May 23, 2023

Pennsylvania Department of Environmental Protection

Re: Plan approval application for Reasonable Available Control Technology (RACT III) Requirements for Covanta Delaware Valley waste to energy facility
Chester, Delaware County, PA

Delaware Riverkeeper Network (DRN) submits these comments in opposition to the approval by Pennsylvania Department of Environmental Protection (DEP) of an application by Covanta Delaware Valley, LP for its waste-to-energy facility. The application is for a Plan Approval to install equipment regarding nitrogen oxides (NOx) that are emitted from the facility's six (6) waste combustors to bring it into compliance with new federal and state standards for air pollution under the federal Clean Air Act.

DRN opposes the approval of the plan because NOx will still be emitted (along with other pollutants) and these emissions will continue to harm the health of the people in Chester and the region and will adversely impact the Delaware River and its watershed, human and nonhuman.

Nitrogen Oxides or NOx are a group of poisonous, highly reactive gases.[1] These gases form when fuel is burned at high temperatures.[2] NOx and volatile organic compounds (VOC) react in the atmosphere with sunlight to produce ground-level ozone (smog), fouling the air. The Delaware Valley region, including Chester, is a non-attainment area for ozone and particle pollution[3], meaning it does not meet federal air standards that are set to protect human health and the environment.

Of the six pollutants that are measured by national air quality standards, particle pollution and ground-level ozone have the most widespread health threats.[4] NOx can cause respiratory distress and irritation, burns to the eyes and skin at higher levels and after prolonged exposure

[1] https://www3.epa.gov/region1/airquality/nox.html
[2] *Id.*
[3] https://www.dvrpc.org/airquality/
[4] https://catalog.data.gov/dataset/us-epa-nonattainment-areas-and-designations

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can cause fluid buildup in the lungs, even death.[5] There is no excuse to continue to allow any source of NOx emissions, or particle pollution, to continue in this unhealthy airshed that fails to meet basic air quality standards already. The people who live here and the environment they live in is being subjected to an intolerable and disproportionately high level of air pollution from which they cannot escape. The Covanta incinerator cannot be allowed to continue to operate.

This would be different if it were possible to eliminate NOx and other pollutants from being emitted by the incinerator. Not only is the proposed plan allowing the release of NOx to continue, the new technology being proposed in this air plan is not proven to mitigate the risks from other pollutants either. A recent study found high concentrations of toxics such as dioxins and furans at levels exceeding EU safety standards in the environment, on grass and in eggs locally produced, near an incinerator that burns sewage sludge and other waste.[6] Are these alarmingly high levels of toxics polluting Chester and the region?

Even if the highest technology is employed, incineration technology cannot completely control the release of the pollutants that are in municipal waste, residual waste, and sewage sludge, which contain myriad contaminants that are not destroyed by burning and may not even be acknowledged and/or regulated in the waste stream, much less monitored.

The Operating Permit Renewal Review (August 2021) refers to a residual waste limit of 500 tons/day.[7] This means that the company accepts a significant volume of residual waste from non-municipal sources that results in more waste with toxic or hazardous properties that are then emitted to the air (and end up in the fly ash). There is no batch-by-batch chemical sampling and reporting of what is in the waste stream each day, resulting in a lack of accurate accounting for what is actually being incinerated and emitted and their hazardous or toxic properties.

These pollutants are released from the smokestack to freely enter our lungs and deposit on water, soil, vegetation, and food. Also released by incinerators are saturated particles of toxic dust[8], multiplying the ways people can be exposed. Some highly toxic compounds are not even tested for in the emissions such as per- and poly-fluoroalkyl substances (PFAS). For instance, PFOA has been found in the flue gases from an incinerator in Europe.[9]

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[5] ATSDR ToxFAQs at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwif9ID80Pr-AhVfjYkEHWd3B9IQFnoECBwQAw&url=https%3A%2F%2Fwww.atsdr.cdc.gov%2Ftoxfaqs%2Ftfacts175.pdf&usg=AOvVaw2vpy6pIjsUEwf9z_uzkEzK

[6] *Hidden Emissions*, Case study by Abel Arkenbout; editors: Roberta Arbinolo, Janek Vähk and Yianna Sigalou, Zero Waste Europe, 2018. Downloaded at: https://zerowasteeurope.us3.list-manage.com/track/click?u=8cbf453c18e9074b9004eb8a0&id=04addc108c&e=ea2f9fa000

[7] https://files.dep.state.pa.us/RegionalResources/SERO/SEROPortalFiles/Community%20Info/Covanta/Covanta-TVOP_23-00004_Renewal_SIGNED.pdf

[8] *Hidden Emissions*, Case study by Abel Arkenbout; editors: Roberta Arbinolo, Janek Vähk and Yianna Sigalou, Zero Waste Europe, 2018. Downloaded at: https://zerowasteeurope.us3.list-manage.com/track/click?u=8cbf453c18e9074b9004eb8a0&id=04addc108c&e=ea2f9fa000. PDF p. 7.

