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DRAFT

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Air and Radiation Management Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Re: Air Permitting for Frederick/Carroll County Renewable Waste-to-Energy Incinerator

Dear Ms. Heafey:

On behalf of Community Research, the Institute for Public Representation (IPR) submits these comments urging the Maryland Department of the Environment (MDE) to comply with the Clean Air Act and require Wheelabrator Technologies (“Wheelabrator”) and the Northeast Maryland Waste Disposal Authority (“Authority”) to revise the air, refuse disposal, and construction permit applications for the proposed incinerator in Frederick. IPR is a public interest law firm and clinical education program at Georgetown University Law Center that provides legal counsel to individuals and organizations on matters involving the protection of the natural and human environment. IPR represents Community Research, a College Park-based non-profit organization that works to protect the environment through advocacy, education, and research, in its opposition to construction of the incinerator.

On December 20, 2012, MDE published notice of its tentative approval of air, water, and refuse disposal permits for the Frederick/Carroll County Renewable Waste-to-Energy (FCCRWE) facility. As explained below, the proposed permits violate the Clean Air Act because they miscalculate the plant’s potential to emit SO₂; miscalculate annual ambient impacts from toxic emissions; fail to require adequate heavy metal and dioxin/furan monitoring; fail to set any limits on the amount of non-municipal waste burned by the facility; fail to provide an

alternatives analysis that demonstrates the project's suitability; assume that Carroll County will participate in managing the facility's waste stream; do not consider all available control technologies to reduce greenhouse gases; fail to specify a landfill for incinerator ash, and do not specify where the facility will obtain offsets for nitrogen oxides (NO_x). In order to comply with the law, Wheelabrator and the Authority must revise these permit applications, the MDE must revise the draft permits, and the MDE must grant the public an opportunity to comment before approving the permits.

I. Wheelabrator and the Authority have underrepresented the facility's potential to emit SO₂.

An incinerator's potential to emit a regulated pollutant plays a critical role in determining whether the facility qualifies as a major source and whether it must, as a result, comply with additional regulation. In their Prevention of Significant Deterioration/Air Construction Permit Application for this incinerator, the Northeast Maryland Waste Disposal Authority and Wheelabrator (Applicants) peg the incinerator's potential to emit SO₂ at 99.4 tons per year (tpy), thereby narrowly evading the 100 tpy major source threshold. PSD Permit Application, at 1-3 (Oct. 2012). For three reasons, the 99.4 tpy calculation is erroneous. First, it does not reflect the incinerator's operations at "maximum capacity." Second, the figure does not include SO₂ emissions from the 64,717 delivery trucks that will haul trash, ash, sludge, and other chemicals in and out of the facility each year. PSD Permit Application, at Table B-15. Finally, the Applicants fail to explain the assumptions underlying their calculations of the incinerator's potential emissions, and fail to explain how or why they chose the emission rates that they did. For these reasons, MDE should revise the draft permit to accurately reflect the potential to emit and provide an adequate explanation of the emissions rates used in its calculations.

A. The proposed permit misstates the facility's potential to emit SO₂ at maximum capacity.

Wheelabrator and the Authority erroneously present an operating capacity of 100% as the "maximum capacity" for the purposes of generating a figure of 99.4 tpy SO₂ potential to emit. In fact, the maximum operating capacity of the facility is 110%, and the potential to emit calculation must incorporate that higher figure. *See* PSD Permit Application, at B-5. Both federal and Maryland regulations define "potential to emit" as the "maximum capacity of a stationary source to emit a pollutant under its physical and operational design." 40 C.F.R. §51.1669(b)(4); COMAR 26.11.17.01(B)(21)(a). The courts have made clear that the maximum capacity reflects the "maximum emissions that can be generated while operating the source as it is intended to be operated and as it is normally operated." *WEPCO v. Reilly*, 893 F.2d 901, 917 (7th Cir. 1990) (quoting *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141 (D.Colo.1988)).

Here, federal regulations and the permits themselves demonstrate that this facility 'is intended to be operated at 110%' and will be "normally operated" at 110%. First, the New Source Performance Standards (NSPS) for large municipal waste combustors establish that "no owner or operator of an [MWC] shall cause such facility to operate at a load level greater than 110 percent of the maximum demonstrated municipal waste combustor unit load." 40 C.F.R.

§60.53b(b). Second, the PSD permit application itself assumes that the facility will operate at 110% capacity, noting that “[t]he combustors will be designed to operate between 60 and 110-percent load,” and that the mechanism for removal of acid gases, including SO₂, is calibrated to operate at up to 110% capacity. PSD Permit Application, at 2-1, 4-29. The emissions projections throughout the application similarly assume operating scenarios of 110%. *See, e.g., id.* Tables 7-1, B-4, B-21. SO₂ emissions at 110% capacity are 109.4 tpy, if the emissions rate is averaged annually, or 187.5 tpy, if emissions rate is averaged daily. The federal regulations, as well as the permit applicants’ acknowledgement that it may operate at up to 110% capacity, indicate that this percentage is the true “maximum capacity” for the purposes of calculating potential to emit, and, therefore, the facility will qualify as a major source of SO₂.

