Covanta Responses to Chester Environmental Justice (Mike Ewall) Claims and Comments on Making A Change Podcast (12/18/20)

(Note: Comments from Chester Environmental Justice transcribed from the Facebook podcast are in bold font, followed by bulleted responses from Covanta)

[Mike Ewall's responses to Covanta's responses are in red following Covanta's points.]

Covanta is the largest trash incinerator in the U.S., burning up to 3,510 tons of trash per day from Philadelphia, Delaware County, New York City, NJ, Ocean City, MD, and many other counties and states.

- First and foremost, modern Waste-to-Energy facilities like the facility in Chester divert waste from landfills to generate energy from the combustion of municipal solid waste – these are not your grandparent's incinerators. The facility is designed to convert the waste that remains after recycling into electricity for homes and businesses and/or steam for export to industries. They have sophisticated air pollution control systems that were not part of old fashioned incinerators. The facility also directly helps address climate change by reducing the amount of greenhouse gases produced at landfills in the US.

Note that Covanta avoids affirming that they're the largest trash incinerator in the U.S. (and later publicly denied this but cannot provide any example of a larger one) and their response below jumps straight to their PR talking points. A list of incinerators ranked by size is here. Their size can be affirmed in the industry directory here and on their website where they admit they burn more than 1,200,000 tons/year (3,289 tons/day) [their webpage used to list their size as 3,510 tons/day]. However, they still lie to PA DEP and their shareholders by misreporting their size as 2,688 tons/day (see p.9 in their latest 10K). They've burned more than 2,688 every year since 1998.

In 2020, they actually burned an average of 3,391 tons/day, with 31% coming from Philadelphia, another 31% from Delaware County, 17% from DE (most/all of which is rerouted Manhattan trash), 16% from NJ, another 4% from NY, 1.6% from MD (all or nearly all from Ocean City), and less than 1% from 4 other PA counties plus NC and VA. Just about 1.8% of the total is Chester City's trash. This data is all reported by Covanta to PA DEP and is available here.

They are not modern at all. Covanta's incinerator in Chester is now 30 years old and would be illegal to operate if permitted in the last decade as it cannot comply with modern air emissions requirements. It's missing two of the four common pollution control devices used at other incinerators, and when questioned about this by an EPA inspector in 2009, they dismissed it by stating that "it costs a lot of money" and would create "operational issues" – even though these controls are used at nearly every other Covanta incinerator.

Trash incinerators are about twice as bad for the climate than landfills, as shown in a life cycle assessment of Covanta's incinerator in Maryland see chart on p.63), and in this factsheet looking at data from incinerators and landfills in the southeast and southcentral regions in Pennsylvania. Covanta's incinerator in Chester released 1,175,209 tons of CO_2 equivalent in 2019 according to the latest data from EPA, making it the second worst trash incinerator in the U.S. for GHG emissions, slightly behind Covanta's incinerator in Fairfax County, VA. Using the same 2019 EPA data, compared to other power plants in Pennsylvania, Covanta's incinerator in Chester ranks 24th out of 146 facilities in greenhouse gas emissions, and when adjusting for size (emissions per unit of energy produced) since power plants produce much more energy, they have the 11th worst greenhouse gas emissions rate in PA.

- Covanta Delaware Valley managed more than 1.2 million tons of municipal solid waste (MSW) in 2019, among the highest totals for all WTE facilities in North America. That said, it is one of several facilities in our fleet that manages more than one million tons annually.

- Continued partnership with municipalities outside of Chester for waste disposal support the continued operation of this critical facility for the management municipal solid waste. They value

the environmental benefits of using this form of disposal as opposed to landfilling waste.

- The facility is also an important economic engine for the region. The Chester facility employs 105 workers on a full-time basis, 46% of whom live within 10 miles of the facility, including residents of Chester.
    - 80% of the entire workforce at Covanta Delaware Valley lives within 20 miles of the facility

As Covanta points out below, only 6 of 105 salaried employees live in Chester City, far below what was promised when the incinerator was first built. Also, any other alternative produces more jobs than an incinerator, even landfills. Recycling and composting produce 5-10 times as many jobs, and deconstruction and reuse produce far more than that. This is why the Teamsters Union supports closing incinerators.

- Besides jobs directly created by the facility, hundreds of other jobs are indirectly created and/or maintained as a result of its presence. Maintenance activities alone account for over $20 million per year spent in local communities.

- Waste-to-Energy facilities like the one in Chester are of often integrated into sustainable urban development as is already implemented in a number of communities around the world.
    - In Europe (where there are over 400 of these facilities), waste-to-energy facilities are the preferred method of waste treatment and are sited in urban centers like Copenhagen, Paris and Dublin, providing vital sources of baseload energy and heat, in addition to sustainable waste management.

In the United States, trash incinerators are routinely rejected, which is why no new trash incinerator has been built at a new site in this country since 1995 despite hundreds of attempts. They are not integrated into any "sustainable urban development." To the contrary, they inhibit sustainable development because they tend to attract other noxious industry, not green businesses. In Chester, Covanta's immediate neighbors have been:

- **DELCORA's sewage treatment plant and sewage sludge incinerator that takes half the county's sewage and trucks in liquid waste from multiple states; now aiming to expand to take the other half of the county's sewage**
- **ThermalPure, the nation's largest medical waste autoclave (closed in the 1990s)**
- **Clean Metals, an ash "recycling" plant only serving this incinerator, which was kicked out of WV and then located next to Covanta where it operated from around 2003-2005 without a permit and had to close only after DEP gave them a permit which they could not comply with**
- **A proposed contaminated soil processing facility known as a "soil burner"**
- **A small oil-burning power plant**
- **A toxic waste site that is now home to a soccer stadium**
- **A combined sewer overflow right where Chester residents fish on the Delaware River to eat**
- **A dusty concrete and aggregate operation**
- **A scrapyard**
- **Railroad tracks**
- **Monroe Energy, the nearby oil refinery in Trainer Borough**

If this is sustainable development, Chester residents would be happy to donate it all to a suburban municipality.

They're the #1 air polluter in the entire 7-county Philadelphia metro area. They contribute to asthma, cancer, and many other health problems with all of their pollution.

Note that Covanta doesn't refute their status as the largest polluter in the region. Depending on which data set (EPA or DEP), which year or span of years you look at, and whether you count airports as industrial point sources rather than a mobile source, 1-2 airports and 1-2 of the oil refineries (Paulsboro in NJ and Monroe Energy in Trainer, PA) could be worse than Covanta in total emissions. Nonetheless, there is no escaping that they're one of the largest air polluters in the region, and the absolute largest in the City of Chester. There is also no escaping that the types of pollutants released are associated with asthma attacks, cancer, and many other health problems.

