Ashland Waste to Energy Project

WHY?

Two years ago, Casella notified us that they would be closing the Bethlehem landfill by the end of 2027. Knowing the cost to haul our trash out of state could triple our current budget, which is today over $100,000, we knew we had to look for some other alternative. We knew the town of Bridgewater had a boiler to take care of their town's waste. But what if Ashland could build a power plant and turn our waste into power for the town (Ashland Electric) so we quickly started to look in to Waste-to-Energy plants and the possibility that the town could build and profit from it. After meeting with Waldron engineering and much research we are confident this plant will bring much-needed revenue to the town. This plant is to be built and operated at no cost to the taxpayers. This is possible using Revenue Bonds that will not require repayment until the plant is in full operation, this will not happen until 2027. The profit from the operation of this plant in addition to helping dramatically reduce the tax rate in Ashland, would also provide a revenue source to pay for upgrades to our infrastructure.

What is it and what are the benefits?

Waste-to-Energy will take non-hazardous municipal solid waste (MSW) otherwise destined for landfills and combust it, generating steam for electricity production. Our proposed Waste-to-Energy Facility is designed to convert the waste that remains after recycling into steam/electricity for homes and businesses. The residual ash is processed to recover ferrous and Non-ferrous metal for recycling while all gases will be collected, filtered, and cleaned to well below emission standards.

Waste-to-Energy is a technologically advanced means of waste disposal is widely recognized for reducing greenhouse gases, particularly methane, by eliminating emissions from landfills. NASA scientists have identified landfills as Super emitters of a greenhouse gas that is 84 times more potent as a climate-warming gas than CO_2.

Examples:

- For every ton of municipal solid waste processed at our proposed Waste-to-Energy facility, we will reduce Green House Gasses by up to one ton.
- We could power up to 4500 homes with reliable energy – 24 hours a day, seven days a week. One megawatt equals one million watts or 1,000 kilowatts, enough electricity for the instantaneous demand of 750 homes at once. That number fluctuates because electrical demand changes based on the season, the time of day

and other factors. We will be selling six megawatts of power to generate additional revenue for the town.
- We will collect a tipping fee for every ton of MSW brought to our facility (up to $80 a ton or more).

Reduced landfill waste.

For decades sending our waste to landfills has always been an easy option. It gets dumped and buried, and in time it will decompose. However, landfills occupy a lot of space and destroy habitats and landscapes.

Job creation.

The plant will create 50 to 60 jobs in Ashland.

Reduction of Green House gasses

When waste is placed in landfills it creates a vast amount of methane. This gas is extremely harmful to the environment, more so than CO2. While it does not hang around in the atmosphere as CO2, it absorbs more heat, contributing to global warming. Even the Ashland Landfill gives off methane.

Recover valuable resources.

It is a way to recover valuable resources. Ferrous and non-Ferous metals will be recovered. Today, it is possible to reuse 90% of the metals contained in the bottom ash.

Energy creation

As mentioned above If we use our waste correctly, we can create energy from it. Waste-to-energy facilities can use this waste to create electricity and heat. Inevitably, we all will always generate some waste. Turning this waste into energy means creating fuel sources that enable us to reduce our dependence on fossil fuels. This plant will generate twelve megawatts of power continuously.

Sustainable process

The entire process of turning waste into energy is sustainable. We will reduce the need for fossil fuels or non-renewable sources to make it happen. The process is natural such as the anaerobic digestion process. As a result, the organic waste turns into a source of energy that once would have been lost, when placed in landfills.

FAQs

What is the cost?

$135 million to build, however this will be a revenue bond so the payback on it will not happen until 1 year after the plant has been in operation. After 20 years of payments the total estimated cost is $186,559,660. The revenue from the plant will pay for the bond with no tax impact to the homeowners. This is only an estimate. The bond has not been negotiated and grants have not been filed for, however if the bond is signed it cannot be higher than the $135 million without going back to town meeting.

Are there any grants available?

Yes, there are federal and state grants available, however we will not know how many or how much until we get approval from the town to move forward with this project. To find the grants available and to be competitive in acquiring these grants we will need to hire professional grant writers.

What guarantees we will get enough waste to run the plant?

