



advanced composting  
renewable energy  
organic food production



# Update on Freestate Farms – PWC Regional Organics Recycling Facility

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MWCOG Recycling Committee

September 21, 2017

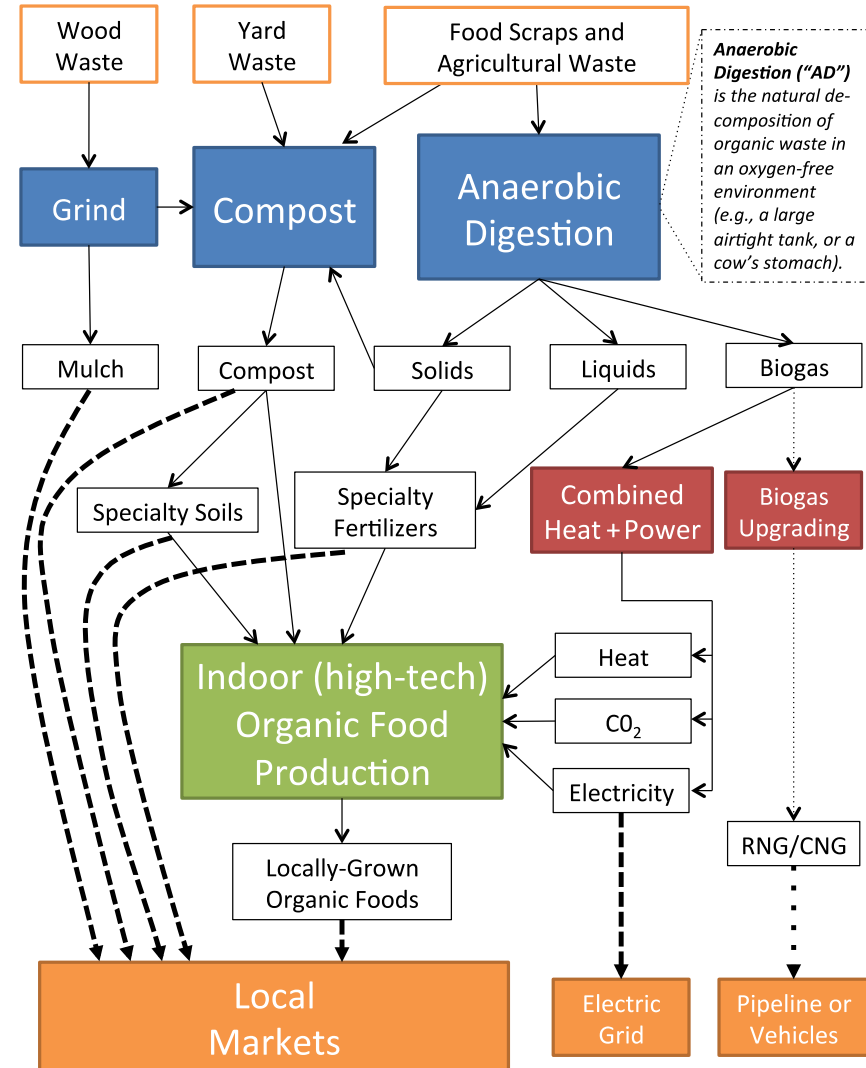


# Introduction and Process

**Freestate Farms LLC** delivers full-cycle sustainable solutions to its local community partners by developing, owning, and operating integrated facilities for advanced composting, anaerobic digestion, renewable energy, and commercial organic greenhouse food production.



Presently developing its first facility through a public-private partnership with Prince William County, Freestate Farms is starting to bring sustainable waste management, baseload renewable energy, nutrient rich compost and natural fertilizer products, and fresh locally-grown organic produce to the Metropolitan DC Region.





# Prince William Co. Project Specs

The PWC Board of Supervisors approved the Development Services Agreement with Freestate in early 2015 for the purpose of granting Freestate the right to develop, own, and operate its proposed integrated organic waste processing, renewable energy, and indoor organic food production facility at the County's existing composting facility.

The Agreement includes a 20-year term dated from the commencement of new operations, as well as two five-year extension terms (upon mutual agreement).