- After passing through our emissions control system, 99.9+% of what comes out of the stack are normal components of air, including water vapor, nitrogen, oxygen, and CO2. The remaining constituents – see table – are well below allowable limits set by State and Federal regulators that have demonstrated protection of human health and the environment.

Emission	Concentration	3-Year Average (2016-2018)	Permit Limit	% Below Limit
Particulate Matter	gr/dscf@7%O_2	0.002	0.012	82.9
Dioxin/Furan	ng/dscm@7%O_2	0.70	30	97.7
Mercury	µg/dscm@7%O_2	4.43	50	91.1
Lead	µg/dscm@7%O_2	5.27	166	96.8
Cadmium	µg/dscm@7%O_2	0.52	15.8	96.7
NO_X	ppm	118.88	180	34.0
HCl	ppm	0.97	25	96.1
SO2	ppm	6.41	29	77.9

  - **Note:**
    - gr - gram
    - ng - nanogram
    - µg - microgram
    - dscm - dry standard cubic meter
    - @7%O_2 – at 7% oxygen level (standard level used for emissions quantification)

This relatively new talking point for Covanta – that most of their emissions are "normal components of air" is highly misleading, as a large portion of that is CO_2, which is a pollutant that causes global warming.

Being within permit limits does not mean that it's healthy or safe. Their arguments here are thoroughly debunked in pages 32-42 in this recent report. In short:

- **they're held to permit limits that are far weaker than modern limits (which they cannot meet) or compared to limits in some other countries**
- **permit limits are not based on health and safety, but on what the facility can meet**
- **permit limits are also concentration based, so a 500 ton/day incinerator would be permitted to release 7 times less than what Covanta's 3,500 ton/day incinerator in Chester can legally emit**
- **with the exception of four pollutants that are monitored continuously (CO, NOx, HCl, and SO2), they only test other pollutants once a year in a self-administered test under ideal operating conditions which underestimate actual emissions**
- **Covanta has been known to rig their tests – both continuous monitors and annual stack tests – to make it seem as if their emissions are lower than they actually are**
- **emissions of highly toxic mercury, dioxins, and other pollutants are at levels that are quite significant, and there is no safe dose of these and several other pollutants**
- **Covanta could have invested years ago, but chose not to upgrade pollution controls to reduce nitrogen oxides (that trigger asthma attacks), mercury, dioxins, and more.**

- We believe that in order to be good neighbors, it's not enough for us to just meet our required allowable emissions limits – we voluntarily go well beyond our requirements. In the case of dioxins,

we operate nearly 98% better than what is required of us in Chester.

There is no safe dose of dioxins, which are 140,000 times as toxic as mercury. They are missing the carbon injection system they should use to reduce dioxin and mercury emissions. Because they only test once per year under best operating conditions, their testing underestimates dioxin emissions by 30-50 times compared to using continuous sampling technology.

- There are numerous third party studies that refute health risks from incinerators. Several of them are listed below:

The summary below is from a Covanta factsheet that cherry-picks and misrepresents studies. See this refuted in this newer factsheet here.

  - A recent review of air quality health risk assessments and health surveillance programs surrounding Waste-to-Energy facilities done for Portland, OR determined that there was ***not a predictive or actual increase in health issues***, including for those in vulnerable or sensitive "at-risk" populations such as children or the elderly. (Link)

  - A 2019 UK study found ***no evidence*** that exposure to, and living near, a modern Waste-to-Energy facility in compliance with current standards was associated with any excess risk of adverse birth outcomes. (Link)

  - Public Health England found negative health impacts associated with well-regulated Waste-to-Energy facilities likely to be very small, ***if even detectable*.** (Link)

  - Long-term biomonitoring near three Dutch Waste-to-Energy facilities found "***no potential risk*** with respect to human consumption quality of the investigated crops and products in the vicinity." (Link)

- The Massachusetts Department of Public Health found prevalence of childhood asthma in the Merrimack Valley—where several Waste-to-Energy facilities are located—***was not associated*** with emissions of particulate matter (PM10) or volatile organic compounds (VOCs) from the local stationary sources. (Link)

- A Health risk assessment performed for the Montgomery County facility in Maryland found a very low chance for occurrence of potential carcinogenic health effects, and ***no expectation*** of non-carcinogenic health effects as a result of facility emissions. (Link)

Most trash incinerators have at least four pollution control devices. Covanta in Chester has just two -- the fewest in the nation -- and when questioned about it by an EPA inspector, they claimed that putting in the pollution controls that most other communities have would cost them too much.

- The main differences concerning systems used at Covanta Delaware Valley compared with emissions controls used at other Waste-to-Energy facilities operated around the country, including Covanta's, are technological and ultimately have little to no bearing on overall environmental performance. The Chester facility uses rotary technology and cannot be directly compared to Mass Burn facilities, which are more common. Covanta Delaware Valley produces lower concentrations of nitrogen oxides, for example, than other technologies with nitrogen oxide control systems. Mr. Ewall makes this comparison and uses this point in many places without acknowledging this important context.

Mass burn is a term that simply means that the facility burns unsorted trash, as opposed to "refused derived fuel" facilities that burn trash that has had glass and metal removed first. Covanta's incinerator in Chester is a mass burn facility.

Rotary technology is a burner type which Covanta says produces lower levels of some air pollutants. Covanta uses this as an excuse to not have standard pollution control devices that could further reduce emissions. Covanta is the #1 emitter of nitrogen oxide pollution in DEP's southeast region (the 5-county Philadelphia area) and #10 in the entire state, exceeded mostly by much larger coal power plants in western Pennsylvania. Just because they have an emissions *rate* that is within DEP's permit limits does not mean that they should not reduce their overall total emissions by using appropriate controls. Modern controls required of incinerators permitted in the past decade require a limit of 45 parts per million (ppm), far lower than their current limit of 180 ppm or their recent 3-year average of 119 ppm. Chester suffers a childhood asthma hospitalization rate three times the state average, and Delaware County is also above the state average, in part due to this pollutant in our air.

- We are not opposed to implementing more pollution controls. In fact, in our recent sustainability report, we committed to installing more emissions control technology at our facilities, despite already operating well below emissions standards. We also committed to installing these controls starting in EJ communities. We are examining whether we can install a system to further reduce nitrogen oxides from Covanta Delaware Valley at this time.

The false narrative pushed by Mr. Ewall about the EPA inspector is taken out of context from a report dating back more than 10 years. The individual quoted no longer works for the company and did not represent the company's view on this matter. We have and will make numerous investments for superior environmental performance when we are already operating well beyond our requirements. That is the fact of the matter. Covanta remains committed to ensuring that Chester residents have clean air and we are committed to continuous improvement.