A waste study has been conducted and the results are that there is more than enough waste in the area from NH sources to run the plant which will need 168,000 tons per year. We could also bring in waste from out of state. Municipal Solid Waste available in NH surrounding communities is 693,136 tons per year.

How are we protecting the area from spills?

The road to the plant will be lined and curbed to control any spills that may occur. Employees will be trained and certified in the control of any spill that may occur.

What will Happen to our current Transfer Station?

Nothing, you will still recycle and bring your trash as always to the Transfer Station. What will change is it will no longer cost us over $100,000 to bring our trash to a landfill. And each ton of trash brought to the WTE plant will generate power that will make the town money.

Will there be extra trucking in town from route 3?

There may be some but keep in mind those communities that currently haul to Bethlehem already drive on route 3 in Ashland. We expect to see up to 25 trucks a day at the plant, but the majority would come from I93. The Plant will not be assessable from Collins St.

Location:

The chosen location is ideal for this plant as it is on town property. It would be next to our Sewer Lagoons. It is remarkably close to the power lines needed to send the power to the Grid. These conditions and others make it feasible for Ashland as we own our electric department. The site is close to I93, no need to build large transmission lines, Ashland is in central NH making the site accessible statewide.

What will be coming out of the stack?

Waste-to-Energy facilities employ a carefully controlled combustion process with temperatures in excess of 2,000°F and sophisticated air pollution control equipment to ensure that emissions are well below permitted limits and fully protective of human health and the environment. For example, acid gases, like sulfur dioxide, are neutralized using lime in a scrubber reactor. Particulate matter emissions are controlled through bag houses, which employ hundreds of fabric filter bags to remove pollutants from the air. All gas produced by combustion must pass through the air pollution control equipment before exiting through the stack.

Throughout this process, operating parameters (such as steam flow and process temperatures) will be constantly measured alongside real-time, continuous emission monitoring system data to ensure proper operation and compliance. Emissions are accurately monitored through periodic testing performed by regulation-approved third parties. To say Waste-to-Energy produces zero emissions is false. Like any process that involves combustion, Waste-to-Energy does produce emissions, however 99.9% of emissions emitted from this stack consists of normal components of air including nitrogen, oxygen, and water vapor. The remaining pollutants are highly regulated.

With the advanced air pollutant control systems in place, those emissions are well below federal guidelines and permitting thresholds. As an added layer of transparency, this site will report yearly on their annual performance and make our continuous emissions monitoring data publicly available. One real world example of what is coming out of the stack for comparison only is below this is one single diesel truck.:

NOX 70 mg/Nm3 (plant) vs 350 mg/Nm3 (1 truck) - Ashland is 80% less.

CO 89 mg/Nm3 (plant) vs 312 mg/Nm3 (truck) - Ashland is 72% less.

SO2 49 mg/Nm3 (plant) vs 257 mg/Nm3 (truck) - Ashland is 81% less.

(Sources include: (California ISO) (Covanta) (Waldron)

1Melikoglu, M., Lin, C. & Webb, C. (2013). Analysing global food waste problem: pinpointing the facts and estimating the energy content. Open Engineering, 3(2), pp. 157-164. Retrieved 23 Feb. 2020, from doi:10.2478/s13531-012-0058-52Richa Kothari, V.V. Tyagi, Ashish Pathak, Waste-to-energy: A way from renewable energy sources to sustainable development, Renewable and Sustainable Energy Reviews, Volume 14, Issue 9, 2010, Pages 3164-3170, ISSN 1364-0321, https://doi.org/10.1016/j.rser.2010.05.0053Paul H. Brunner, Helmut Rechberger, Waste to energy – key element for sustainable waste management, Waste Management, Volume 37, 2015, Pages 3-12, SSN 0956-053X, https://doi.org/10.1016/j.wasman.2014.02.0034PAUL EKINS, GABRIAL ANANDARAJAH & NEIL STRACHAN (2011) Towards a low-carbon economy: scenarios and policies for the UK, Climate Policy, 11:2, 865-882, DOI: 10.3763/cpol.2010.01265W Gujer, A J B Zehnder; Conversion Processes in Anaerobic Digestion. Water Sci Technol 1 August 1983; 15 (8-9): 127–167. doi: https://doi.org/10.2166/wst.1983.0164