## Phase 1 – Advanced ASP Composting

- Processing capacity of 82,000 tpy of food, yard, and wood waste through advanced aerated static pile composting system; capacity for 20,000 add'l tpy of wood waste through traditional mulching
  - Up to 28,000 tpy of food waste – clean or in compostable plastic or paper bags; possibly minor contaminants
- Build out of full infrastructure for Phase 2 AD, biogas use, and CEA systems

## Phase 2 – Anaerobic Digestion and Indoor Ag

- Additional processing capacity of up to 84,000 tpy of food waste through anaerobic digestion system
  - Tiered prices for spectrum of incoming SSO – from clean food scraps to shrink-wrapped pallets of packaged unsalable food products
- Up to two megawatt (2 MW) electric generating capacity
  - Complementary and alternate biogas end-uses (RNG; C-RNG) still under consideration
- Indoor organic food production utilizing electricity, heat, compost, soil amendment, and carbon dioxide all generated through the onsite ASP and AD systems and processes



# Aerated Static Pile Composting



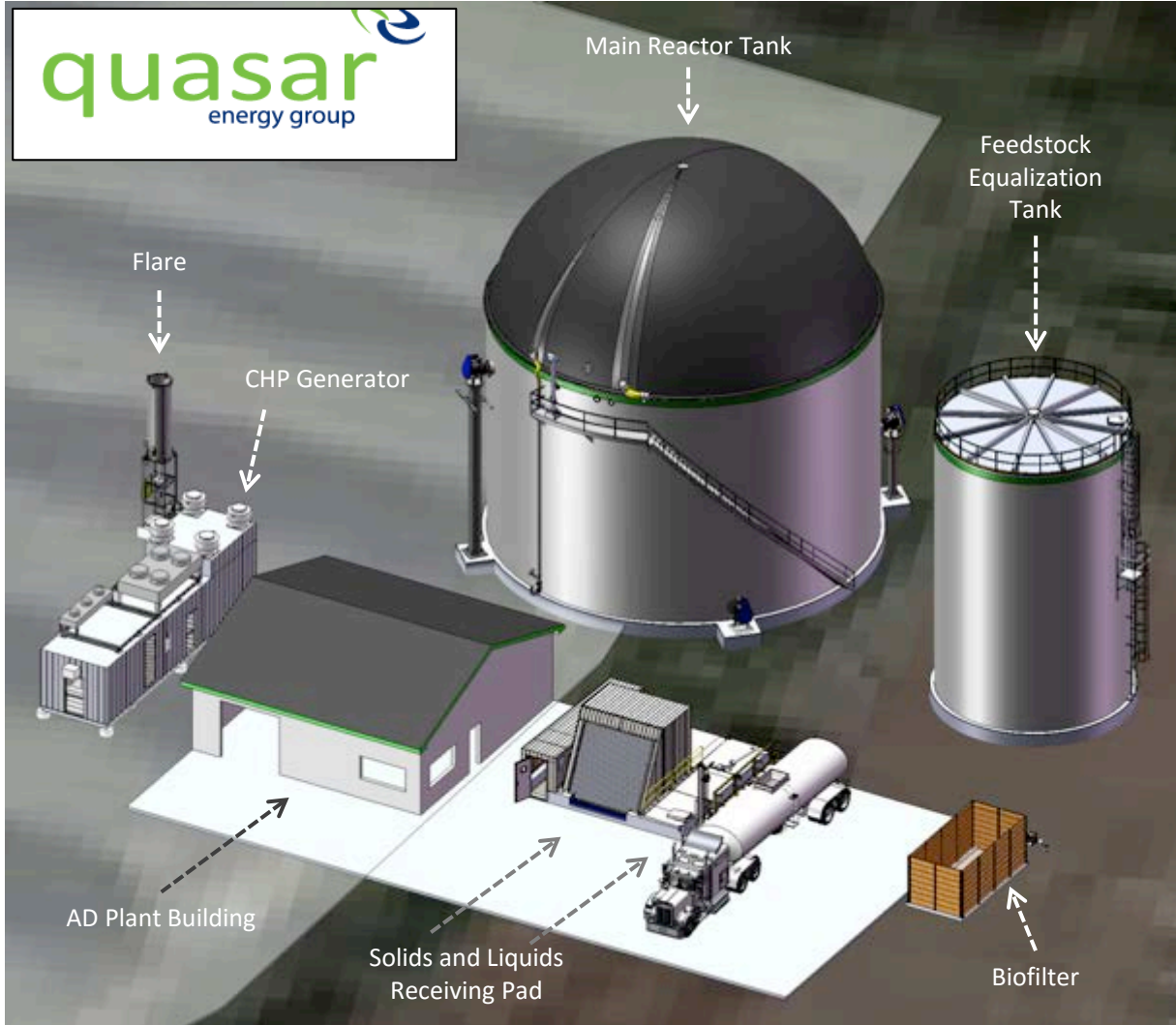
The foundational strategic element of the Freestate Farms system is advanced composting, and we have chosen to partner with **Engineered Compost Systems** of Seattle, Washington for our initial project in Prince William County.

ECS's in-house engineering and design expertise has been well proven at the 30+ sites across the U.S. where its systems are presently in operation, with many more under construction and development.

ECS's systems include intelligent process control and reliable environmental protections in the production of top quality compost products that conform to health and safety regulations and also meet the U.S. Composting Council's Seal of Testing Assurance (STA) Standards.



