



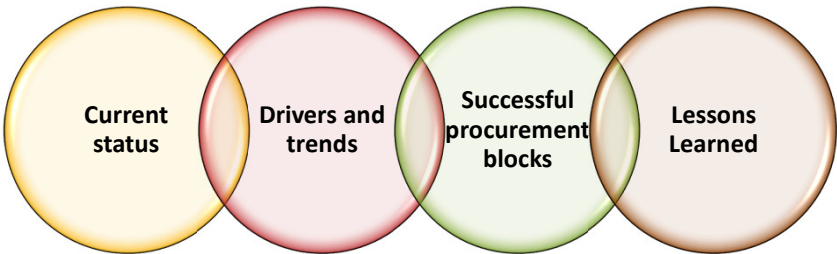
*Procuring an Anaerobic Digestion Plant: A Public Sector Perspective*

Ljupka Arsova, Tom Reardon  
Gershman, Brickner & Bratton, Inc.


Presented at BioCycle West Coast  
April 15, 2014



### Outline



Current status   Drivers and trends   Successful procurement blocks   Lessons Learned


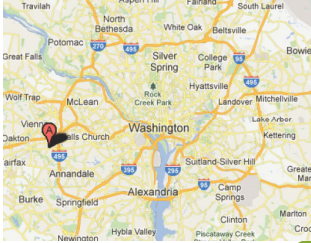



2

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## GBB Overview

- Established in 1980
- Solid Waste and Technology Consultants
- Helping Clients Turn Problems into Opportunities



3

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## GBB's Waste Consulting Services

- Economic, technical and environmental reviews
- Procurements
- Due diligence third-party reviews
- Waste characterization and sourcing
- Process planning and conceptual designs
- Independent feasibility consultant



4

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## ANAEROBIC DIGESTION IN THE US

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### Facilities and Market Leaders

- ~ 20 facilities operating in the U.S. (Source: GBB, 2015)
- 244 AD plants in Europe
- Privately financed, owned and operated
- Commercial food waste
- Organics from MSW
- Mixed with yard waste

**quasar**  
energy group

**ZeroWaste™**  
ENERGY, LLC.  
Recovery and Energy with Zero Waste

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Power of We™

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## Projects Under Development

- AD plants currently under development:
  - City of Portland, OR - Columbia Biogas
  - County of Santa Barbara, CA - Mustang Renewable
  - City of Perris, CA - CR&R
  - Monticello, IN- Waste No Energy LLC
  - Town of Brunswick, ME
  - Johnson, Rhode Island- Blue Sphere
  - Prince Georges County, MD - TBD
  - Prince William County, VA - Freestate Farm
  - City of Charlotte, NC - Blue Sphere
  - City of Columbia, SC - WZE
- GBB has been currently involved in City of Cleveland, Prince William County and Prince George's County

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## Technologies and Risk

Alternative	Risks/Liability	Risk Summary
Mass burn	Proven commercial technology	Very Low
Aerobic Composting	Proven commercial technology	Very 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

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## DRIVERS AND TRENDS

9



### Drivers

- High recycling and diversion goals (up to 80%)
- Zero waste goals
- Food waste disposal bans/mandates-VT, CT, CA, MA and RI
- Recognition of the food waste as a feedstock for AD plants and biogas production
  - Biogas as a fuel from organic waste included in the RFS2 under advanced fuel qualifying for the D3/D5 RINs
- Financial support for infrastructure development
- Availability of private financing

10

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## Trends

- From private initiatives only to bigger involvement of the public sector
- More world leading technology developers coming to the US
- Wastewater treatment plants interested in using excess AD capacity for food waste
- Part of complex solutions for mixed waste processing (MBT concept)

