

Oregon PSR recommendation that Metro decide against adoption of its waste-to-energy incineration proposal

From: Joseph Miller

Date: Fri, Oct 7, 2016

Subject: Oregon PSR recommendation that Metro decide against adoption of its waste-to-energy incineration proposal

To: Tom Hughes, Shirley Craddick, Carlotta Collette, Craig Dirksen, Kathryn Harrington, Sam Chase, Bob Stacey

Cc: Ken Ray - Metro, Steve Law - Portland Tribune, Tracy Loew - Statesman Journal, Rob Davis - The Oregonian, Daniel Forbes - The Portland Mercury, Gary Andes - Oregon DEQ

Dear Metro Chair Hughes, and Councilors Craddick, Collette, Dirksen, Harrington, Chase, and Stacey,

Attached find a PDF presenting new evidence and updates that strongly argue against adoption of Metro's proposal to begin sending one-fifth (200,000 tons) of our tri-county area's waste to the Covanta Marion waste-to-energy incinerator in Brooks when contracts expire at the end of 2019. Both Metro and Covanta have said that such an increase will require doubling the capacity of the plant.

Based upon this new evidence and updates, and prior presentations of evidence, the Environmental Health Working Group of Oregon Physicians for Social Responsibility respectfully requests that Metro decide against adoption of its waste-to-energy incineration proposal.

Sincerely,

Joe Miller PhD

Member, Environmental Health Working Group, Oregon Physicians for Social Responsibility

Primary contact information: jmiller@saintmarys.edu, [503 295 7747](tel:5032957747)

Kelly Campbell

Executive Director, Oregon Physicians for Social Responsibility

--- PDF ---

October 7, 2016

Metro Council
600 NE Grand Avenue
Portland, OR97232

Re: Recommendation that Metro decide against adoption of its waste-to-energy incineration proposal.

Dear Metro Chair Hughes, and Councilors Craddick, Collette, Dirksen, Harrington, Chase, and Stacey,

Below find new evidence and updates that strongly argue against adoption of Metro's proposal to begin sending one-fifth (200,000 tons) of our tri-county area's waste to the Covanta Marion waste-to-energy incinerator in Brooks when contracts expire at the end of 2019. Both Metro and Covanta have said that such an increase will require doubling the capacity of the waste-to-energy plant.

1. Metro's advocacy for incineration is based in part on assurances from DEQ that air emissions from Covanta Marion are well below permit limits. Such assurances seriously misrepresent the emissions for one group of pollutants -- nitrogen oxides (NOx). Rather than being well below permit limits, average emissions of NOx -- an EPA criteria pollutant -- were only 13-14% below DEQ permit limits in 2011 through 2015.

Metro's advocacy for incineration is based in part on assurances from DEQ that the emissions from Covanta Marion are well below permit limits. An October, 2015 article commissioned for Metro's website, for example, states that:

[...] Gary Andes, natural resources specialist at the Oregon Department of Environmental Quality, reviews and inspects the Brooks facility and says it has never been out of compliance with state or federal emissions rules for lead, mercury, dioxins, sulfur dioxide, nitrous oxide and other particulates. In fact, he says, most of those are "way under, at only about 10 or 20 percent" of the permit limits. [...] [1]

Similarly, a March, 2015 Metro article reports that:

[...] According to Gary Andes ... the Covanta Marion facility has emissions well below the limits listed in its permit ... "They [Covanta] run a tight ship," he said. "They have not had any compliance issues at all." [...] [2]

Despite such assurances, however, I recently came across data that indicate that the statements DEQ has been making, and Metro has been highlighting, are both inaccurate and misleading for one major pollutant: nitrogen oxides (NOx).

More specifically, rather than being "well below the limits listed in its permit," the average emissions of NOx for Covanta Marion were only 13% below DEQ permit limits in 2014-15 [3], and only 14% below permit limits in 2011-2013 [4].

