is fully developed, always looking for ways to improve

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.

All manure is treated. Overall ratio of solids/liquid effluent dependent on starting moisture percentage of liquid manure

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?

Electricity sold to the local utility

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

Scalable from as small as 100 cows. Modular system, can grow by adding tanks

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

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.

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.

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

Power to run all electrical motors required

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

3phase primarily, could run single phase for small operations

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.

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.*

Footings for tanks

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

We provide complete manure systems for dairies regardless of flush/scrape or type of bedding.

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.*

Assembled on site

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.

Some components such as pumps, separators, concrete, building, etc. can qualify

Are the any unusable or hazardous byproducts of this process? ◯ Yes ◉ No

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

Biogas cleaning media

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

Spare parts are always on dealer shelf.

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

DT Automation ETL listed PLC control panel with remote access with PC or smartphone

What is the usable life of the system?

Depends on maintenance practices at the dairy, everything is repairable

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

N/A

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

A good farm hand with mechanical aptitude

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.

Routine maintenance on manure handling equipment. If making power, regular service intervals for CHP unit.

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.

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.

From $1,000-$2,000/cow, dependent on number of cows and other operational factors in the dairy

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.

$.02/kwh for CHP maintenance. Routine pump and separator maintenance, dependent on size. Labor ranges from 1-2 hours/day for small operation to full time person for a large one

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

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

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?

1 year parts and materials

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

Simple, value engineered system is low cost and able to fit more budgets while providing equivalent performance

Would you be willing to provide a location for a site visit by Newtrient? ◉ **Yes** ○ **No**
If so, please provide location.

Lynden, WA

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:	Not authorized to publish customer contact info, please call on case by case basis
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?