It's clear what was in the EPA inspector's report, which we quote and summarize here with added context, and you can read in full original form here. Gene Bonner was an Environmental Manager at Covanta when he represented Covanta to the EPA inspector who quoted him. Bonner worked for Covanta for over 12 years, and was the one who initialed every page of the 2006 agreement where Covanta agreed to fund Chester Environmental Partnership. To

pretend at this point that Bonner did not represent Covanta is a false narrative when he was public and representing the company at many functions for over a decade.

Covanta cannot run a trash incinerator in the same breath as they claim to be committed to clean air in Chester. There's nothing clean about adding 3.5 to 4 million pounds of health-damaging air pollutants to the pollution burden in Chester every year. Even with the most modern pollution controls in place, a trash incinerator is still a major air polluter.

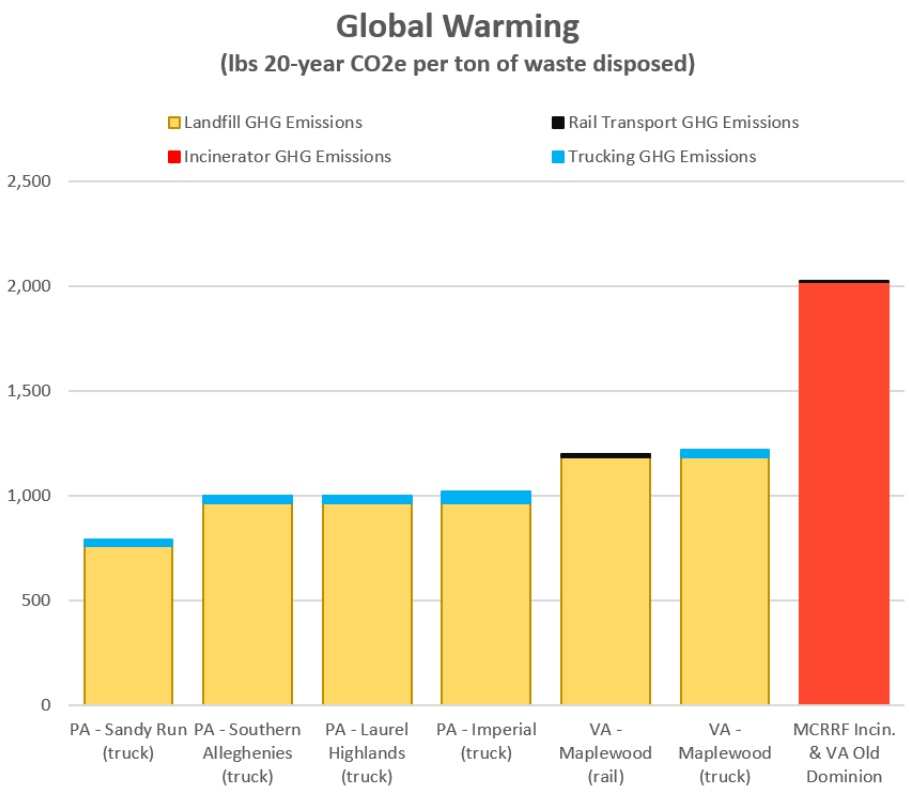
It's 16 years since Covanta bought the incinerator in Chester in 2005. If Covanta is so committed to clean air and is finally considering installing the missing nitrogen oxide controls that EPA pointed out in 2009, why did it take 16 years to decide to start looking into this? Will Covanta bring the incinerator up to modern standards by installing Selective Catalytic Reduction (SCR) instead of the typical – and cheaper – Selective Non-Catalytic Reduction (SNCR) in order to meet the modern 45 ppm NOx limit?

Trash incinerators are the most expensive and polluting way to make energy or to dispose of waste. They're more polluting than burning coal, and worse than directly putting trash in the county's landfill. For every 100 tons they burn, about 30 tons become toxic ash that is trucked to the county's landfill in Berks County. The other 70 tons become air pollution. His claim that they're a global warming solution is a lie. Incineration is worse than landfilling for global warming as well as for air emissions of toxic pollutants, nitrogen oxides that trigger asthma attacks, acid gases, and particulate matter (that contributes to heart attacks and stroke).

All of these claims are documented with government, industry, and academic data in the reports and factsheets available here.

- Mr. Ewall's claim on global warming is flatly false. The Chester facility and others like it are widely recognized by the scientific community as greenhouse gas mitigators, including the Intergovernmental Panel on Climate Change, the very body working to address this urgent global challenge. Please see this reference list for more on this topic.

Using the most comprehensive life cycle analysis available, MEBCalc™, incineration at a Covanta incinerator in Maryland was found to be about twice as bad for the climate as landfills, even when evaluating over 20-years where the impacts of methane from landfills is 86 times worse than CO_2 according to the latest science. See chart (right) from p.63 here.



The industry likes to manipulate global warming emissions data to minimize their role and pose as a climate solution, but that "creative accounting" has been thoroughly debunked. Find this debunked here, here, and most thoroughly, in Chapter 3 here.

- The comment that landfills are better is also inaccurate. The US EPA, and European Commission agree that disposal of waste in a landfill is the worst option from an overall sustainability perspective. In fact, Europe has gone as far as to create landfill bans to end that practice. Landfills emit methane, a greenhouse gas 84-86x more potent over a 20-year timeframe, than carbon dioxide.

Direct use of landfills is less harmful than incinerating waste and landfilling ash, not just in terms of global warming, but in terms of toxic pollution, smog/asthma, acid gas emissions, and particulate matter emissions that contribute to respiratory and cardiac distress. If a landfill is flaring its gas instead of combusting for energy, landfills are also the less harmful in terms of cancer-causing emissions, algae blooms, and environmental toxicity.

Here are the results of the life cycle analysis done on Covanta's Maryland incinerator vs. 10 landfills (mostly in PA):

Impact per ton of waste transported and incinerated or landfilled

Impact	**Measure** (lbs of equivalent emission, below, per ton of waste)	**Incineration** (MCRRF) (lbs/ton of waste)	**Landfilling** (range of 10 landfills) (lbs/ton of waste)	**Which is worse?**
Global warming	Carbon dioxide (CO_2)	2,023.89	779 – 1,220	Incineration
Human health (toxic chemicals)	Toluene	219.80	0.89 – 4.10	Incineration
Smog formation (asthma)	Ozone (O_3) [NOx & VOCs]	38.64	2.43 – 15.51	Incineration
Acidification (acid rain, respiratory)	Sulfur dioxide (SO_2)	2.38	0.08 – 1.28	Incineration
Human health (carcinogens)	Benzene	0.46	0.005 – 1.119	* (Depends)
Human health (respiratory/heart)	Fine particulate matter ($PM_{2.5}$)	0.23	0.001 – 0.012	Incineration
Eutrophication	Nitrogen	0.07	0.036 – 0.159	* (Depends)
Ozone depletion	CFC-11	0	0.001 – 0.004	Landfilling
Eco-toxicity	2,4-D herbicide	0.00088	0.00002 – 0.00128	* (Depends)
Monetized summary	U.S. Dollars	**$258.58**	**$52.37 – $102.97**	**Incineration**

Largest impact ↓ smallest impact

Europe made a mistake in overinvesting in incineration, and is now working to dial that back as they work to tackle their contribution to the climate crisis. European landfill bans have not banned landfilling ash, as the toxic byproduct of incineration still ends up being landfilled (or worse). Zero Waste Europe wrote a policy paper showing that "in all 7 European countries where a landfill ban has been implemented, it resulted into more waste being diverted towards incineration than towards recycling."