The applicants’ assertion that “the combustors will normally operate between 60 and 100 percent of their maximum continuous rating” is not relevant for the purposes of calculating the facility’s potential to emit. PSD Permit Application, at 3-1. Where an operational restriction is merely voluntary and not legally enforceable, it may not serve to lower a facility’s potential to emit. *Nat’l Mining Ass’n v. EPA*, 59 F.3d 1351, 1362 (D.C. Cir. 1995); *WEPCO v. Reilly*, 893 F.2d 901, 917 (7th Cir. 1990); *State ex rel. Ohio Att’y Gen. v. Shelly Holding Co.*, 946 N.E.2d 295, 304 (Ohio Ct. App. 2010). In *National Mining*, the court found that, while limitations of a source’s potential to emit do not have to be federally enforceable, they must be effective and may not be “chimeras” that “do not really restrain an operator from emitting pollution.” 59 F.3d at 1362. Likewise, in *WEPCO*, the court found that EPA may not reasonably rely on a facility’s “unenforceable estimates of its annual emissions” to arrive at its potential to emit. 893 F.2d at 917.

Here, the applicants’ assertion that it will operate between 60-100% capacity is a voluntary restriction like those discussed in *WEPCO* and *National Mining*. No federal or state laws restrict FCCRWTE’s capacity to 100%, and indeed they permit the facility to operate at up to 110%, so the applicants may not rely on its own voluntary restriction to reduce its potential to emit. The miscalculation of the SO₂ potential to emit also significantly alters the pollution control obligations for the facility under the Clean Air Act. At 110% capacity, FCCRWTE’s potential to emit SO₂ is 109.4 tpy, which exceeds the 100 tpy threshold and qualifies the facility as a major source. Because Frederick County is in nonattainment for PM_{2.5}, any new major source of SO₂ (a PM_{2.5} precursor) must undergo Nonattainment New Source Review (NNSR). Here, the 109 tpy net increase in emissions exceeds the threshold for a major source, triggering NNSR for SO₂. Sources subject to NNSR must fulfill additional obligations before they may receive a permit, including installing Lowest Achievable Emission Rate (LAER) technology, obtaining emissions offsets, and conducting an alternative siting analysis. Although Wheelabrator and the Authority have conducted NNSR for NO_x at the Frederick facility, they have not done so for SO₂. Therefore, the PSD permit is inadequate, and must be revised to require NNSR for SO₂.

A revised permit application should additionally disclose the amount of lead, carbon monoxide, mercury, sulfuric acid mist and all of the other pollutants that it would emit while operating at 110% capacity. These calculations may not trigger new source review or any additional regulation, but they provide the public with a more accurate picture of the facility’s emissions profile. The more trash this facility burns, the more it earns in tipping fees and from

the sale of electricity. Even occasionally running the incinerator at 110% could nudge the average annual capacity above 100%, and lead to emissions of these and other pollutants above what the Applicants have disclosed. A revised permit application must divulge to the public an absolute maximum projection of the pollutants that the incinerator could emit without violating the law or the permit conditions.

B. Potential to emit calculations are inadequate because they do not include fugitive emissions from truck traffic.

In addition to calculating the SO₂ potential to emit at less than maximum capacity, the permit impermissibly excludes fugitive emissions from truck traffic in its calculations. Fugitive emissions must be considered in determining the major status of a large municipal waste incinerator. 40 C.F.R. §51.165(a)(iv)(C)(8) (listing MWCs among categories of major sources excluded from general rule not requiring fugitive emissions to be taken into account in determining major status); EPA, NSR Workshop Guidance, at C-2 (Draft 1990) (“Calculated emissions will embrace all potential, not actual, emissions expected to occur from a source on a continuous or regular basis, including fugitive emissions where quantifiable.”). Here, the 99.4 tpy PTE for SO₂ reflects only emissions from the two combustor stacks and ignores the fugitive SO₂ emissions from delivery trucks. *See* PSD Permit Application, at Table B-2. However, the permit application notes that up to 64,716 waste, sludge, ash, and miscellaneous delivery trucks will drive to and from the FCCRWTE facility each year. PSD Permit Application, at Table B-15. Including fugitive emissions is crucial in a case like this, where the potential to emit approaches and may even exceed the major source threshold. The SO₂ emissions from this large number of heavy, diesel-burning vehicles should have been included in the potential to emit calculations.

C. The basis for calculating the potential to emit is inadequate.

In addition to miscalculating FCCRWTE’s maximum capacity and omitting fugitive emissions from the potential to emit calculations, neither the applicants nor MDE has explained its calculations of the facility’s potential to emit, as required by COMAR 26.11.03.06. Two aspects of the potential to emit calculations, in particular, require further explanation. First, the potential to emit figures used in the PSD permit application do not appear to reflect emissions from the “most pollutant-generating” fuel that the incinerator would burn, as required by EPA’s New Source Review Workshop Guidance. Second, the averaging periods used for SO₂ result in divergent hourly emission rates, yet the permit application contains no explanation of this disparity.

