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# RETECH2013

5<sup>th</sup> Annual Renewable Energy Technology Conference & Exhibition  
September 9 - 11, 2013  
Marriott Wardman Park, Washington, DC

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**GBB**  
SOLID WASTE  
MANAGEMENT  
CONSULTANTS

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- Headquartered in Fairfax, VA
- Established in 1980 as an objective adviser to governments, institutions, and businesses
- 30+ years implementing innovative solutions for waste and recycling industry
- Dedicated and focused exclusively to solid waste management
- Owner’s representative and feasibility reports for financings
- “Change Agents” to produce better services and facilities

## GBB Waste Technology Services

- Economic, technical, and environmental reviews
- Markets development
- Process planning and design
- Waste characterization and sourcing
- Procurement and negotiation assistance
- Independent feasibility consultant
- Technology due diligence
- Acceptance testing and operations monitoring



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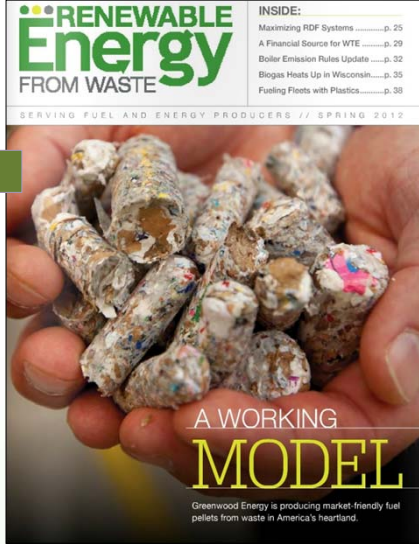
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**RENEWABLE Energy FROM WASTE**

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## Technologies and Risk

Source: Gershman, Brickner & Bratton, Inc. 2013

Alternative	Risks/Liability	Risk Summary
Mass Burn/WaterWall	Proven commercial technology	Very Low
Mass Burn/Modular	Proven commercial technology	Low
RDF/ Dedicated Boiler	Proven commercial technology	Low
RDF/Fluid Bed	Proven technology; limited U.S. commercial experience	Moderate to Low
Anaerobic Digestion	Proven technology; limited U.S. commercial experience	Moderate to Low
Pyrolysis	Previous failures at scale, uncertain commercial potential; no operating experience with large -scale operations	High
Gasification	Limited operating experience at only small scale; subject to scale-up issues	High
Mixed-Waste Composting	Previous large failures; No large-scale commercially viable plants in operation; subject to scale-up issues	Moderate to high
Chemical Decomposition	Technology under development; not a commercial option at this time	High

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## Economic Factors

- Landfill disposal abundant and generally less expensive than WTE in the U.S.
  - *In Europe, landfilling unprocessed waste banned and/or taxed heavily*
- Recyclables worth a lot
- Energy revenues need to be high to compete with landfilling
  - Power alone not enough
    - Cogeneration and or combined heat and power applications help
    - MSW not always a renewable fuel
  - Liquid fuel products have much higher value
- Making collection more efficient can create funds for more recycling and waste conversion

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## A Realistic & Ultimate Goal:

Fully Integrated and Efficient Waste Management System with Significant Diversion (Recycling) and WTE-WCT  
...in a 50-50 partnership!  
*...for more jobs, better environment, and energy independence!*

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