Trash is reduced by 90% in volume, but only 70% in tonnage. The rest doesn't disappear, but becomes a higher volume of air pollution for us and the region to breathe. A good Zero Waste system can reduce waste similarly without all of the toxic air pollution and without making the landfill more toxic.

> **S. Harp: So there is an alternative? I've always thought that this was the only way. Interesting... (15:43)**

- There are currently only two ways to manage the waste our society produces. Waste-to- energy is one. Landfilling is the other and is considered by the US EPA and the European Commission, among other environmental regulating bodies, to be the worst from an environmental perspective.

See above for documentation of incineration (and landfilling ash) being worse than direct landfilling. There is a third way, which involves following the Zero Waste Hierarchy to massively reduce waste (upwards of 90%)

and using material recovery and biological treatment prior to landfilling. Material recovery pulls extra recyclables out of the waste stream. Biological treatment stabilizes the organic fraction that remains with a digestion process. This leaves a small, stabile residual to be landfilled which weighs less (water weight is reduced with digestion) and will be far less gassy and stinky in a landfill.

- Mr. Ewall again pushes a false narrative here. There are currently no other commercially available technologies or systems that manages all the residual waste that remains after recycling.

Read the report linked above about material recovery and biological treatment prior to landfilling.

- In an ideal world, each community would have their own solid waste disposal outlet and manage their own waste. Unfortunately, there is no technology or innovation available that enables that today. The bottom line is that after recycling, there are two options to dispose of the waste we generate – waste-to-energy and landfills. Waste-to-energy is recognized throughout the world as the more sustainable option – for people, the environment and the economy.

Read the report linked above about material recovery and biological treatment prior to landfilling.

- All of the trash combusted at Covanta Delaware Valley would be otherwise destined for a landfill, which emit large quantities of greenhouse gases including methane.

Read the report linked above about material recovery and biological treatment prior to landfilling, as well as the previously referenced material showing that incineration is far worse for the climate than landfills. In landfills, much of the carbon is sequestered, whereas with incinerators, all of it is immediately injected into the air.

Covanta's violations, company-wide, as reported by their incinerator in Chester:

http://www.energyjustice.net/.../covanta/violations2018.pdf
-page 37 lists Covanta being busted by the state of Connecticut for tampering with their continuous emissions monitoring system to make it seem as if their emissions are lower than they really are

- This link does not work. This is absolutely not our practice. There is no context given by Mr. Ewall or timeframe for the purported violation.

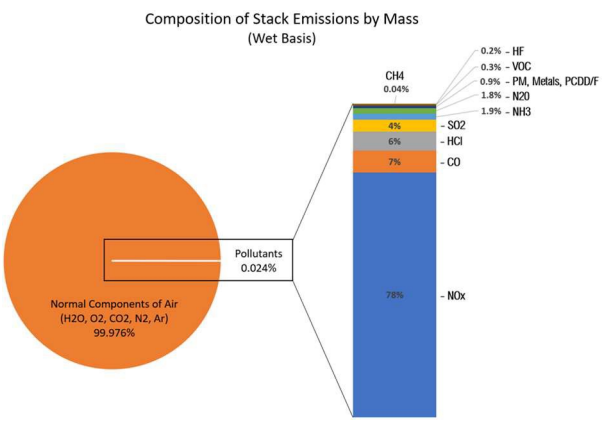
Older violations:
http://www.energyjustice.net/.../covanta/violations2006.pdf

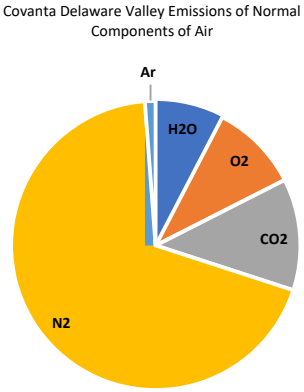
- This link does not work.

The links work fine when copied properly. Here's Covanta's report of their company-wide violations to PA DEP in 2006, and their report in 2018. Note that these reports are not complete, and that 2018 does not include all of 2006. See page 37 in the 2006 file for their being busted by CT in the 1990s: "Civil action filed by Attorney General alleging an employee adjusted a continuous emissions monitoring device in Feb, 1993 to alter a reading in order to pass a continuous emissions monitoring system (CEMS) audit." They were also busted in Tulsa, Oklahoma by the United States Attorney's Office for "alleged improprieties in the recording and reporting of emissions data" as stated in Covanta's own 10-K report to their shareholders in 2019.

This is a lot of BS. They list carbon dioxide pollution (heating the planet) as if it's a normal thing in the air and don't admit how much of that big orange circle is CO2.

- As indicated during the podcast, over 99.9% of the gases emitted from the stack are considered normal components of air. Of that 99.9%, 68.8% is made up of nitrogen (N_2). Nitrogen makes up about 78% of the air in Earth's atmosphere.





Covanta proves us right. See "CO_2" in their orange circle, where they pretend that this is a "normal component of air" as if CO_2 is not a global warming pollutant.

- About 12.5% of overall emissions from the stack are in the form of carbon dioxide (CO_2).
- CO_2 is one Greenhouse gas among a number of gases emitted from a variety of processes, which are a large driver of climate change we are experiencing today in the form of global warming, rising sea levels, and increased incidence of natural disasters including hurricanes.
- CO_2 is often used as a reference (almost like a currency) for stating amounts emitted of other greenhouse gases. A simple example is the EPA Greenhouse Gas Reporting Program, which reports emissions of all greenhouse gases in 'metric tons CO_2 equivalent'.
- In general, for every ton of waste processed at a WTE facility instead of being landfilled, one ton CO_2 equivalent of emissions is reduced from the atmosphere

This last point is completely false. In fact, for every ton of waste combusted at an incinerator, approximately one ton of CO_2 equivalent of emissions is EMITTED from the stack. Only by erasing most of those emissions as irrelevant, and doing multiple (inappropriate) subtractions of emissions from competing industries, can they claim to be a net reducer of greenhouse gas emissions. The life cycle assessment of Covanta in Maryland found that they emit 2,024 pounds of CO2 equivalent (about one ton) for every ton of waste burned.