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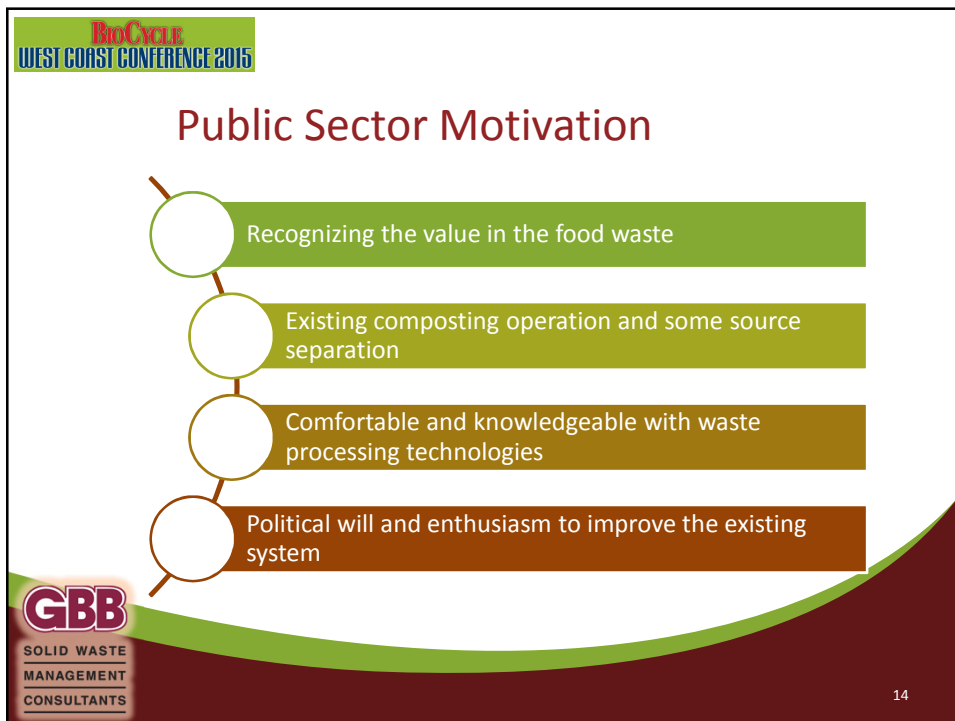
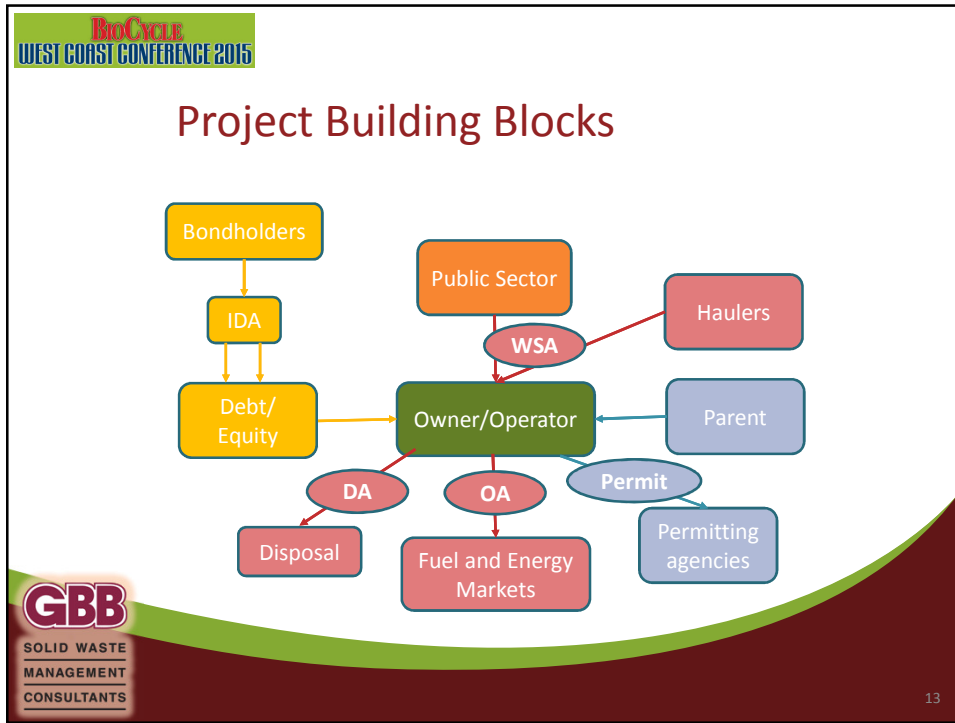
11

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## SUCCESSFUL PROCUREMENT BUILDING BLOCKS

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### Public Sector Commitments

- Waste supply
- Project site
- Permitting process
- Tipping fee
- CNG for fleet vehicle

