

**Solid Waste Master Plan Workgroup on Performance and Viability of Technologies
for Residual Waste
Summary of Meeting #1, March 5, 2009**

Introduction:

Thirty-one people attended the first meeting of the Solid Waste Master Plan Workgroup on Performance and Viability of Technologies for Residual Waste. Jamie Doucett gave an introduction to the purpose of this workgroup, which MassDEP has stated is “to reach a common understanding regarding the performance data for various technologies (e.g., anaerobic digestion, gasification, pyrolysis, etc.) and attempt to resolve conflicting claims made by various stakeholders about the performance and viability of these technologies. The workgroup will also compare newer technologies with existing technologies (e.g., existing waste-to-energy facilities, landfills). This group will focus on obtaining and comparing actual performance data from facilities to develop a clear understanding of how different technologies have performed in practice. The information developed by this workgroup will be used to inform MassDEP’s policy development regarding new and existing technology options.” MassDEP’s primary goal for the first meeting was to frame the issues and reach agreement on how to move forward with the second and third meetings of the workgroup.

General Comments:

- Numbers are subject to uncertainties – need to identify the assumptions behind data
- Concern about how the information gathered will be used by MassDEP.
 - Need to know the context of how data will be used
- Has MassDEP considered working with state universities to get better information about technologies?
 - UMass clean energy work – UMass could quantify data and provide 3rd party verification
- Needs to be public/private partnership to focus on how best to use residuals – should strive for continual improvement of the solid waste management system
- Expand concept of “impact” to include energy and CO2 impacts
 - Also compatibility with recycling?
- Identify the potential for a technology to eliminate any residual wastes
 - What are the residuals that remain?
- MassDEP needs to identify the base case (current percentages of materials) and future cases
 - What recycling rate do we expect to reach? How much material and what kinds of materials are available after recycling could affect performance of these facilities.
 - What will the residuals be composed of?
- MassDEP should not be prescriptive of technologies, but should set goals for technologies to reach
- Standards should cover more than emissions or lowest residuals and look more broadly
 - For example, consider net facility energy output and carbon footprint

Group Goals:

- Evaluate performance and viability under different waste diversion scenarios
- Get better data where we don't have it (e.g. beyond existing facilities like municipal waste combustors)

Obstacle(s):

- May be difficult to get actual data
- May need to use vendor guarantees where actual operating data is not available

The group then discussed what specific parameters should be evaluated across different technology/materials management options. These proposed parameters can be grouped into four general categories for consideration when collecting data for comparing residual waste processing technologies: Energy, Environment, Economics and Viability. MassDEP has developed a table template for these parameters that is provided along with this meeting summary.

Energy:

- Maximum energy recovery: net mwh/ton
- Energy Security, national Security
- What portion is renewable or biogenic?
- Energy is now part of the waste management discussion. What are the priorities? Waste management or energy production?

Environment:

- Maximize material recovery on tonnage basis
 - Maximize diversion from landfills (divert to materials or energy) and minimize residuals.
 - What are the remaining residuals? How toxic and do they have beneficial uses?
- Air emissions: NO_x, SO_x, mercury, dioxin, particulates, CO₂ emissions/avoided
- Data on ash, slag, etc... Composition potential use/concerns
- Nature/composition of feedstock (how it is treated)
- Compatibility with recycling programs/additional material recovery
- Fuel source to power facility – the emissions produced
- Environmental compliance record
- Wastewater generated/discharged
- Water use
- Local community impacts – intangible externalities (e.g. odor)
- Nutrients recover/reuse (e.g. N from organics)
- Lifecycle considerations
- Knowledge of health and environmental impacts is constantly evolving – what is “safe”?

Economics:

- Economics for specific technologies
 - Operation costs per ton
 - Capital costs (net present value)
 - Revenues
- How are technologies subsidized?
- Economic Development and Job creation (does technology foster or impede job growth?)
- Connection with the Green Community Act, Renewable Portfolio Standard, Alternative Energy Performance Standard, Renewable Energy Credits
- Impact on waste collection practices

Viability:

- Reliability – how commercially viable is the technology?
- Flexibility of technology to deal with changing market
- Has the technology demonstrated stability – at what scale
- The potential amount of waste that can be handled over ten years

Other Issues:

- Need to consider emerging contaminants over time
- IPP paper cubes – this type of waste diversion escaped the Tellus Report and yet diverted significant amount of material from landfills to fuel production
 - This fuel product is sold as a commodity
 - Operate in grey area between recycling and waste disposal
- May need to reconsider when materials are defined as “wastes”

Next Meeting:

The second meeting of this workgroup will be held on Wednesday, March 18, from 1:00 – 4:00 pm. At this meeting, we will review the proposed chart template and begin working on filling in the chart based on available data sources and reports.