One of the sources that corroborates this is in this article on an effort trying to capture as much CO2 from trash incineration as possible. In this instance, it's to their benefit to count it all, unlike the industry assumptions that seek to minimize incinerator CO_2 emissions in a life cycle analysis. It quotes the technical director of a Norwegian incinerator stating: "So 300,000 tonnes comes here every year and we can capture 300,000 tonnes CO_2 from those 300,000 tonnes of waste. So its approximately one ton of CO_2 per ton of waste that can be captured."

This pie chart also doesn't disclose how this amount of pollution is still quite toxic and significant, making them the worst air polluter in the 7-county Philly area.

- Again, more than 99% of what is emitted from the stack at Covanta Delaware Valley are

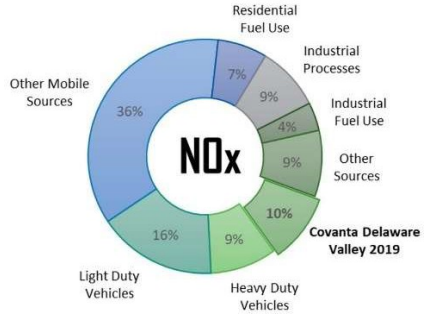
considered normal constituents of air.

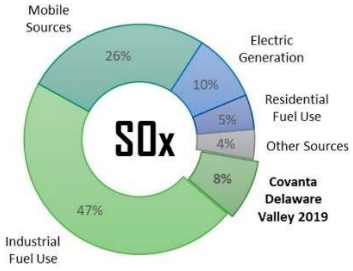
Totally dodges the point.

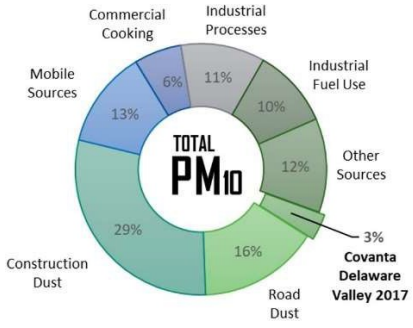
- Covanta Delaware Valley is a minor source of criteria pollutants emitted in Delaware County. Major sources of NOx, SOx, and Particulate Matter (PM2.5 and PM10) include mobile sources like cars and trucks, industrial fuel use, and construction dust. See below:

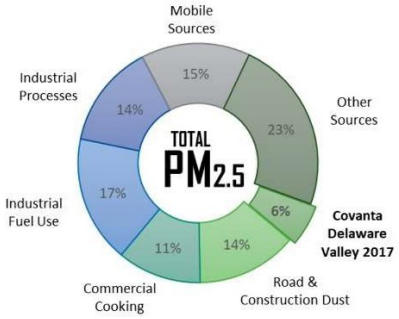
Very misleading, since their own air permit classifies them as a "major source" of air pollution under the Clean Air Act. Their status as one of the largest air polluters in the region also shows how much of a lie this is. Only by comparing themselves to the aggregate of the every car and truck, fossil fuel heating systems, and construction dust can they attempt to look "minor." Covanta's NOx emissions are equal to approximately 120,000 passenger cars.

A comparison to other sources on toxic emissions such as dioxins, mercury, or arsenic – or on acid gases like hydrochloric acid – would show that they're a huge source even when factoring in the transportation and heating fuel sectors. They conveniently focus on pollutants where they know other sources are a larger share when all added up.

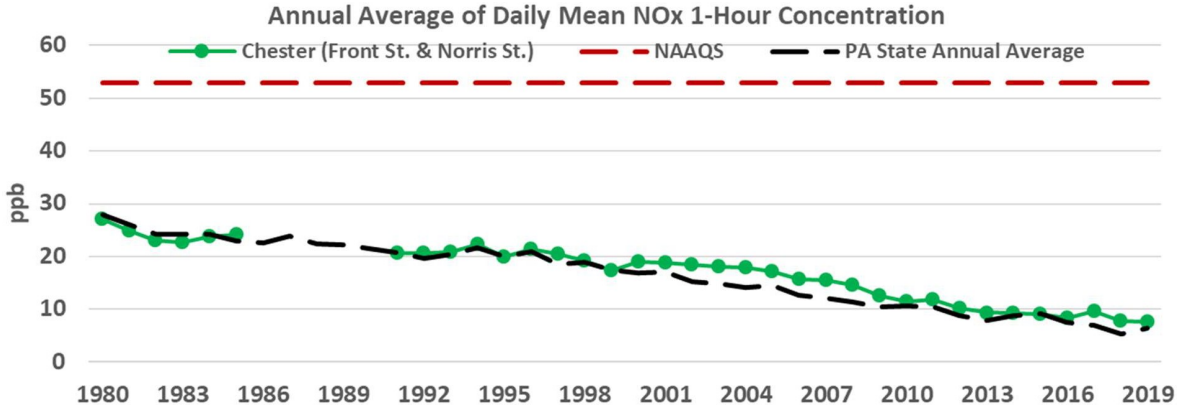


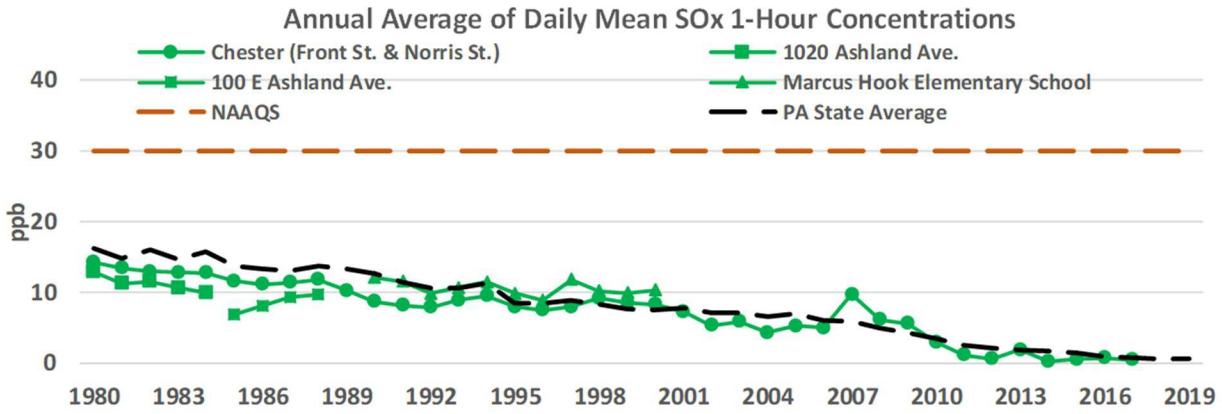






- In general, air in Chester and Delaware County is improving over time according to data gathered from EPA Air Monitoring Stations. See the charts below for details.





