

SALT Inc. Presentation
To
City of London
Mayor's Sustainable Energy Council

Mayor, Council Members, Fellow Presenters, Ladies & Gentlemen:

The reason that we are here today to discuss Sustainability and Energy Generation and Conservation can be directly traced to issues relating to Global Warming and Climate Change. It is within that context that we make our presentation and specifically as it applies to Landfill Methane Gas generation.

The Company

SALT Inc. is a London-based company specializing in the use of aerobic biodegradation of landfill organics. The advantages of this process are many:

- greenhouse gas mitigation
- leachate reduction and improvement
- odour suppression
- landfill space recovery
- cost effectiveness

Our mission statement is: “To provide complete landfill remediation, sustainability and greenhouse gas mitigation at the lowest cost while providing significant environmental, social and economic benefits.”

Several sites in the US, both open and closed, have been remediated with our technology. We are partnered with several large multi-billion dollar international corporations including; Stantech Engineering, Hazco Environmental Services and Apache Oil. We are currently in negotiations with the City of Calgary to implement our technology.

We have also been instrumental in drafting a protocol for aerobic landfill decomposition for the Alberta government and we fully expect that it will become the de facto standard for the rest of Canada and the United States.

The Challenge

Landfills generate methane, which is approximately 21 times more potent than CO₂. In a world that seeks to mitigate GHG and develop alternative energy sources, it is easy to conclude that conversion of methane into energy is environmentally sound and as a source of “free” fuel, economically attractive. We are here to dispel that myth and offer a more effective alternative.

Four fundamental issues must be examined:

- Environmental: Short Term Impact & Long Term Liabilities
- Sustainability
- Economics
- World Wide Experience

Environmental

Gas collection and flaring with the potential to convert methane into power does mitigate against GHG's. By converting methane into CO₂ + heat, the Global Warming Potential of the released gases is reduced. We applaud the intention.

However, in order to maximize the power potential of a landfill, operations must be revised to generate additional methane. Not all of this methane is captured and much of it escapes.

Moreover, as the methane potential decreases, conversion of methane into energy becomes economically less attractive and the process will eventually be shut down. The landfill will continue to emit GHG's into the atmosphere well into the future (up to a hundred years).

There are other environmental consequences of methane capture / conversion to energy:

- Odours still persist
- Air quality is compromised
- Leachate issues are still present

Ultimately, the landfill will be abandoned leaving a legacy of unresolved problems to be addressed by future generations.

Sustainability

Landfill gas capture and conversion to energy is NOT sustainable. It depends on the addition of increasing amounts of organic waste to fuel the process. When a site is full, methane generation slows to a point where power generation is no longer feasible and the process is terminated. Short-term gain for long-term pain.

Economics

While there may be some initial economic justification for power generation from landfill gas capture, that benefit must be weighed against the life cycle costs of the project and compared to alternative strategies that accomplish the ultimate goal of GHG mitigation. Remember, we are here to discuss sustainable energy BECAUSE of the potential for Global Warming through GHG generation.

AM0012 is a methodology approved by the United Nations for the reduction of GHG's. It describes the protocol under which methane is captured and flared into heat and CO₂.

The scientific premise is sound, but reports from the UN are disappointing. In fact, the results have been so poor, that the funding of future LFG projects is in jeopardy.

Under AM0012, it is expected that 50% to 70% of the methane generated, will be captured and consumed. CDM (Clean Development Mechanism) Board reports show the results to be about 35% of expectation. This translates into a methane recovery ratio of between 17.5 % to 24.5%. Simply put, that means that between 75.5 % and 82.5% of the methane generated escapes into the atmosphere.

Alternative

By comparison, an AEROBIC bioreactor can

- eliminate approximately 85% of ALL GHG's
- mitigate against environmental issues
- reduce life cycle costs
- provide recycling opportunities
- maximize landfill investment
- minimize future landfill risks.

Environmental

An AEROBIC bioreactor emulates nature. It rapidly degrades organic matter 30 to 60 times faster than a traditional anaerobic landfill, and ELIMINATES the production of methane within 2 to 3 weeks of operation. Within 3 years the organic matter is completely decomposed and there is no further methane generation. Odours and leachate issues are virtually eliminated.

Compare 85% methane reduction using an aerobic process against the UN experience of less than 25% employing gas capture methods.

Sustainability

At the end of the AEROBIC process, approximately 25% of landfill air space is recovered as a result of "slumping". In addition, the landfill may be mined and the materials separated using conventional technologies. Because typical landfills contain about 50% organics, approximately 50% of the remaining space (after slumping) can be recovered. Other recycling options can extend space recovery. The space can then be re-used, thereby making the aerobic process, much more sustainable.

A landfill can become the ultimate recycling facility. Theoretically, blue box and green box programs could be eliminated and ALL non-hazardous waste could be picked up in one stream.

Economics

Since the AEROBIC process mitigates against 85% of methane generation, a substantial number of Verified Emission Reductions (VER's) can be realized. Conservatively, one tonne of landfill waste equates to one VER. The VER's have value and can be either sold or retired to achieve a "carbon neutral" status - perhaps a combination of both. The value of the credits will more than meet the costs of deploying an aerobic bioreactor system.

Summary of Aerobic Advantages

- environmentally more effective (85% GHG mitigation).
- sustainable
- economically viable
- reduces life cycle costs
- eliminates odours
- consume and improve leachate
- recycling options
- re-use site as a landfill or reclaim land for higher value use

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