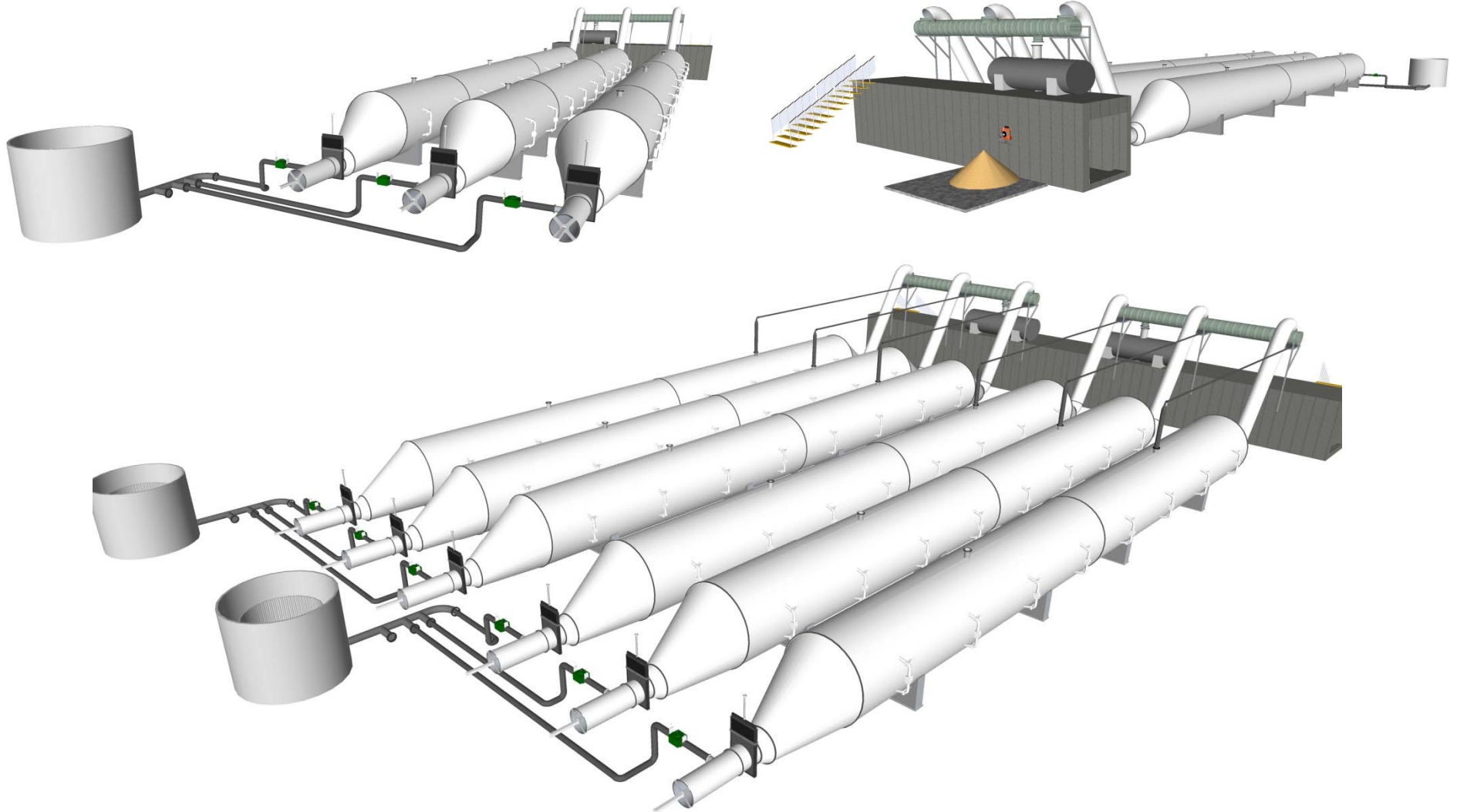


# Avatar Anaerobic Digester: Digester Systems for Any Size Operation

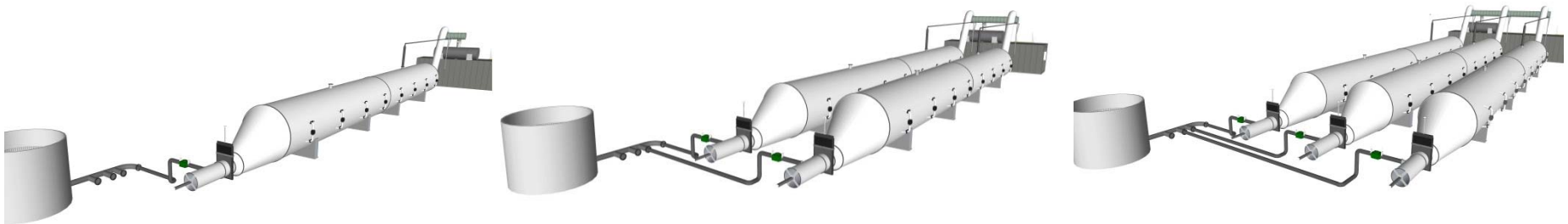


# Avatar Energy's Digester Design Features

- **Plug Flow System:** Operates in the Mesophilic temperature range (95-105F), and has the best track record among the digester industry.
- **Modular & Scalable Design:** Digester hull sections are 12' in diameter by 25' or 50' long. The digester barrel is made up of a number of hull sections linked together and can be arranged in parallel and lengthened to adjust the capacity load of the system.
- **Automated Operation:** The control system included with the digester operates the system automatically, reducing maintenance time to a few hours per week.
- **Transportable Asset:** The digester barrel(s) sit on packed gravel, and can be completely disassembled. This modularity allows the farmer to move the system. The long life expectancy on the fiberglass hull sections reflects the significant resale value that the digester will retain.

# Avatar Anaerobic Digester System Benefits

- A modular and scalable platform.
  - Can be constructed in phases.



- Internal R&D facility. Determine Optimum Blend!