- US EPA Air Monitoring Data indicates annual concentrations of particulate matter-2.5 (PM2.5) in Delaware County, have been reduced nearly 70% over the last 20 years (1999-2019)

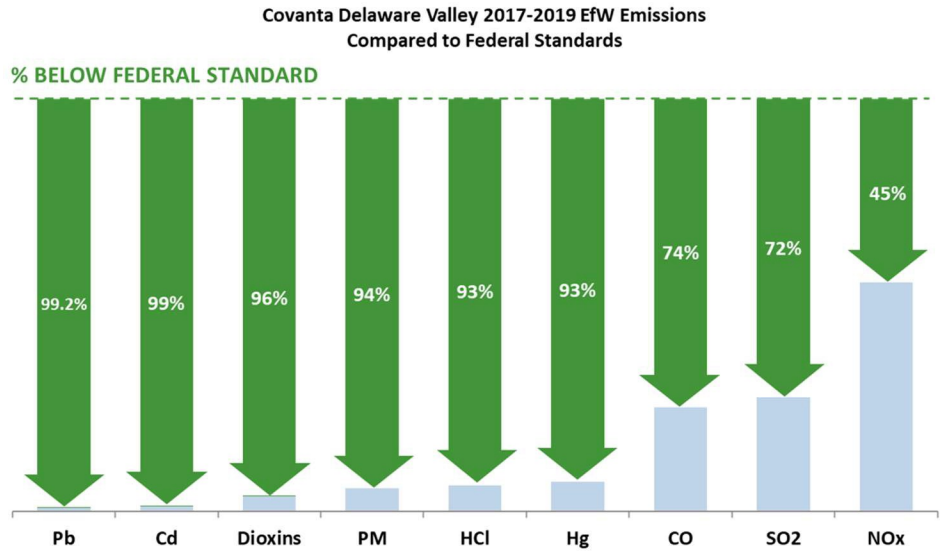
These emissions reductions are driven by oil refineries closing and power plants moving away from burning coal, such as the Eddystone Generating Station and the Kimberly Clarke paper mill ending their uses of coal and waste coal, respectively. These emissions reductions do not justify Covanta continuing to be a huge air polluter. In fact, as other major polluters close, it just makes Covanta a larger share of the remaining industrial air pollution.

New standards are a LOT more stringent. If they had to meet modern standards, they'd have to close down immediately.

- This is another falsehood from Mr. Ewall.

The modern standard for nitrogen oxides (NOx) is 45 parts per million (ppm) which can only be met using Selective Catalytic Reduction (SCR) equipment. Covanta doesn't even have the typical Selective Non-Catalytic Reduction (SNCR) installed at their Chester incinerator. If modern standards applied to any new incinerator permitted in the past decade were applied to Covanta's Chester incinerator, it would not be legal to operate. Nothing false about that. Earlier in this document, Covanta admits that their average NOx emissions are 119 ppm. That's more than twice the modern 45 ppm limit. Find this and the misleading aspect of the chart below debunked on pages 34-37 in this report.

- The Chester facility performs significantly below the Federally mandated standards we are required to maintain today. Please see the chart below for details.



This mainly proves how weak U.S. standards are for 30-year old trash incinerators. Also, Covanta doesn't know what their actual emissions are for most of these, since they only test themselves once a year under idealized operating conditions. As stated earlier, continuous sampling of dioxins shows actual emissions to be 30-50 times higher than what we think they are in the U.S. when testing for just six hours a year.

In addition, the facility performs **below** standards for new facilities in the U.S. and below stringent European Union standards. Please see chart below.

Pollutant	207-2019 Delaware Valley Resource Recovery Facility[a]	U.S. Federal Std. Existing Units[b]	U.S. Federal Std. New Units[c]	2000 European Union Directive (Dublin, IE)[d]	Durham-York, Canada (2015)	Units
NO_X	113.7	205[e]	150[e]	137[f]	90	ppmv
PM (F)	1.4	25	20	13[f,g]	13	mg / m^3
SO_2	8.1	29	30	25[f]	19	ppmv
HCl	2.0	29	25	8.6[f,g]	8[g]	ppmv
Hg	3.7	50	50	65	21	µg / m^3
Cd	0.4	35	10	65[i]	10	µg / m^3
Pb	3.4	400	140	654[j]	69	µg / m^3
PCDD/F (Total)	1.1	30	13	11[k]	7[k]	ng / m^3

The NOx standard for new incinerators in the U.S. in permits issues in PA, MD, and FL in the past decade has been 45 ppm, not 150 ppm. And as stated above, their claimed emissions are not based on real-time monitoring except for NOx, SO_2, and HCl.

They don't even know their chemistry! Nitrous oxide (N2O) is laughing gas that dentists use. It's a greenhouse gas. Nitrogen oxides (NOx) are what triggers asthma attacks. They emit both, but much more NOx. They're a huge source of NOx.

- NOx refers to emissions of both nitric oxide or NO as well as nitrogen dioxide or NO2. The most prevalent form of emissions of NOx are mobile sources, including the cars and trucks.

When they take a few weeks to respond, they can get their chemistry right, but in the interview, they mixed up two chemicals with very different consequences.

- Covanta Delaware Valley is a minor contributor of NOx emissions compared to other sources in Delaware County, according to the US EPA's Inventory of US Greenhouse Gas Emissions and Sinks.

They're legally a "major source" of NOx. According to their latest emissions data available from PA DEP, they reported releasing 1,030 tons of NOx in 2019. The major source threshold for NOx emissions from trash incinerators is 10 to 100 tons/year depending on how badly polluted the local air already is. See Table 1 in this EPA webpage explaining it. And as described earlier, Covanta is the #1 emitter of NOx pollution in DEP's southeast region (the 5-county Philadelphia area) and #10 in the entire state, exceeded mostly by much larger coal power plants in western Pennsylvania. By saying they're a minor contributor, is to play with words and hide behind the combination of every vehicle in the county. If they want to be compared to cars, they could point out that their NOx emissions are equivalent to approximately 120,000 passenger cars.

They have no NOx controls in place. $3 million isn't enough to install a NOx reduction system.

- Emissions controls used at Covanta Delaware Valley perform as good or better than other facilities in term of limiting emissions of NOx, other criteria pollutants, as well as other toxic compounds.

They have no NOx controls, but they mislead readers with sentences like this because they count their rotary kiln burners as if they are air pollution control devices.

- The health of community members surrounding Covanta Delaware Valley has always been and still remains paramount to operations at the facility and we remain committed to continuous improvement and emissions reductions.

It would be nice if that commitment meant installing the two missing air pollution control devices 15 years ago when Covanta bought the plant. They're just now starting to evaluate doing one of them… the one for nitrogen oxide control. They're also missing the carbon injection system that reduces the most toxic pollutants such as dioxins and mercury. Covanta is responsible for 48% of the industrial emissions of mercury in the county… and they cannot dilute that number by trying to count cars.

