Summary of Waste to Energy Research June 15, 2019
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Possible threshold questions this group may wish to confront:

- is there any long-term future for waste to energy in Ames
- Does Ames still want to play a cutting edge role as in did over 40 years ago in developing the plan—even if it means phasing out the plan.
- LWV can play a strong role in pushing in either direction

The first two articles raise questions about the future of WTE (I am unsure if the report done for the City of Ames was expected to consider these positions)

1. The uncertain future of waste to energy

   https://reloopplatform.eu/the-uncertain-future-of-waste-to-energy/

   https://reloopplatform.eu/reloop-members/

2. In a world where the economics of energy are undergoing significant change, the concept of using waste as a power source may be becoming outdated.

   Powering Our Future with Trash (univ Pennsylvania)

   https://kleinmanenergy.upenn.edu/policy-digests/powering-our-future-trash

   By 2100, landfills will be a thing of the past, and all waste management will lie in three categories: recycling, composting, or WTE. European model nations, such as Germany, Netherlands, and Austria, have already modernized their waste management sector

The following research focuses on reduction of the toxic consequences of WTE and alternatives. However, some of the research promotes certain products

1. Putting Garbage to Good Use with Waste-to-Energy
https://blogs.ei.columbia.edu/2016/10/18/putting-garbage-to-good-use-with-waste-to-energy/
Three new technologies have the potential to further reduce toxic emissions, leave less residue and produce syngas, a gas mixture which can be used as fuel for electricity or made into other energy products. The three new technologies— gasification, plasma gasification and pyrolysis—are considered “conversion technologies,” which are technologies that do

not involve combustion (burning with oxygen). They super-heat solid waste in low-oxygen environments, which greatly reduces the production of toxic emissions, and facilitates the immediate recovery of metals and slag so less residue goes to landfills and that which remains is less toxic.

Despite these advantages, none of these new technologies have yet been launched at commercial scale in the U.S. In Japan and Europe, where land for landfills is scarce, conversion technology plants have been supported with government subsidies and favorable regulations. *But costs are high*, because some plants require more homogeneous waste, the pre-sorting of which adds to the cost, and the current methods of cleaning syngas are expensive. *(emphasis added)*

2. What are some of the latest waste-to-energy technologies available?

https://www.prescouter.com/2017/10/waste-to-energy-technologies-available/

MSW has really low calorific value and directly incinerating it will not generate adequate thermal energy. So, pre-treating MSW into refuse derived fuel (RDF) is more effective.

3. 5 KEY THINGS TO LOOK FOR IN THE FUTURE OF 'WASTE TO ENERGY'
https://www.regenwaste.com/5-key-things-to-look-for-in-the-future-of-waste-to-energy

What the Future Holds for the Energy-from-Waste Industry

https://www.cdmsmith.com/en/Client-Solutions/Insights/Future-of-Energy-From-Waste-Industry