  - Can target specific blends of materials for optimal system efficiency and effectiveness.
- Service first-firm. Providing service, maintenance and response teams.
  - Full Training of on-site personnel, Complete Emergency Response Planning, Detailed Operations Manual Provided, 24/7/365 Support via remote online access.
- Commitment to clean renewable energy.
  - Continuous R&D of digestible materials driving industry and company forward.



# Avatar Energy's Anaerobic Digester



# Digester Performance

- Plug Flow Retention Time 21-Days
- Capacity: ~ 275 Cows/ 150' Hull
- Feed Rate: ~ 5,600 Gallons/ 150' Hull/Day
- Maximum configuration flexibility
- Operating Temperature: Min 90°F, Max 140°F
- Ambient Operating Temperature: Min -30°F, Max 140°F





# Biogas Characteristics/Production

## Avatar AnD Biogas Specifications:

Composition: 60% CH<sub>4</sub>, 40% CO<sub>2</sub>, 1% H<sub>2</sub>O,  
Trace H<sub>2</sub>S/NH<sub>3</sub>

Energy Content: ~600 BTU/cuft or greater

Biogas Pressure: ~3.25 – 4 psi

Biogas Production Rate: (Manure Only)

23,500 cuft/day AnD 1B112-12 (50 kW)

46,800 cuft/day AnD 2B224-12 (125 kW)

70,250 cuft/day AnD 3B336-12 (185 kW)