Let's put this supposedly small amount of pollution in perspective. They emit about 60 pounds of mercury per year into the air. Mercury is incredibly toxic. It's one of the pollutants for which there is no known safe level of exposure. A highly cited Minnesota study found that if approximately one gram of mercury (the amount in a single fever thermometer) is deposited to a 20-acre lake each year from the atmosphere, this small amount, over time, can contaminate the fish in that lake to the point where they should not be eaten. 60 pounds of mercury equals 27,215 grams. That means that, in a typical year, they're releasing enough mercury sufficient to keep over 27,000 20-acre lakes so contaminated that the fish are not safe to eat. And this isn't counting the mercury that ends up blowing off of the incinerator's ash trucks as the toxic ash is hauled to a landfill, or off of the top of the landfill where they use this as landfill cover, or into the Delaware River where they try in Bucks County to "recycle" this toxic ash.

- The study referred to here is not linked. The data presented is misleading and assumes that any emission of mercury to the air is equivalent to mercury directly deposited into a body of water.

Yes. It's an analogy. Not every bit of mercury will land on a water body. Much will also land on homes, yards, parks, playgrounds, farms, forests, etc. Find the study discussed here.

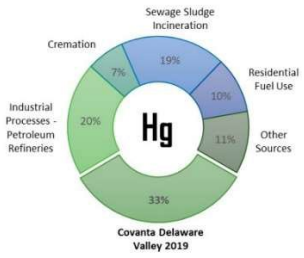
They conveniently try to minimize how polluting they are by comparing only the pollutants that cars and trucks also release. They're still a huge source of NOx that triggers asthma attacks, where Chester children have an asthma hospitalization rate 3 times the state average. However, let's compare them to the rest of the county for toxic emissions of dioxins, mercury, lead, arsenic. It won't be as favorable....

- We are a minor source of lead (Pb), cadmium (Cd), acid gases, and carbon monoxide (CO) in Delaware County, among other significant sources. We are about one third of the total mercury emitted in Delaware County.

1/3rd is incorrect. Covanta's share of mercury pollution in the county is 48% based on the latest data reported to PA DEP (2019). The latest EPA data (2017) puts the figure at 52%.

- We have been proactive in providing mercury take-back events to offer residents the opportunity to keep items with mercury out of the waste stream entering the facility.

E



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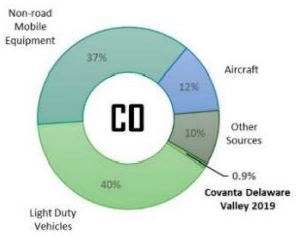
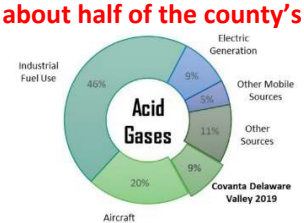
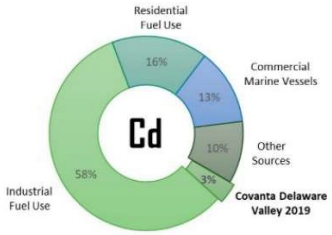
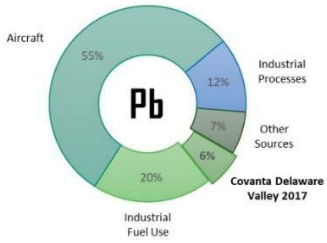


about half of the county's mercury emissions, with







- As the charts above demonstrate, the fact is Covanta is a relatively small source of NOx and other major pollutants that may constitute themselves as a trigger for people with asthma, in Delaware County.

It's not "relatively small" when talking about a facility that is one of the largest sources of NOx in the state, is the largest in the region. Shutting Covanta would be the equivalent of taking approximately 120,000 passenger cars off the road. That's not small.

- We are not opposed to implementing more pollution controls. In fact, in our recent sustainability report, we committed to installing more emissions control technology at our facilities, despite already operating well below emissions standards. We also committed to installing these controls starting in EJ communities.

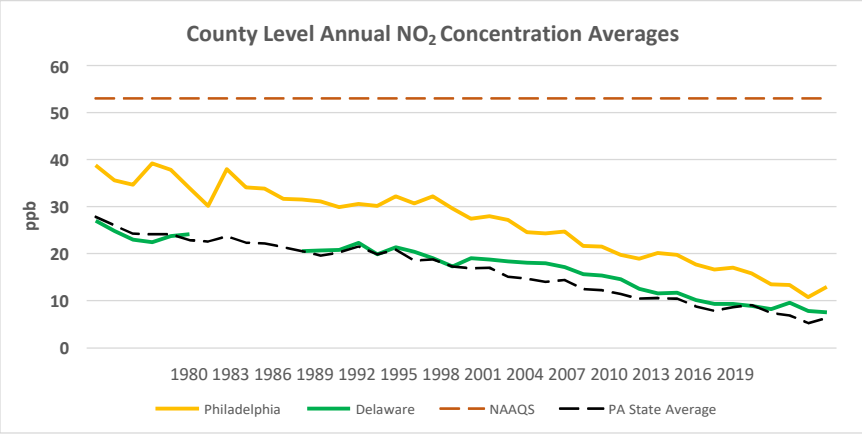
Covanta was opposed to implementing more pollution controls when an EPA inspector inquired in 2009. Glad to hear a different tune now, but no improvement in pollution controls can justify having the largest incinerator in the nation sitting in a community as polluted and poverty-stricken as Chester.

- We are currently researching new methods and technologies to further improving existing emissions controls at Covanta Delaware Valley, including NOx.

Already addressed above.

- Generally, the air in Chester has continuously improved in overall quality according to EPA air monitoring data and is better than neighboring Philadelphia. <u>When it comes to NOx specifically, NO_2 concentration in Delaware County remain 59% lower than in nearby Philadelphia County as of 2019. See graph below.</u>

Already addressed above.



NOTE: NAAQS refers to the National Ambient Air Quality Standards, which are a Federally mandated

standard required according to the Clean Air Act.

In response to their selective use of studies that find no health impacts, see a more recent review at: http://www.energyjustice.net/incineration/healthstudies.pdf

- There are numerous third-party studies that refute health risks from incinerators. Several of them are listed below:
  - A recent review of air quality health risk assessments and health surveillance programs surrounding Waste-to-Energy facilities done for Portland, OR determined that there was ***not a predictive or actual increase in health issues***, including for those in vulnerable or sensitive "at-risk" populations such as children or the elderly. (Link)
  - A 2019 UK study found ***no evidence*** that exposure to, and living near, a modern Waste-to-Energy facility in compliance with current standards was associated with any excess risk of adverse birth outcomes. (Link)
  - Public Health England found negative health impacts associated with well-regulated Waste-to-Energy facilities likely to be very small, ***if even detectable.*** (Link)
  - Long-term biomonitoring near three Dutch Waste-to-Energy facilities found "***no potential risk*** with respect to human consumption quality of the investigated crops and products in the vicinity." (Link)
  - The Massachusetts Department of Public Health found prevalence of childhood asthma in the Merrimack Valley—where several Waste-to-Energy facilities are located—***was not associated*** with emissions of particulate matter (PM10) or volatile organic compounds (VOCs) from the local stationary sources. (Link)
  - A Health risk assessment performed for the Montgomery County facility in Maryland found a very low chance for occurrence of potential carcinogenic health effects, and ***no expectation*** of non-carcinogenic health effects as a result of facility emissions. (Link)

Already addressed above.