# Anaerobic Digestion and CHP



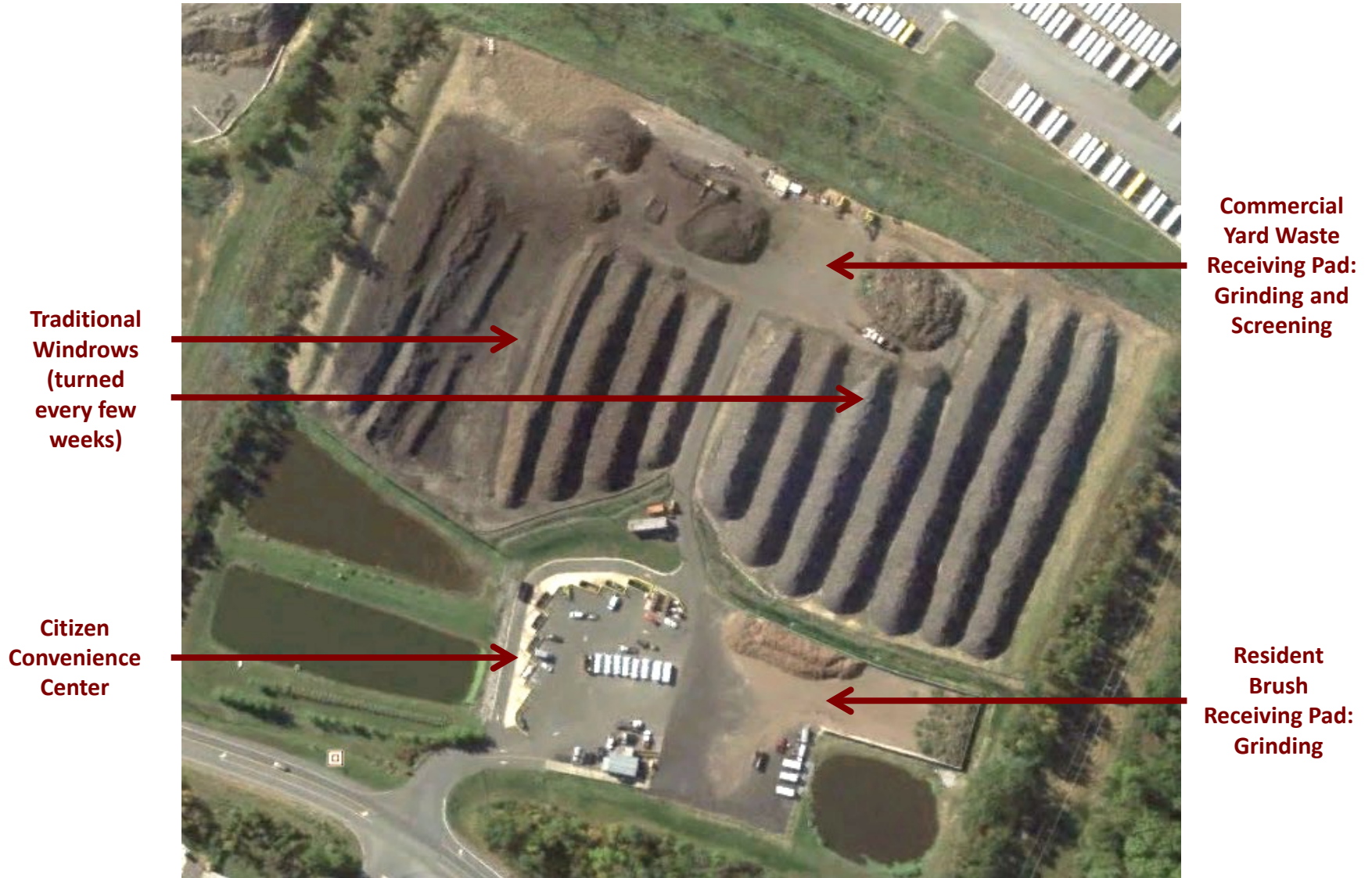
The core strategic element of the Freestate Farms system is the anaerobic digester, and we have chosen to partner with *quasar energy group* of Cleveland, Ohio for our initial project in Prince William County.

Capitalizing on its proven digester design, in-house engineering, and construction capabilities, *quasar* has successfully constructed 13 facilities presently operating in the United States, with numerous other facilities in different stages of development and construction.

*quasar* specializes in scalable and replicable continuously stirred tank reactor anaerobic digester systems that are designed to meet applicable environmental regulations.



# Balls Ford Road Site – Present





# Freestate Integrated Site Plan





# Freestate Site Views

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# Thank you

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Douglas Ross, Chief Executive

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