1. Dirtiest Fuel

Information on the assumptions made about the fuel mix used to estimate the facility’s potential to emit, which is essential to determining whether potential emissions were properly calculated, is conspicuously absent from the facility’s permit application. EPA guidance requires facilities using varying fuel types to calculate their potential to emit using the dirtiest fuels with the highest emissions: “Where raw materials or fuel vary in their pollutant-generating capacity, the *most pollutant-generating substance must be used* in the potential to emit calculations unless such materials are restricted by federally enforceable operational or usage limits.” EPA, NSR

Workshop Guidance, at C-2 (Draft, 1990) (emphasis added). Here, the pollution-generating capacity of FCCRWTE's fuel will indeed vary: the facility will incinerate items with distinct emissions profiles, e.g. tires, sludge, and residential, commercial, institutional and industrial waste (itself with variable pollution-generating capacity), in different proportions. In light of the prospective emissions fluctuations, the potential to emit figures should reflect the most pollution-generating mix of fuels. IPR respectfully requests an explanation of the assumptions made about the fuel mix and the sources of the data used to calculate potential to emit for the full range of potential pollutants that the facility would emit.

2. Averaging Rates

Furthermore, the PSD permit application does not explain why the annually averaged and short-term SO₂ emissions rates vary so significantly, or why the lower annual rate was chosen for the SO₂ potential to emit. At 38.9 lb/hr, the short-term emissions rate results in annual emissions that not only exceed the 100 tpy major source threshold, triggering NNSR, but also are almost twice the emissions of the annually averaged rate, 22.7 lb/hr, that was used to generate the 99.4 tpy potential to emit. See PSD Permit Application, at Table B-5. In light of this discrepancy, IPR respectfully requests a full explanation of the information and assumptions used to calculate FCCRWTE's potential to emit, including the reason the potential emissions used the annual and not the short-term rate.

II. Applicants have miscalculated annual ambient impacts for several toxic air pollutants.

The applicants' "Toxic Air Pollutant Analysis" for the Frederick incinerator improperly calculates the annual ambient impacts of several toxic pollutants. Maryland regulations require new sources to analyze the ambient impacts of their emissions of specified toxic air pollutants (TAPs) over several averaging periods. COMAR 25.11.15.06. The required screening analysis must show that "total allowable emissions from the premises will not cause increases in ambient levels that exceed applicable... screening level[s]." COMAR 26.11.15.06 (A)(1)-(2)(a). Maryland regulations specify different screening levels for carcinogenic and non-carcinogenic effects, and for 1-hour, 8-hour, and annual averaging periods. COMAR 26.11.16.03.

Here, the applicants' conclusion that annual impacts of beryllium, arsenic, cadmium, hexavalent chromium, dioxin, formaldehyde, hydrogen chloride and polychlorinated biphenyls would not exceed applicable screening levels did not reflect total allowable emissions of these pollutants. PSD Application at 7-24. Rather, the impacts were assessed assuming an operating capacity of 60% maximum continuous rating (MCR), even though the incinerator is allowed to operate at up to 110% capacity. The applicants' explanation that "the combustors will not operate at [the 110%] load for a full year" is not satisfactory given the regulatory requirement that applicants calculate impacts of total *allowable*, not *expected*, emissions. PSD Permit Application, at 7-1. Because the facility's emissions at 110% capacity will be higher than those at 60% capacity, the applicants must recalculate the ambient impacts of toxic emissions assuming a 110% MCR scenario.

III. FCCRWTE's proposed Air permit's heavy metal and dioxin/furan monitoring requirements are inadequate.

The FCCRWTE's air permits propose annual or quarterly performance tests to monitor for lead, cadmium, mercury, and dioxins/furans. Federal law sets the limits on emitting these dangerous materials in terms of a continuous rate. MDE must require more frequent emissions testing to capture variations in emissions, and, thereby, assure compliance with the emissions limits that the Clean Air Act requires. *See* 42 U.S.C. §7661c(a)-(c); *Sierra Club v. EPA*, 536 F.3d 673, 677 (D.C. Cir. 2008). Specifically, MDE should require continuous emissions monitoring systems (CEMS) for heavy metal and dioxin/furan emissions. CEMS would best ensure compliance with emissions limits that apply at all times, and the Approval Conditions already refer to it as an alternative monitoring mechanism. PSD Approval Conditions, at 6. Moreover, use of mercury CEMS at another planned Maryland incinerator suggests that it is appropriate for this type of facility. Even if MDE stops short of requiring CEMS, the agency must still revise its Approval Conditions to clarify how mercury will be monitored, and to explain how chosen monitoring mechanisms for all three heavy metals, as well as dioxins and furans, will lead to compliance.

A. FCCRWTE's proposed permit must require more frequent monitoring.

An annual emissions test is simply insufficient to capture emissions variations that result from the changing chemical content of the waste burned. Where monitoring does not capture emissions fluctuations, the EPA has found it inadequate to assure compliance with emissions limits. *In the Matter of Luke Paper Co.*, Permit No. 24-001-00011 (Order on Petition) (Oct. 18, 2010), at 6; *see also In the Matter of CITGO Refining and Chemicals Co.*, Petition No. VI-2007-01 (Order on Petition) (May 28, 2009), at 6. In *Luke Paper*, the Administrator rejected a biannual PM monitoring provision at a Maryland paper company, finding "that such an infrequent testing requirement is not adequate to assure compliance with an hourly limit." *In the Matter of Luke Paper Co.*, Permit No. 24-001-00011 (Order on Petition) (Oct. 18, 2010), at 6. The Administrator also rejected MDE's contention that pollution control technology would ensure compliance in the absence of more frequent testing, and required actual monitoring to "provide timely compliance information." *Luke Paper*, at 6. Similarly, in *CITGO*, the Administrator invalidated a permit because the quarterly opacity tests it required did not have to be scheduled when "violations [were] most likely to occur, such as during 'decoking' operations." *CITGO*, at 6. Instead, the Administrator ordered the agency to come up with monitoring requirements that correspond to known events that would cause emissions variations.