[9] *Ibid.* PDF p. 9.

DRN is concerned about the storage and use of aqueous ammonia, which is proposed to be added to the facility. It is listed as a hazardous substance under CWA (40 CFR 116.4 and 40 CFR 117.3). The amount proposed to be kept at the Covanta facility is a 35,000-gallon tank. The Reportable Quantity under the law is 1,000 pounds (as NH_4OH). Aqua ammonia is classified as a hazardous waste under RCRA (40 CFR 261.22 Corrosive #D002). Fish, aquatic life and wildlife can be harmed by exposure, requiring it to be kept from spilling into streams, lakes, or any water systems.[10]

Aqueous ammonia has adverse human health effects. According to the MSDS sheet for aqua ammonia, it is harmful if inhaled, an irritant and corrosive to the skin, eyes, respiratory system, skin and mucous membranes. It can cause "severe chemical burns to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure."[11] If inhaled, "symptoms may include: Sneezing, coughing, burning sensation of throat with constricting sensation of the larynx and difficulty in breathing."[12] It is also corrosive if swallowed and can cause death.

Regarding fire and safety hazards, the MSDS Sheet states[13]:

> **Fire and Explosion Hazard Data**
>
> **Flashpoint:** None
> **Flammable Limits in Air:** LEL/UEL 16% to 25% (listed in the *NIOSH Pocket Guide to Chemical Hazards* 15% to 28%)
> **Extinguishing Media:** Dry Chemical, CO_2, water spray or alcohol-resistant foam if gas flow cannot be stopped
> **Auto Ignition Temperature:** 1,204°F (If catalyzed), 1,570°F (If un-catalyzed)
>
> **Special Fire-Fighting Procedures**
> Must wear protective clothing and a positive pressure SCBA. Stop source if possible. If a portable container (such as a drum, Intermediate Bulk Container [IBC] or trailer) can be moved from the fire area without risk to the individual, do so to prevent the pressure relief valve from discharging or the container from failing. Fight fires using dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Cool fire exposed containers with water spray. Stay upwind when containers are threatened. Use water spray to knock down vapor and dilute.
>
> **Unusual Fire and Explosion Hazards**
> • When heated, product will give off ammonia vapor, which is a strong irritant to the eye, skin and respiratory tract.
> • Outdoors, ammonia is not generally a fire hazard. Indoors, in confined areas, ammonia

[10] https://www.tannerind.com/aqua-msds.html
[11] *Id.*
[12] *Id.*
[13] *Id.*

vapors may be a fire hazard, especially if oil and other combustible materials are present. Combustion may form toxic nitrogen oxides.
• If relief valves are inoperative, heat-exposed storage containers may become explosion hazards due to over pressurization.

Ammonia will be another emitted pollutant added to the air pollution load that the Covanta facility already inflicts on the community. There must be, under environmental justice considerations, an analysis done of this new pollutant's potential impact on the health and safety of Chester's residents and workers under routine emissions and under worst-case scenario events. This will also impact the regional environment and ecosystems. The Delaware River and its inhabitants are at risk of spills or accidents that could be harmful or deadly as well as routine emissions that can be deposited on water and harm ecosystems and species.

Incineration is outdated, expensive and dirty and the Chester Covanta plant illustrates this with its aged systems. Incineration took hold in the 1980's, when the energy produced by burning was seen as a top selling point and government incentives were put in place. However, today renewables that are more efficient and economical are replacing dirty energy sources.

Incineration has been exposed as highly polluting and a constant source of noxious odors and eye-burning, lung-searing pollution for those who live and work here. It's intolerable and oppressive and cannot be allowed to continue. Rather than trying to bootstrap a failed technology, it is way past time to let incineration die. The Covanta incinerator here in Chester should be shut down now and should lead to the shutdown of all waste incinerators.

Submitted by,

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