

RENEWABLE Energy
FROM WASTE
CONFERENCE

Closing Comments for Renewable Energy From Waste Conference

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Cost of Collection and Disposal

- Costs and revenues affected by:
 - community size
 - government structure
 - politics
 - facilities used
 - waste supply agreements
 - Revenue sharing back to customer
- Collection
 - Residential solid waste : \$10 - \$40 USD\$ per month per household
 - Residential recycling \$2 - \$4 per month per household
- Commercial waste
 - charged on a per month per box basis, and may include a separate pass-through cost for disposal charges.
 - 2 cubic yard box serviced once per week = \$60 - \$140 per month
 - 6 cubic yard box serviced once per week = \$130 - \$280 per month
- WTE tipping fee= \$68/ton (2010 data)
- Landfill tipping fee = \$45/ton (2012 data)

Category	Percentage
Collection-MSW	41%
Disposal	31%
Collection-Recyclables	20%
Recycling-Processing	8%

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Collection Needs to Match Up with Technologies

- *One bin – two bin – three bin - four?*
- *Which shall it be to be greener evermore?*



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What is coming to America?

- Organics treated as recyclables
 - Co-composting and anaerobic digestion ready for prime time
 - Do it for “less”
 - Kroger – way to close the loop!
- Engineered fuels (EF) to non-renewable fuels
 - Carpet waste is a great renewable fuel
 - Cement companies motivated to use EF
 - Sourced from MSW and industrial waste streams
- MBT

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What is coming to America? (cont'd)

- Conversion technologies for higher valued liquid fuels and chemicals
 - MSW -- watch what is coming on line closely
 - Mixed plastics – almost ready for prime time
- Proven WTE depends on:
 - Energy economics
 - Political will

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Local Solid Waste Management Goals

- *What are the state laws and regulations that affect what the local system needs to change to?*
- *What do you want/need to do?*
- *How do we make it happen?*
- *Is the public ready for the change(s)?*
- *How will "it" be paid for?*
- *Can "it" be approved by elected officials, their constituents, and regulators?*

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Markets First

- *What are you making and how much is it worth?*
 - Materials have high value
 - Compost for soil amendments have low value
 - Fuels and energy have value low to high value
 - Residues have negative value
- *Who takes market and pricing risk?*
 - Prices
 - Terms and term
 - Variability
 - Affect on service fees

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Costs

- *What will conversion technologies cost?*
- The public sector doesn't have money
- It needs to cost less
- Cost to the waste service customer should be the focus
 - Service fees at the facility less relevant


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Project Development

- Address the “building blocks”
- Match collection with processing/recovery
- Develop the project concept
- Decide on ownership and risk posture
- Select contractor and technology
 - Procurement process vs. developer “Valley of Death”




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Project Development (cont'd)

- Keep addressing the “building blocks”
- Developing public knowledge and acknowledgement of need
- Have patience....these projects may take years to get to project financing



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Risks Elements

Construction Period	Recovered Product Income Risks
Capital costs overruns	Overestimation of energy recovery efficiency of technology
Additional capital investment to achieve required operating performance	Significant change in solid waste composition
Additional facility requirements due to new state or federal legislation	Changes in legislation which affect energy production and/or use
Delays in project completion which lead to delays in revenue flow and adverse effect of inflation	Overestimation of solid waste quantities
	Significant adverse changes in the market financial condition or local commitment
Operations Period	Downward fluctuation in the price of products
Facility technical failure	Inability to meet energy market specifications
Excessive facility downtime	Tipping Fee Income Risks
Underestimation of facility O&M requirements (labor, materials, etc.)	Diversion of waste to other competing facilities
Insufficient solid waste stream	Overestimation of the solid waste stream
Significant changes in the solid waste composition	Adverse changes in participating communities' fiscal condition
Changes in state and federal legislation which affect facility operations	
Inadequate facility management	
Underestimation of residue disposal costs	

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Service Fee “Formula”

- $SF = DS + OM + PT - PSC \pm OPB$
- Where:
 - SF = Service Fee
 - DS = Debt Service
 - OM = Operation and Maintenance Expense
 - PT = Pass Through Costs
 - PSC = Product Sales Credits (often a sharing of product revenues)
 - OPB = Other Payments Balance
- The OM component is often multifaceted. The components of it can be broken down further as follows:
 - OM = Labor + Benefits + Parts and Supplies + Equipment Replacement + Office Supplies + Communications + Delivery + Outside Contractors + Leased Equipment + Disposal Charges + Insurance/Bonding + Management Fee + Return on Equity + Revenue Sharing Payment + Risk Factor + Profit.

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Engaging the Public

- Fighting emotion and bias with logic and science
 - Engage public relations support
 - Conduct focus groups
 - Be ready for anti-environmental terrorism
- Link to Solid Waste Authority of Palm Beach County response to the Florida Sierra Club
 - http://www.swa.org/pdf/SWAPBC_GBB_Final_Report_050311_w-Atchs.pdf

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Legislation and Regulations

- *Will more states ban food scraps from disposal?*
- *Will U.S. landfill disposal ever be as expensive as in EU and UK?*
- Too many changes introduces economic risk
- Permitting needs to be streamlined/rational
- Several states stepping up recycling/diversion goals and Producer Responsibility (EPR)
- EPA needs to help lead the way with RFS and EF rules
- **Waste is very recyclable and it is also very renewable!**

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Big **“THANK YOU”** To:

- *REW*
- Smithers
- Sponsors
- Exhibitors
- Moderators
- Speakers
- Attendees

See you in San Jose next year!!



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Thank you!

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