2. High levels of nitrogen oxides impair respiratory and circulatory health, and contribute to ground-level ozone (smog), acid rain, water quality deterioration, and global warming. Prevailing winds can transport NOx great distances.

Nitrogen oxides (NOx) are one of six common air pollutants (or "criteria pollutants") regulated by the EPA under the Clean Air Act. [5] Nitrogen oxides are actually a group of pollutant gases composed of nitrogen and oxygen, and nitrous oxide -- referenced by Gary Andes of DEQ in the quote above -- is one of the gases within the group. [6] EPA regulates NOx and other criteria pollutants because of the many harms that such pollutants inflict on health, environment, and property.

The EPA's National Center for Healthy Housing (NCHH) notes that the human health concerns related to nitrogen oxides "include effects on breathing and the respiratory system, damage to lung tissue, and premature death. Small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and aggravate existing heart disease." [7]

The NCHH also notes that "NOx and the pollutants formed from NOx can be transported over long distances following the prevailing winds," and that NOx gases and derivatives contribute to ground-level ozone (smog), acid rain, increased nitrogen loading in water bodies, global warming, and additional problems. [7]

3. Nitrogen oxides are one of the pollutants for which continuous emissions monitoring is mandated. Because they are continuously monitored, there can be no doubt about their levels being representative of daily and yearly emissions under normal operating conditions.

Only three of the pollutants referenced by Gary Andes in the quote above (sulfur dioxide, nitrous oxide, particulate matter) are monitored continuously, and thus yield data we can be sure is representative of "normal" daily and yearly emissions (emissions during startups, shutdowns and malfunctions are often high, but are never tested or reported). Whether reported emissions of lead, mercury, and dioxins are representative of actual daily emissions, however, is much more uncertain, because such pollutants (and many others) are monitored only once a year, often under optimal conditions, and the results are extrapolated to project yearly emissions. [8] For more on the inadequacies in the monitoring of emissions from incinerators see reference 9.

4. Oregon DEQ's limit for nitrogen oxides is less stringent and higher than the federal EPA limit. Thus, while Covanta Marion's average emissions of NOx in 2011 through 2015 were 13-14% below the less stringent Oregon limit, they were only 4% below the more stringent and lower federal limit.

References 3 and 4 list both the federal EPA and Oregon DEQ limits for nitrogen oxides, and reveal that DEQ's limits are less stringent than those of the EPA. More specifically, the federal EPA limits applicable to Covanta Marion are 185 parts per million (ppm), whereas the Oregon limits are 205 ppm. Thus, Covanta Marion's average nitrogen oxides emissions of 178 ppm in 2014-2015, and 177 ppm in 2011-2013, were only 4% under the federal EPA limits of 185 ppm during the entire five year period! [3,4]

One wonders, "how can this be?" Isn't it the case that a state may set limits that are the same as, or more stringent than, the federal limits, but not less stringent?

Because of the importance of this question, and because nitrogen oxides seem to be the only pollutant for which ODEQ limits are less stringent than federal regulations [see 3,4], I directed the question via email to Gary Andes at DEQ. His reply (below) was very helpful and informative:

"I'm not sure where the 185 ppm came from. I asked the Covanta plant manager and environmental manager and they said it had been in the slide they used for a long time but really didn't know its origin. The only place I can find that number is in 40 CFR Part 60 Subpart Cb which is the federal regulation that applies to the Covanta plant. That rule is actually an emissions guideline rule which Oregon is then required to adopt parts as we need to for existing municipal waste combustors. The rule contains two NOx limits—the 205 ppm we have in our rules and a 185 ppm limit if the facility is using an emissions averaging plan, which Covanta is not. That limit is used if a plant had multiple combustors, some of which might be over 185 ppm and others under 185 ppm, and the company wanted to use the average of all of them. Oregon did not adopt this emissions averaging scheme into our rules in OAR 340 Division 230 (why I don't know). So Covanta's only NOx emission limit is 205 ppm."

