



Waste to Energy Treatment Alternatives

In September 2007, a study was initiated by SAAEP to investigate energy recovery from wastes in Southwest and South-Central Alberta. The objectives of the study were to:

- Determine current situation with respect to waste management
- Investigate three identified energy recovery processes
- Review sizing and operational consideration

Lethbridge based Trimark Engineering was retained to conduct the energy recovery study.

Information was obtained from waste generators, waste management operators and transporters and technology vendors. Data was also obtained from government sources at the municipal, provincial and federal levels.

Key findings of this report are:

- Most solid wastes generated in the region are land-filled as final disposal.
- Agricultural production and secondary processing operations produce high volumes of organic residuals. Most of these organic residuals are land applied for disposal and to enrich soil.
- The composition of the land-filled solid wastes includes materials that may be recovered, reused, composted or used as feedstock for energy recovery.
- The composition of the agricultural residuals includes materials that may be used as feedstock for energy recovery.
- Despite waste reduction initiatives, the quantity of solid waste entering the waste management system continues to increase year after year.
- Based on current trends, municipal costs associated with waste management will increase.
- The assessment of the total cost of waste management should consider factors including environmental, health and social costs.
- Implementation of material recovery, composting and energy recovery processes has the potential to reduce region landfill requirements by 80 to 90%.
- Energy recovery processes may recover up to 500 kWh of electricity per tonne of waste processed. The process may generate an equivalent amount of heat energy, which may be recovered.