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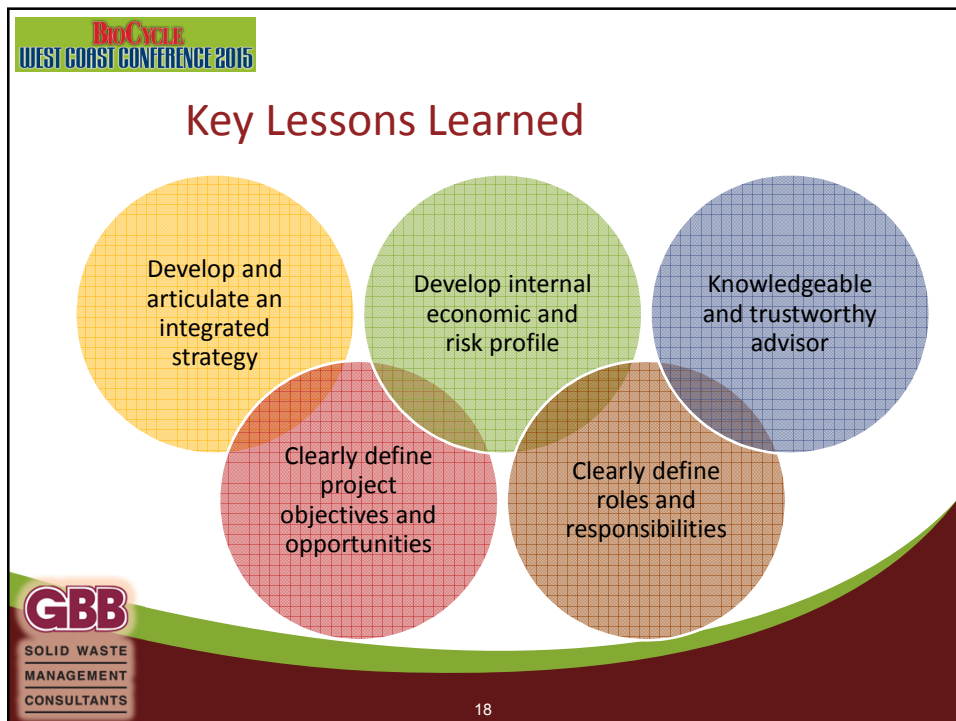
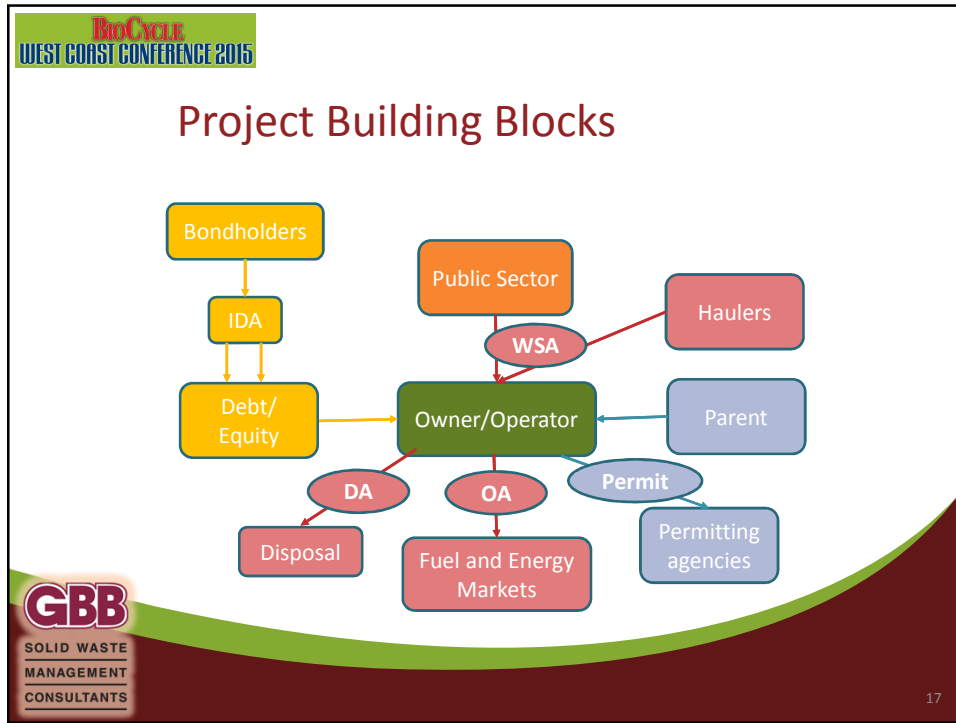
### Expectations from the Contractor

- Proven technology
- Feedstock sourcing (commercial food waste)
- Execution of offtake agreements
- Secure financing
- Construction and commissioning
- Operations and maintenance
- Performance guarantee

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## What is in Perspective?

- It is a game changer without significant system changes and fees increase
- As projects like Prince William County become reality the public sector will feel more comfortable and willing to accept more risk
- Education and more information sharing because we still hear:
  - “it is complicated technology”
  - “it is energy intensive” (?!)
  - “ is it working?”

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19

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Questions and comments?

## *Thank you!*

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20