Here, the Approval Conditions for FCCRWTE's permit provide only for *annual* stack testing of cadmium, lead, and dioxins/furans. They also offer conflicting requirements for mercury testing. While Part D of the Approval Conditions states that mercury tests will be annual, PSD Approval Conditions, at 7, Table 1 states that they will be quarterly. *Id.* at 11. Even quarterly testing, however, is too sporadic to reflect accurately FCCRWTE's heavy metal and dioxin/furan emissions, which can be expected to fluctuate for several reasons. First, heavy metals are present in sewage sludge, tires, and in municipal solid waste, all of which will be incinerated in different proportions at the plant. Second, dioxin formation is, in part, dependent on the combustion temperature and, in part, on the chlorine content of the waste, both of which

may vary. Sewage sludge and tires are potent sources of both chlorinated compounds and heavy metals, and as discussed below, nothing in the permits prevents Wheelabrator and the Authority from burning more of these sources rather than municipal waste. Third, the Counties will only collect hazardous materials twice per year, too infrequently to ensure that heavy metal-containing items are consistently diverted from the waste stream.¹ Refuse Disposal Permit Application, at 3-8, 3-15. Fourth, even if the incinerator was not permitted to burn tires and sludge, or burned tires and sludge of a consistent composition and at a constant rate, municipal waste content varies over time and by source, and these variations will likely alter the incinerator's operations and emissions. Finally, the facility operators cannot and will not systematically separate 1500 tons of waste – or anywhere near that amount -- once it reaches the FCCRWTE, meaning that the company will neither detect levels of heavy metals and chlorine in the waste stream nor prevent hazardous items from incineration. *See* Refuse Disposal Permit Approval Conditions, at II-2; Mercury Diversion Plan Letter to MDE (Nov. 8, 2012). Given this potential for emissions variability, one to four tests per year is simply not enough to ensure that the plant will abide by emissions limits.

The units of measurement for these limits, micrograms/dry standard cubic meter ($\mu\text{g}/\text{dscm}$),² underscore the inadequacy of annual or quarterly testing. These limits apply at all times, to every cubic meter of emissions that FCCRWTE's stacks discharge, and imply no averaging convention over time that might allow for occasional spikes. An annual performance test, consisting of only 3 allegedly representative test runs, cannot ensure that this continuous limit is complied with, especially when emissions will vary so frequently that no test run can be truly representative. *See* 40 C.F.R. §60.58b(d)-(g).

The need for effective monitoring is all the more pressing given the toxicity of heavy metals, dioxins, furans, and other pollutants that the incinerator is likely to release, and in some cases, generate. The PSD permit application indicates that, even with pollution control mechanisms, FCCRWTE will be the largest source of cadmium emissions, the second-largest source of mercury, and the third largest source of lead in the two counties.³ The three metals can have grave health effects even at low levels of exposure. Lead exposure can lead to hypertension, reproductive problems, and diminished kidney function, while mercury exposure can impair vision, movement, and hearing. Chronic exposure to cadmium can cause lung damage, kidney failure, and cancer. Dioxins, which are also carcinogenic, cause problems in the endocrine, reproductive, and immune systems. In children, mercury, lead, and dioxins can cause severe developmental defects and brain damage. With its proposed location less than three miles from seven schools and daycare facilities, and close to many homes and recreational areas,

¹ Not all residents are likely to stockpile even known heavy metal sources (e.g., batteries, electronics, fluorescent lightbulbs) for six months at a time. Moreover, many heavy-metal containing products, like some foreign-made venetian blinds, cosmetics and toys, are not easily identified as hazardous materials and are likely to be thrown away. Indeed, in an advisory on MDE's website, the agency instructs purchasers of a mercury-containing face cream to put it in the trash.¹

² While the EPA permits lead emissions of up to 140 $\mu\text{g}/\text{dscm}$ and mercury emissions of up to 50 $\mu\text{g}/\text{dscm}$, MDE has only allowed lead emissions of 75 $\mu\text{g}/\text{dscm}$, and mercury emissions of 17 $\mu\text{g}/\text{dscm}$. MDE has set FCCRWTE's cadmium limit at 10 $\mu\text{g}/\text{dscm}$, the EPA limit. 40 C.F.R. §60.52b(a)(3)(ii) - (a)(5)(ii).

³ According to the PSD Permit Application, FCCRWTE will emit 92 pounds of mercury, 400 pounds of lead, and 54 pounds of cadmium each year. EPA's Emissions Inventory permitted comparison with other sources in the two counties. 2008 Emissions Inventory, Facility Total Lead and Total Mercury Tables, EPA, 2008.

FCCRWTE poses particular risks to children. Allowing the Authority and Wheelabrator to test the incinerator's toxic emissions one to four times per year would pose an unacceptable risk to public health.