In summary, because of Oregon's puzzling decision, NOx emissions limits are set at 205 ppm rather than 185 ppm, and Covanta Marion NOx emissions are listed at just 13 or 14% below DEQ permit levels for the period 2011 - 2015 (see point #1), rather than just 4% under the federal EPA limits of 185 ppm. Anyway you slice it, however, such emissions are anything but "well below the limits listed in its permit," as previously asserted by ODEQ, and echoed and publicized by Metro. And again, since NOx emissions are monitored continuously, there can be no doubt about whether they are representative of daily and yearly emissions under normal operating conditions.

5. Covanta Marion's operating permit from DEQ expires on April 1, 2017. Whether more stringent and lower NOx limits will be addressed in the new permit, and/or within the new Cleaner Air Oregon regulatory overhaul initiative is/are unknown at this time.

DEQ's current Title V Operating Permit for Covanta Marion expires on April 1, 2017. [10] Whether DEQ or others will propose lower limits for nitrogen oxides in the new permit is unknown at this time.

Also unknown is whether the new Cleaner Air Oregon [11] regulatory overhaul initiative will address the adverse human health and environmental justice impacts of Covanta Marion's high NOx emission levels, and the fact that DEQ's limits for NOx are less stringent than the EPA, and propose regulatory changes to remedy the situation.

6. Marion County's May 29 decision to authorize up to 25,000 tons of additional medical waste per year to be burned at Covanta Marion will make burning such

waste a "revenue/profit center" for the County and Covanta. Burning additional waste will increase future total emissions, and perhaps average levels of NOx and other pollutants as well, and will be used as a justification to support proposals to expand the incinerator by at least one burner.

On May 29, 2016, the Marion County Board of Commissioners voted to amend a prior agreement with Covanta Marion, and authorized up to 25,000 tons of medical waste per year from Stericycle in California and Washington for incineration at the burner. The up to 25,000 tons is in addition to the up to 1,500 tons of out-of-county medical waste per year previously authorized, which remains in effect. [12]

Under the amended agreement, Stericycle will pay \$450 for each ton of medical waste processed and burned at the facility. The standard fee paid by municipal waste haulers at the facility is \$87.50 per ton. Marion County projects up to \$3,400,000 each year in new revenue as a result of the decision, as well as an additional up to \$300,000 each year in avoided fees. For more on the agreement, including a flawed suggestion about how to evaluate whether burning up to 25,000 tons of additional medical waste per year will change the incinerator's emissions, see references [13] and [14]

A key takeaway from the Board of Commissioners' decision is that Marion County is embarking upon a plan to make the burning of medical waste a "revenue/profit center" for both the County and Covanta. In so doing, the Board is setting up Marion Covanta for expansion by at least a third burner, and also to be one of the largest, if not the largest, sites for medical waste incineration in the western United States! If a third burner is added, even greater quantities of high revenue medical and other waste may be approved for burning in the future, and even greater quantities of toxic and global warming emissions will be produced.

7. An even greater expansion of Covanta Marion will occur if Metro acts on its proposal to begin sending one-fifth (200,000 tons) of tri-county waste to the incinerator when contracts expire at the end of 2019. Both Metro and Covanta have said that such an increase will require doubling the capacity of the waste-to-energy plant.

Such a doubling of capacity would expand and perpetuate an outmoded, dirty, high-carbon technology at exactly the time that science and our daily news and experience tell us that we need to do everything possible to rapidly transition to becoming a low carbon society based upon clean forms of energy, equity, health, and low levels of waste, pollution, and global warming emissions. Waste-to-energy incineration perpetuates just the opposite of this vision.

Waste-to-energy incineration is also totally inconsistent with the vision and objectives embodied in the climate action, fossil fuels, and sustainability policies of cities and counties within Metro's region, e.g. Portland and Multnomah County's jointly adopted 2015 Climate Action Plan, the separately adopted fossil fuels divestment policies of Portland, Multnomah County, and Metro, etc.