# Effluent Separation and Treatment

## Screw-Press Separator:

Solids: <65% Moisture  
Liquids: High in N & P

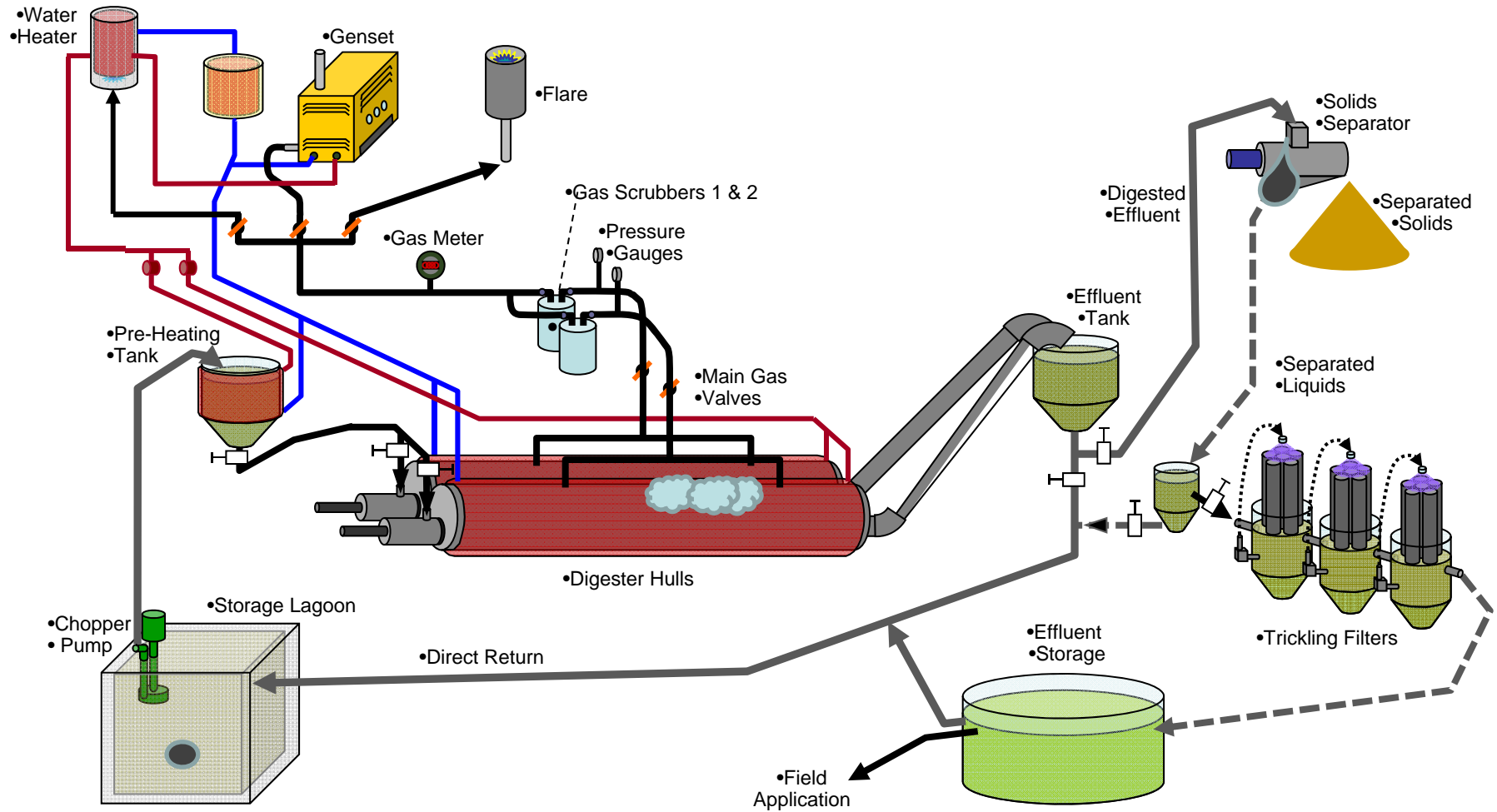
## Options for use of Separated Solids:

- Pathogen free & odorless bedding material.
- Nutrient rich organic potting soil / compost material.
- Pelletize the material for use as a pellet fuel source.





# How Avatar's System Works





# Avatar AnD Series Digester Capacities

<u>Size</u>	<u>Hull Configuration</u>	<u>Total Volume*</u> <u>(gal)</u>	<u>Retention</u> <u>(days)</u>	<u>Daily Feed Rate</u> <u>(gal/day)</u>
1B37-12	(1x 50')	37,347	20	1,867
1B56-12	(1x 50 + 1x 25')	56,020	20	2,801
1B75-12	(2x 50')	74,694	20	3,735
1B93-12	(2x 50 + 1x 25')	93,367	20	4,668
1B112-12	(3x 50')	112,041	20	5,602
2B149-12	(2x 50')	149,388	20	7,469
2B187-12	(2x 50 + 1x 25')	186,734	20	9,337
2B224-12	(3x 50')	224,082	20	11,204
3B280-12	(2x 50 + 1x 25')	280,101	20	14,005
3B336-12	(3x 50')	336,123	20	16,806
4B373-12	(2x 50 + 1x 25')	373,468	20	18,673
4B448-12	(3x 50')	448,164	20	22,408
5B467-12	(2x 50 + 1x 25')	466,835	20	23,342
5B560-12	(3x 50')	560,205	20	28,010
6B672-12	(3x 50')	672,246	20	33,612
7B784-12	(3x 50')	784,287	20	39,214
8B896-12	(3x 50')	896,328	20	44,816
* Total Volume = volume of digester hull - volume of gas bubble (assuming there is a 16in gas bubble)				
* Approximate # of cows = Daily feed rate / 20 gallons per day per cow				

# Questions?

For more information visit us online at

[www.AvatarEnergy.com](http://www.AvatarEnergy.com)

You can also find us on Facebook, LinkedIn or Twitter

**THANK YOU**