MDE must require continuous monitoring of heavy metals and dioxins/furans to ensure compliance with emissions limits. Where monitoring provisions do not ensure compliance with emissions limits, MDE must require additional monitoring. *See Sierra Club v. EPA*, 536 F.3d 673, 677 (D.C. Cir. 2008); *Luke Paper*, at 6; see also, e.g., *In the matter of Wheelabrator Baltimore, L.P.*, Permit No. 24-510-01886, (Order on Petition) (April 14, 2010), at 7, 11. As the D.C. Circuit explained, “a monitoring requirement insufficient ‘to assure compliance with emission limits has no place in a permit unless and until it is supplemented by more rigorous standards.’” *Sierra Club v. EPA*, at 677. Citing *Sierra Club*, the Administrator in *Luke Paper* required MDE to supplement biannual particulate matter monitoring provisions found to be inadequate. *Luke Paper* at 6. Here, too, MDE must supplement infrequent stack testing with additional monitoring provisions to ensure compliance with emissions limits. The reference to an annual testing mechanism in the NSPS regulations provides no defense. *See Sierra Club*, 536 F.3d at 678 (rejecting the claim that “EPA has stamped all pre-existing monitoring requirements as adequate ‘to assure compliance,’” and charging state agencies with the duty to “correct these inadequate monitoring requirements.”).

Consistent with its duty, MDE should require continuous monitoring of heavy metals and dioxins/furans because this monitoring method will best assure compliance with emissions limits that apply at all times. As mentioned above, the emissions limits set forth in the NSPS apply to *all* of the facility's emissions and are not averaged over a particular period of time. Moreover, heavy metal emissions are anticipated to vary unpredictably. Because CEMS is the only monitoring method that could realistically track these variations, and, therefore, the only method that can ensure compliance with emissions limits, MDE should revise its approval conditions to require CEMS to supplement periodic stack testing.

Two other circumstances support the installation of CEMS. First, MDE has required mercury CEMS at another new incinerator, indicating that the agency believes continuous monitoring is required to ensure compliance and protection of public health. The use of a monitoring mechanism at a similar facility indicates that the same mechanism is required for the project at issue. *See CITGO*, at 7-8; *Premcor Refining Group, Inc.*, Petition No. VI-2007-02 (Order on Petition)(May 28, 2009, at 7-8. Here, MDE required CEMS to be installed at the Energy Answers waste-to-energy facility in Fairfield in a recent settlement agreement.⁴ *In re Energy Answers Int'l, LLC*, 101 Md. Pub. Svc. Comm'n 331, No. 9199 (Aug. 6, 2010), at *14. Like FCCRWTE, the Fairfield incinerator would burn scrap tires and fuel derived from municipal waste; its similarity with this facility supports requiring similar monitoring technology here.

Second, MDE has already contemplated CEMS as an alternative to stack testing at FCCRWTE. In the PSD Approval Conditions, MDE provides that “the Permittee may request

⁴ While the CEMS data will initially be used for reporting, not compliance purposes, MDE will have the option after two years to require CEMS for compliance as well. *In re Energy Answers Int'l, LLC*, 101 Md. Pub. Svc. Comm'n 331, No. 9199 (Aug. 6, 2010), at *14.

approval from EPA and MDE-ARMA to use certified CEMS in lieu of stack testing for compliance for other pollutant emissions.” PSD Approval Conditions, at 6. Because infrequent stack testing is inadequate, MDE should simply mandate continuous monitoring.

B. The proposed permit and Approval Conditions do not adequately specify mercury monitoring requirements or explain the rationale for the proposed heavy metal monitoring regime.

MDE must revise its permit approval because it has not specified the monitoring regime for mercury. “Enforceable emission limitations and standards” and monitoring sufficient to “ensure compliance with the permit terms and conditions” are key requirements of a Title V Permit. 42 U.S.C. §7661c(a)-(c). The implementing regulations echo these requirements. 40 C.F.R. §70.6(c)(1). Where a permitting agency has not specified, or delays choosing, a monitoring technique, a permit is inadequate. *See In the Matter of U.S. Steel*, Petition No. V-2011-2 (Order on Petition) (Dec. 3, 2012), at 10; *In the Matter of Wheelabrator Baltimore, L.P.*, Permit No. 24-510-01886, (Order on Petition) (April 14, 2010), at 7, 11. In *U.S. Steel*, the Administrator invalidated a permit that omitted monitoring mechanisms for several pollutants, holding that the permitting agency had no “discretion to issue a permit without specifying the monitoring methodology needed to assure compliance” with the applicable emissions limits. *U.S. Steel*, at 10. Similarly, in *Wheelabrator Baltimore* the Administrator found that MDE could not delay developing a method for converting CEMS data into units that would demonstrate compliance with short-term emissions limits until after the permit had been issued. *Wheelabrator Baltimore*, at 7, 11. Rather, the agency had to include the conversion method within the permit. *Id.* at 11. Thus, MDE’s permit is invalid unless it, too, specifies how frequently mercury will be monitored.