8. Metro's advocacy for waste-to-energy incineration is based in part on the fact that Oregon's solid waste hierarchy prioritizes energy recovery over disposal. Such prioritization applies, however, only "so long as the energy recovery facility preserves the quality of air, water and land resources." Because Covanta Marion's high NOx emissions seriously impair air, land, and water resources, the stipulation justifying prioritization is clearly not met.

While it's true that Oregon's 6-step solid waste hierarchy prioritizes energy recovery over disposal, it's also true that "DEQ interprets the hierarchy as policy guidance - not a hard and fast direction for how materials should be managed" [15]. The actual description of energy recovery in the hierarchy is as follows: "Fifth, to recover energy from solid waste that cannot be reused, recycled or composted so long as the energy recovery facility preserves the quality of air, water and land resources" [15]

9. The stipulation justifying prioritization of energy recovery over disposal is also clearly violated by the fact that waste-to-energy plants produce even more pollution and global warming emissions than coal plants per unit of electricity produced.

Most, if not all, citizens and officials in the Metro region advocate moving away from coal generated electricity as rapidly as possible because of the pollution, environmental destruction, health impairment, and global warming emissions coal produces. Yet, based upon U.S. EPA data, waste-to-energy incinerators produce even more pollution and global warming emissions per unit of electricity produced than coal-fired power plants [16].

More specifically, the Energy Justice Network notes that "to make the same amount of energy as a coal power plant, trash incinerators release 28 times as much dioxin than coal, 2.5 times as much carbon dioxide, twice as much carbon monoxide, three times as much nitrogen oxides, 6-14 times as much mercury, nearly six times as much lead and 70% more sulfur dioxides" [17]. The Environmental Integrity Project reports similar outcomes in comparisons between waste-to-energy incinerators and coal-fired power plants in Maryland [18].

10. The new Covanta built and operated Durham York Energy Centre in Clarington, Ontario, Canada provides instructive lessons on failures to meet project deadlines, stay within project budgets, and meet key performance specifications related to ash, and dioxins and furans. The latter underscores the importance of continuous emissions monitoring for all pollutants.

The \$295 million waste-to-energy plant recently began commercial operation a year behind schedule, \$21 million over budget, producing 2.5 % more ash than originally specified, with both boilers initially failing but later passing tests for dioxins and furans last fall, and amidst allegations and investigations that the public was improperly denied access to closed door meetings. [19]

In May of this year, stack tests revealed that one of the incinerator's two boilers was emitting dioxins and furans at levels that exceeded permit limits by more than 13 times (the limit is 60, boiler #1 had dioxins and furans emissions of 818). The boiler was then shut down, and is still shut down, as Covanta and its consultants analyze the cause(s) of the 13 times greater than permit limits emissions, and initiate remedies to restore proper functioning. [20]

The May stack tests were being conducted on a twice a year basis, rather than the usual once a year basis, because citizens previously secured commitments from officials for such testing after repeatedly expressing concerns about inadequacies in the monitoring of emissions since the incinerator was proposed. Because dioxins and furans are only measured twice a year (once a year at Covanta Marion), there's no way to know what the emissions of dioxins and furans were in the months prior to May, and whether they were at, below, or above the 13 times the limit level. While two stack tests a year are certainly better than one, what we really need (at Durham York and Covanta Marion) is continuous emission monitoring for all pollutants, not just some (see point 3). [21]

On July 21 of this year, Metro invited a presentation on the Durham York Energy Centre by Durham's director of waste management services, and its manager of waste planning and technical services. [22] While the presenters and the Metro article posted the following day certainly made many valid points, little reference was made to any of the issues described above.

11. Consensus, urgency, and action is rapidly increasing to implement policies that reduce climate change, and increase sustainability, resilience, justice, equity and prosperity. Waste-to-energy incineration is the antithesis of such policies.

Many additional arguments can be made about why Metro should abandon its proposal embracing waste-to-energy incineration. The arguments I've advanced, and the documentation supporting them, can be found in references 9, 23, and 24.

