

Solid waste debate: To burn or bury?



A grapple crane is used to move trash at the Wheelabrator facility in Penacook on Wednesday, April 20, 2016. (ELIZABETH FRANTZ / The Concord Monitor staff) Elizabeth Frantz » Buy this Image



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With limited space and rising costs to bury trash in New Hampshire landfills, burning solid waste to generate energy is often hailed as a better environmental option.

However, there's a tradeoff – burning trash typically costs less, and frequently means less trucking of waste to far-away landfills, but incineration sends more pollutants into the air than burying waste in the ground.

In July of next year, Concord is ready to shift to burning its trash instead of burying it. As part of the new solid waste contract, the city's waste will be transported by Casella Waste Systems to the Wheelabrator waste-to-energy facility, a division of WIN Waste Innovations in Penacook.

By shifting to incineration, city officials believe they have chosen a more environmentally responsible option, as it eliminates the need to truck waste over 80 miles to a Casella-owned landfill in Bethlehem, which it had done for the past 10 years, resulting in reduced fuel costs and vehicle emissions, while generating energy.

Each year, the city expects to send around 5,500 tons of waste to the waste-to-energy facility.

Chip Chesley, the director of General Services in Concord, said the decision to opt for waste-to-energy technology was based on the state's solid waste management plan's preferred hierarchy of waste management.

The Department of Environmental Services recommends waste-energy technologies such as incineration, as a preferable option to traditional incinerators or landfills because they recover energy while reducing trash volume.

“From the other technologies that are available to Concord, this is the one that rates the highest based upon their [DES] rating from an environmental standpoint,” said Chesley.

But, environmental advocates counter that the impact of waste incineration on the environment could be just as detrimental, if not more.

“Waste-to-energy is a misnomer,” said Kevin Budris, advocacy director at Just Zero, a nonprofit working towards zero-impact waste solutions. “The incineration industry likes to use the phrase waste-to-energy because it sounds like trash is being put to a good purpose by generating energy, when in fact that’s not the case.”

Burn or bury?

Since the early 20th century, the United States has had a long history of burning trash in open pits or small incinerators. In the 1980s, the concept of burning waste to generate energy gained popularity, and the waste industry’s narrative of energy recovery convinced several states, particularly those in the Northeast such as Connecticut, Massachusetts, New Hampshire, and Maine, to support the movement.

Trash incinerators that generate energy still pose significant environmental risks. In comparison to coal-fired power plants, trash-burning plants release more than twice as much carbon dioxide to produce the same amount of energy, explained Budris.

These facilities emit toxic pollutants like mercury, lead and dioxins, all of which are harmful to human health and the environment.

The Penacook-based Wheelabrator facility operates with a Title V permit, which classifies it as a major pollutant source.

According to WIN Waste Innovations, processing one ton of waste at the Penacook facility results in avoiding the emission of nearly two tons of carbon dioxide equivalents. This is achieved through the elimination of methane emissions from landfills, shifting energy generation away from fossil fuels and recycling metals.

Wheelabrator officials say they “consistently monitor all plant systems, including emissions, and conduct annual stack emission testing,” and the test results are “consistently below state and federal standards.”

According to company data, the plant burns around 180,000 tons of waste annually. The plant generates up to 14 megawatts of electricity, enough to power about 14,000 homes, although 1.5 megawatts are used to operate the plant.

Despite advanced technologies such as those used at the Wheelabrator facility, there is no foolproof way to ensure that no harmful toxins are released into the environment.

Budris says waste incineration can be boiled down to a straightforward concept – “toxins in, toxins out.”

While incinerators reduce the total volume of solid waste by burning it, they still depend on landfills to bury the ash that is left behind. The Penacook plant generates about 52,000 tons of ash annually, which is about the weight of five U.S. Navy Destroyers, that is taken to the Wheelabrator landfill in Shrewsbury, Mass., to support the movement.

Opponents of incineration argue that it discourages recycling and promotes over consumption, which leads to increased waste generation in the long run.

Landfills, on the other hand, have their own environmental problems, some of which are obvious, others less visible. Decomposing waste buried in landfills emits methane, a greenhouse gas, and toxic leachate that can pollute bodies of water.

According to an estimate from the U.S. Environmental Protection Agency, in 2021, the Wheelabrator facility in Penacook released carbon dioxide equivalent to the emissions produced by burning more than 61,000 tons of coal.

In New Hampshire, apart from the Wheelabrator facility, many of the state's landfills are among the top ten contributors to greenhouse gas emissions. Turnkey landfill, North Country Environmental Services landfill, Four Hills Nashua landfill, and Mount Carberry landfill are among them.

“There is no good choice between incinerators and landfills,” stresses Budris. “They are both toxic, climate-damaging and false solutions that only benefit waste management companies and companies that are generating waste in the first place.”

The preferred waste management technique, environmental advocates say should be developing a circular economy that focuses on reducing waste, reusing materials, and recycling.

Privatization of the waste industry

While the privatization of the waste industry has alleviated the burden on municipalities nationwide, it has also resulted in reduced control and oversight over solid waste management practices and less flexibility in negotiating long-term contracts.

In Concord's case, Casella's proposal for waste collection requires the city to transition to an automated trash collection system within a set timeframe to secure more cost-effective and long-term contracts spanning 7 to 10 years.

“We have three big companies determining what goes where – Casella, Waste Management, WIN Waste Innovations in New Hampshire and they have a lot of influence over policy,” said Katie Lajoie, a registered nurse in Charlestown who works for the nonprofit Working on Waste. “I think municipalities are in a terrible bind and it's very detrimental and municipalities need to take control again, and have public sector services.”

However, insufficient infrastructure, personnel requirements, and the need for increased capital have caused municipalities to take a step back from being involved in waste management.

Concord has explored the possibility of taking over the solid waste collection, Chesley said, but an assessment revealed that it would result in an additional cost of \$2 million per year.

“When we looked at why we were so much more expensive, it made perfect sense – we have to build certain redundancies into our systems,” explained Chesley.

If the city takes on the responsibility of waste collection, it will need to have a backup waste pickup truck in case one of its trucks breaks down. This would be required even if only 12,000 homes were served. While private waste management companies are better able to build fixed costs and redundancy into their systems over a much larger base. This allows them to operate more efficiently and effectively than municipalities could on their own.

Apart from the lack of competition in the waste industry driving up costs, the impact of volatility in recycling markets has pushed communities to explore less environmentally conscious alternatives to recycling to save money.

Budris emphasized the need to reconsider our perspective on recycling and waste.

“We need to reprioritize waste reduction, waste diversion and truly environmentally friendly options like reuse, before we lean on compromise recycling systems,” said Budris. “And, especially before we resort to a dangerous false choice between burning or burying our waste.”