Here, MDE has not identified a monitoring methodology for mercury. The Approval Conditions establish conflicting mercury monitoring requirements; in one place providing for quarterly stack tests, and in another for annual stack tests and an unspecified number of “additional stack tests at any reasonable time.” *Cf.* PSD Approval Conditions, at 7 and PSD Approval Conditions, at 11. Therefore, just as MDE in *Wheelabrator Baltimore* had to revise its permit to include a CEMS conversion method, MDE here must clarify how mercury emissions will actually be monitored.

MDE has also failed to explain how its lead, cadmium, and dioxin/furan monitoring regimes will ensure compliance with emissions limits, in violation of federal regulations. Under 40 C.F.R. §70.7(a)(5), agencies must “provide a statement that sets forth the legal and factual basis for the draft permit conditions....” Where the agency has not explained how a permit’s monitoring provisions will lead to compliance with emissions limits, §70.7(a)(5) is violated: “in all cases, the rationale for the selected monitoring requirements must be clear and documented in the record.” *CITGO*, at 7; *see also Wheelabrator Baltimore*, at 13. In *Wheelabrator Baltimore*, the Administrator invalidated MDE’s permit because the agency had not analyzed whether annual stack tests and other mercury monitoring requirements would ensure compliance with hourly emissions limits. Likewise, in *CITGO*, the Administrator found a refinery’s permit inadequate because the agency had not linked the biannual opacity-monitoring provisions to compliance with opacity limits. *Id.* at 8.

As in *Wheelabrator Baltimore*, MDE has not supplied the required rationale for its heavy metals or dioxin/furan monitoring provisions. MDE makes no attempt to analyze how yearly stack tests for lead, cadmium, and dioxins/furans will ensure compliance with emissions limits that apply at all times, nor how such infrequent testing will reflect fluctuations in emissions from the variable heavy metal content of the waste combusted. Nor has MDE offered a rationale for either the annual or quarterly mercury tests it mentioned in the Approval Conditions. Therefore, MDE must revise its Approval Conditions to include this information.

IV. The proposed permits must set limits on the amount of sewage sludge and scrap tires it will accept.

Section 129(g) of the Clean Air Act disqualifies incinerators that burn a large proportion of non-municipal waste from treatment as “municipal waste incinerators.” 42 U.S.C. § 7429(g)(5). Sewage sludge and scrap tires are not municipal waste. 40 C.F.R. § 60.51b. Yet the Refuse Disposal Permit and the Sewage Sludge and Scrap Tire Permit Applications fail to set clear limits on the amount of such items that this facility may burn. The PSD Permit Application mentions a specific acceptance limit for wet sludge, but only a relational limit for scrap tires. *See* PSD Permit Application, at 2-12. Without clear limits, these permits enable Wheelabrator and the Authority to operate this facility as a general purpose incinerator without complying with the stricter standards governing, e.g., commercial and industrial solid waste incineration facilities. *Compare* PSD Application at 4-51 (setting a limit of 17 µg/dscm for mercury) *with* Commercial and Industrial Solid Waste Incineration Units: Reconsideration and Final Amendments; Non-Hazardous Secondary Materials That Are Solid Waste 78 Fed. Reg. 9112, 9119 (Feb. 7, 2013) (setting a limit of 0.83 µg/dscm for mercury).

As proposed, the FCCRWTE’s permits may allow the facility’s operators to emit more than 20 times the amount of allowable mercury for commercial and industrial incinerators that burn fuels other than “municipal waste.” *See* PSD Application, at 4-51. Putting aside the question of why Wheelabrator and the Authority should not have to adopt the same types of controls that other incinerators use to bring down toxic emissions as low as possible, MDE must at least set enforceable limits to ensure that the facility operates as a municipal waste incinerator.

V. The proposed permits must set minimum standards for imported waste.

The applicants’ depiction of the incoming waste stream’s composition is inaccurate and misleading. The proposed facility will process 1,500 tons of waste per day, or 574,500 tons per year. According to the Materials Separation Plan, Frederick County will produce about 195,000 tons of nonrecycled solid waste in 2015, and Carroll County will produce about 95,000 tons of nonrecycled solid waste for the year, totaling just 290,000 tons available for the facility to burn. *See* Materials Separation Plan, at 2-11. The applicants would therefore have to import at least 284,500 tons of waste per year from unknown sources in order to operate at 100% capacity. The Materials Separation Plan and Mercury Diversion Plan discuss Frederick and Carroll Counties’ recycling and hazardous waste collection programs, but they offer little support for a facility importing nearly half of its waste from other jurisdictions.

Compared to many of these jurisdictions, Frederick and Carroll Counties have strong recycling and hazardous waste management programs. *See* Materials Separation Plan, at 1-3. The counties' Solid Waste Management Plans ensure that they meet and exceed Maryland's 20 percent recycling goal and 40 percent statewide diversion goal. *See id.* In 2009, Frederick County's waste diversion rate was 46.63 percent, and the county's Household Hazardous Waste contractor recycled 1,113 pounds of HHW in 2009, including mercury and mercury containing items. *Id.* at 3-2, 3-8. For the same year, Carroll County's waste diversion rate was 42.05 percent, and its HHW contractor recycled 853 pounds of waste, including mercury and mercury containing items, in 2010. *See id.* at 3-11, 3-16. Yet the Materials Separation Plan fails to consider how other jurisdictions' recycling and HHW collection programs, or the lack of those programs, will affect the level of toxic emissions from the facility, even though nearly half of the incoming waste stream will come from outside of Frederick and Carroll Counties.