Haha... No. They did not look at Chester in these studies. Most of these studies are from Europe and aren't studies, but reviews of other studies, and biased to ignore where health impacts were found. Most that found impacts found elevated cancers.

All of the studies Chester Environmental Justice cites in its 'Trash incineration FACT CHECK: Covanta's "Energy-from-Waste & Health Risk" flyer' are from Europe as well. Europe has 44 individual countries, that as of 2017 had in total at least 492 WTE facilities. This number is continuously growing as landfilling is gradually phased out of waste management by many countries, furthermore Europe is likely to remain a hub for research regarding WTE.

Pointing out that the available research is from Europe only shows how little has been studied in the U.S. That Europe is littered with incinerators doesn't prove that it's environmentally preferable. Environmentalists are battling incinerators hard throughout Europe, just as they are all over the world.

- Studies from any part of the world are potentially valid for this discussion, pending the statistical and scientific rigor associated with the methods used. All studies should be evaluated on an

individual basis.

Agreed. Much of what Covanta sites are reviews of studies, some of which cherry pick which studies to include and deliberately dismiss ones that show harm to health.

- Here, is a number of articles, from both Europe and the US that generally refute knowledge that particular health effects are directly associated with proximity to WTE facilities:

    - A recent review of air quality health risk assessments and health surveillance programs surrounding Waste-to-Energy facilities done for Portland, OR determined that there was ***not a predictive or actual increase in health issues***, including for those in vulnerable or sensitive "at-risk" populations such as children or the elderly. (Link)

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    - A Health risk assessment performed for the Montgomery County facility in Maryland found a very low chance for occurrence of potential carcinogenic health effects, and ***no expectation*** of non-carcinogenic health effects as a result of facility emissions. (Link)

He's lying about the Greenpeace study, too.

We have no reason to lie about this. We take this very seriously and work to provide the communities we serve with the best available information on what we do. We were repeating the comment of the principal author of the earlier Greenpeace study that had raised concerns. He was asked in an interview if he still had concerns about health impacts from modern incinerators. It said, "**A lot of the health-impact concerns about incineration have died away," says Paul Johnson, principal scientist at the organization's research lab and an author of that damning 2001 report. "The conventional wisdom is with all the emissions control, they are as safe as houses."**

Without a citation, it's hard to respond to, but regardless of what one person at Greenpeace may have said, Greenpeace remains opposed to incineration and understands that it's a major pollution problem.

To see their health study factsheet back to back with the rebuttal, see:

Covanta: http://www.energyjustice.net/incineration/CovantaWP6.pdf

Fact check: http://www.energyjustice.net/incineration/healthstudies.pdf

- The “rebuttal” linked here selectively produces quotes from the articles referenced, and includes no single reference to any chart, graph, table or piece of quantitative evidence of any kind that supports claims about negative health outcomes increased by proximity to WTE facilities.

Yes, all quoting is necessarily selective. Since it’s in response to Covanta’s flyer arguing that no health studies have found a connection between incineration and harm to human health, the “fact check” response selectively points out where health studies *have* found connections. It also discusses why it’s hard for any study to find such connections.

"We have to be accepted by a community." Which is why Covanta has forced themselves on communities all over. Every community incinerators are proposed in fights them. Most win. Some aren't as lucky. Community acceptance in their view is to buy off the community and use groups they fund like Rev. Strand's Chester Environmental Partnership to look like they have support from the community.

- Community acceptance drives us to provide local communities with the facts about WTE, so that they can understand the benefits provided to them through the presence of a Covanta WTE facility in their community.

Covanta provides spin, not facts. Anyone reading this far should be able to determine that for themselves.

- Part of being a good neighbor means addressing concerns and questions raised by community members and all others wishing to engage with us regarding the technical and environmental aspects of WTE, something we are always happy to facilitate.

If Covanta if so open to engagement, how about unblocking Mike Ewall on Facebook so he can respond to people who comment on your sponsored ads that show up on his feed? In Camden, Covanta canceled a meeting with the community group questioning them as soon as they heard that Mike Ewall would be part of the meeting. Why is Covanta afraid of engaging the public when they have someone with facts at their side?

How many of your employees work and live in Chester? Hmm...

- 30 of 105 total employees at Covanta Delaware Valley live within 5 miles of the facility. Six salaried employees are Chester residents. This does not include temporary labor which is often sourced from the immediate area. We are inherently invested in the betterment of the surrounding Chester and larger Delaware County community.

Thank you for admitting that just under 6% of your salaried employees are Chester residents. When the incinerator was built, it was promised that this percentage would be far higher.

They support bulk trash and litter cleanups out of PR. They support plastic recycling because they get too much plastic and can burn more (and make more money) when they have more wet waste that doesn't burn as well.

- This is another falsehood. Wet waste is an issue for operations, requiring additional controls in order to maintain our permit limits, including carbon monoxide (CO). This incurs costs, not savings for our facility.

Does this mean Covanta will fund and advocate for community composting programs to get all the wet food scraps and yard waste out of the trash stream?

- We support all forms of recycling and sustainable urban development in general, because we

believe in sustainability on a holistic level. This includes recycling of the plastics that frequently are disposed of with the rest of residual waste destined for our facility.

Yes, we understand that less plastic in the waste stream is important for your industry since many facility boilers are only rated at a certain amount of BTUs per hour, and plastic pushes the heat up too high to be able to feed more waste. Since Covanta supports recycling so much, please help Philadelphia stop mixing recycling with the trash.

- We support the local community in clean-up efforts because we are primarily focused on providing net environmental benefit for the local communities in which we operate. Picking up waste discarded improperly is one way to help.

It's also good PR, yet the trash is more harmful to the environment when burned than if it's on the side of the road. Not that we support littering, but there would be less litter around Chester if not for the slew of waste trucks driving through to Covanta's plant.

- WTE is fully compatible with green development and is in fact already a crucial part of many sustainable waste management schemes implemented around the world, including in Denmark, Germany, Sweden, and the Netherlands, among others.

Sweden solves their incinerator ash problem by dumping much of it on an island in Norway. And using some to build roads (linear unlined toxic ash landfills). Just because it's across the ocean doesn't mean it's magically green. It's a problem here, and it's a problem in Europe.