Metro first publicly proposed its waste-to-energy option more than a year ago. Much has occurred since then: a cascade of scientific reports on the urgent need to address climate change; the Paris agreement; multiple climate related "extreme" weather disasters; rapidly increasing commitments in many sectors to divest from fossil fuels; more and more discussion of stranded assets (and technologies); rapidly increasing -- indeed exponential -- increases in the development and adoption of solar, wind, and other clean, low-carbon technologies; increases in energy efficiency and storage technologies; and much more.

The realities captured in the trends above will intensify with each coming year. Waste-to-energy incineration is the antithesis of these trends, and the antithesis of the policies and initiatives championed by the citizens and communities Metro represents.

Based upon all of the above, the Environmental Health Working Group of Oregon Physicians for Social Responsibility respectfully requests that Metro decide against adoption of its proposal to begin sending one-fifth of the tri-county areas' waste to Covanta Marion when contracts expire in 2019.

Sincerely,

Joe Miller

Member, Environmental Health Working Group, Oregon Physicians for Social Responsibility

Primary contact information: jmiller@saintmarys.edu, 503 295 7747

Kelly Campbell

Executive Director, Oregon Physicians for Social Responsibility

- [1] <http://www.oregonmetro.gov/news/powering-homes-garbage>
- [2] <http://www.oregonmetro.gov/councilor/bob-stacey/news/4104>
- [3] http://www.co.marion.or.us/BOC/Documents/PW_ES_062916_CovantaAmend2BlueBinMedWaste.pdf (page 6)
- [4] http://swanaoregon.org/images/VanBrunt2015-04_NW_SWANA.pdf (page 22)
- [5] <https://www.epa.gov/criteria-air-pollutants>
- [6] https://toxtown.nlm.nih.gov/text_version/chemicals.php?id=19
- [7] http://www.nchh.org/Portals/0/Contents/EPA_Nitrogen_oxides.pdf
- [8] <http://www.ejnet.org/toxics/cems/>
- [9] <http://www.psr.org/chapters/oregon/assets/pdfs/miller-testimony-metro-wastetoenergy-1-11-16.pdf>
- [10] http://www.deq.state.or.us/aq/permit/tv/wr/245398CovantaMarion_Pmtb.pdf
- [11] <http://www.oregon.gov/deq/RulesandRegulations/Pages/2017/Rcleanerair2017.aspx>
- [12] <http://www.statesmanjournal.com/story/news/2016/06/29/marion-county-approves-medical-waste-proposal/86473410/>
- [13] <http://www.statesmanjournal.com/story/news/2016/06/24/medical-waste-could-mean-cash-marion-county/86181770/>
- [14] <http://www.psr.org/chapters/oregon/assets/pdfs/miller-testimony-medicalwaste-covantamarion-6-28-16.pdf>
- [15] <http://www.deq.state.or.us/lq/pubs/docs/sw/2050vision/BriefingPaperSWHierarchy.pdf>
- [16] <http://www.energyjustice.net/eGRID>
- [17] <http://www.energyjustice.net/incineration/worsethancoal>
- [18] <http://environmentalintegrity.org/archives/6709>
- [19] <http://www.psr.org/chapters/oregon/assets/pdfs/miller-testimony-metro-durham-wastetoenergy-7-21-16.pdf>
- [20] <http://www.durhamregion.com/news-story/6692836-covanta-fails-latest-test-at-courtice-incinerator/>
- [21] <https://www.thestar.com/news/gta/2016/06/14/durham-grapples-with-incinerators-alarming-emissions.html>
- [22] <http://www.oregonmetro.gov/news/toronto-area-quests-share-waste-energy-story>

[23] <http://portlandtribune.com/pt/10-opinion/289408-166082-burning-waste-is-an-unhealthy-idea>

[24] <http://www.psr.org/chapters/oregon/assets/pdfs/miller-testimony-health-sludge-incineration-5-26-16.pdf>