MDE should require hazardous waste collection programs meeting or exceeding Frederick and Carroll Counties' standards for all sources of imported waste that meet or exceed the standards of Frederick and Carroll Counties. As Wheelabrator itself indicated, "[m]ercury containing items are generally very small, and if disposed of with municipal solid waste...they would not be discernible [by inspection on the tipping floor]." *See* Letter from Wheelabrator to MDE Accompanying Mercury Diversion Plan, at 1 (Nov. 8, 2012). The applicants, therefore, must rely on public information campaigns to remove mercury containing items from the waste stream. *Id.* But the Frederick and Carroll County public education, awareness, and outreach efforts described in such detail in the application materials would have limited impact on this facility's emissions, given its reliance on importing trash. *See* Mercury Diversion Plan, at 1. Without further requirements, the lengthy discussion of these efforts is misleading to the public as to both the amount of mercury containing items burned in the facility and the counties' residents' control over that amount. Consistent with the applicants' analysis, the permit for this facility should require that jurisdictions providing waste meet standards satisfying Frederick and Carroll Counties hazardous waste diversion goals.

VI. The PSD permit materials do not provide a sufficient alternatives analysis.

Maryland law provides that MDE "shall deny a permit or approval" to a major stationary source, such as the incinerator, unless "[a]n analysis of alternative sites, sizes, production processes, and environmental control techniques . . . demonstrates that benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification." COMAR 26.11.17.03(B)(6) *see also* 42 U.S.C. § 7475(a)(2). No such analysis demonstrates the benefits of this project. Section 5 of the applicants' PSD application purports to satisfy this requirement, but it fails to even give a clear description of what alternatives the project's proponents have analyzed, never mind why they rejected them. MDE should require an analysis demonstrating why a plausible composting and recycling program or smaller-sized incinerator would not fulfill the purpose of this facility with far fewer environmental costs.

The application references an "organics composting facility and municipal solid waste composting facility," but it neither defines what this means nor explains why such a facility or facilities would result in a higher "net present value cost" to Frederick County. The application

cites no report or study further elaborating on the conclusion that “a 1,500-tpd regional waste-to-energy facility would result in the lowest net present value cost.” PSD Application at 5-3. Nor does the NEA’s website link to any such study or document.⁵ In response to inquiries, however, the NEA has directed citizens to a 2005 report by the consulting firm R.W. Beck. That report does not directly analyze a composting option, but rather summarizes “a copy of a section of a draft report entitled ‘Solid Waste Management Alternatives Evaluation’” that NEA provided to the consultants.⁶ According to R.W. Beck’s summary, building a 750 ton per day (tpd) capacity municipal waste composting facility would cost between \$100 and \$150 million, compared to a cost of \$247 million to build a 1500 tpd capacity incinerator. (5-8, 5-13). However, the R.W. Beck summary concludes that a composting facility would entail a higher net present value cost, because the County would have to pay to landfill or long-haul non-biodegradable materials elsewhere. The County will have to pay to landfill or long-haul a similar amount of ash, however, if it builds the incinerator, and R.W. Beck appears to omit that cost from its analysis.⁷

The PSD application does not even mention the possibility of a smaller incinerator, even though Frederick County currently produces less than a third of the 1500 tons per day of waste that the incinerator would need to consume. The R.W. Beck report details a 900 tpd alternative that the PSD permit, or any other document made available with the permit materials, declines to mention. Yet a smaller facility would have the obvious benefit of producing millions fewer tons of ash over the life of the facility. Indeed, Frederick County’s Special Projects Manager overseeing the incinerator has said that the county could choose an incinerator half the size of this one if Carroll County withdraws, as it has said it will,⁸ and if Frederick County finds no one to replace the County, as it has yet to do.⁹ Given this reality, MDE should require an up-to-date, transparent analysis of this option.

VII. Wheelabrator and the Authority must account for Carroll County’s pending withdrawal.

MDE should require and consider revised plans for a facility serving only Frederick County before making a final decision on these permits. Throughout the permitting process,

⁵ See http://www.nmwa.org/projects_and_services/frederick_reports_and_studies.shtml (last visited May 19, 2013).

⁶ Beck Study at 5-11 *available at*:

<http://www.frederickcountymd.gov/documents/23/26/RW%20Beck%20Report.PDF>

The authors note that they have “not reviewed or verified any of the information included in the Composting Report and we can offer no opinion regarding the reasonableness or accuracy of any of the information or data included in the Composting Report.” *Id.*

⁷ The applicants estimate that ash will amount to 30% of MSW burned by weight. A similarly sized MSW composting facility in Edmonton, Ontario reports that “[a]bout 35% of the material that goes through the composter goes to landfill.” See <http://www.bedminster.com/downloads/Edmonton%20Composting%20Facility.pdf>.

⁸ See County Commissioners of Carrol County, Maryland. Letter to Blaine R. Young, President, Board of County Commissioners of Frederick County. (June 28, 2012) (“[I]t is Carroll County’s wish to pursue other alternatives to the waste-to-energy plan....”)

⁹ Michael G. Marschner. Frederick County Special Projects Manager. Letter to Mayor and Council of the City of Brunswick, at 4 (March 20, 2013) (“Should Carroll County decide that it does not want to participate in the project, and a replacement County is not found, and Carroll County pays the penalty detailed in the memorandum of Understanding (MOU) among the Counties and the NMWDA, Frederick County and the NMWDA could choose to construct a smaller facility, possibly half the size of the proposed regional facility.”).

Wheelabrator and the Authority have presented the incinerator as a response to Frederick and Carroll Counties' alleged waste management needs. Yet anyone familiar with local politics in the area recognizes that Carroll County is almost certain to withdraw from this project, rendering the Frederick/Carroll County Waste-to-Energy facility a deceptive fiction.¹⁰ These permits must account for the increasingly likely contingency that Frederick County will pursue this project alone. This requires an explanation of what waste will fill Carroll County's 40% of the proposed facility's capacity, how the operators will ensure this outside waste does not include unacceptable levels of mercury and other toxic metals, and why a smaller facility would not be better suited to handle one county's trash. Without Carroll County's participation, the Materials Separation Plan, permit applications, and draft permits are misleading and incomplete.

The Materials Separation Plan is particularly inaccurate and misleading for a facility built to handle Frederick County's waste alone. The plan's purpose is to "identify the goals and approaches for separating certain components" of the MSW stream, including the counties' outside contracts for removing household hazardous waste from their waste streams. Materials Separation Plan at 1-1, 3-8, 3-15. But the plan fails to advance that purpose because it depends in large part on separation approaches and capabilities in Carroll County's Solid Waste Management Plan to fulfill the requirements of 40 C.F.R. § 60. Without Carroll County's participation, Frederick County will have to import a greater proportion of the waste fed into the incinerator from areas with unknown materials separation systems. Frederick County would also be responsible for disposing of the all of the approximately 150,000 to 180,000 tons of ash per year produced by the facility, rather than sharing the disposal burden with Carroll County, thereby increasing Frederick County's costs for processing and disposing of the ash. *See* Materials Separation Plan at 3-17. A new plan should disclose the costs and benefits to Frederick County of assuming this solitary role, and it should receive scrutiny in a public hearing, as required under 40 C.F.R. § 60.57b(2).

The existing Materials Separation Plan, presented at a public informational meeting in August of 2010, notes that the facility is "sized to meet the needs of the *Counties*," (emphasis added) including both counties' projected population growth. *See* Materials Separation Plan at 2-1. It offers the public potentially misleading information with respect to the facility's service area size, type and amount of materials for separation, and separation processes, because the Authority and Wheelabrator represented the facility as a joint Frederick/Carroll County project. A facility serving Frederick County alone has very different needs. A revised Materials Separation Plan should properly review the place of this proposal as applied to Frederick County's waste management system.

The inclusion of Carroll County's waste stream and management needs may similarly cloud the permit applications' prospective analyses of the facility. The benefit-cost analysis in

¹⁰ *See, e.g.,* Patti S. Borda, *Commissioners Take Questions on Incinerator*, Frederick News-Post (March 9, 2013) available at: <http://www.fredericknews-post.com/sections/news/display.htm?storyid=1t47815#.UT3hpVdhorw> (quoting Commissioner Paul Smith as saying that Carroll County has indicated it might drop out and that "[t]heir dilly-dallying and hanging on is doing us no favors. . . . They're hurting us by not moving on."). *See also* Carroll County Solid Waste Workgroup Report (November 2012) (recommending that the county "reframe the concept of waste away from something that must be buried, burned or hauled away" and institute a series of measures to increase recycling and reduce the size of the county's waste stream and only remain open to the concept of "small-scale burning" at a later date depending on the state of emerging technologies).

the PSD/Air Construction Permit Application, for example, relies on the situation and needs of both counties. *See* PSD Application at 5-4. This analysis is required under COMAR 26.11.17.03(B)(6) to determine whether benefits of the proposed source significantly outweigh the environmental and social costs, and necessarily differs depending on the number of counties participating in the project. The Mercury Diversion Plan similarly relies “heavily on the efforts of the counties to ensure the public (generators of waste that will be delivered to the facility) about the potential environmental issues associated with the improper disposal of mercury.” *See* Letter from Wheelabrator to MDE 1 Re: Permit Application 1(Nov. 8, 2012) (showing Wheelabrator contemplating that the waste will come mostly from the counties’ residents, and that both counties’ education and recycling efforts are important in controlling the facility’s emissions). The facility may “only accept and incinerate solid waste as specified in this facility’s Refuse Disposal Permit Application.” *See* Refuse Disposal Permit at II-1. Both counties must provide written approval before the Authority can import outside waste. *See* Refuse Disposal Permit Application Engineering Report at 2-1. Without Carroll County’s participation, MDE must alter this importation requirement to allow the disposal of waste from other counties. MDE should also consider the consequences of the facility processing a higher percentage of waste imported from areas not studied in these applications, generated by sources with unknown materials separation policies and capabilities, who may not know or care that their waste will be burnt.

Such material changes to the facility’s service area and scope demand supplemental plans. *See, e.g.*, Md. Code Ann., Envir. § 9-204(e)(2) (requiring Refuse Disposal Permit applicants to “submit to the Secretary any material change in the plans and specifications, with the reason for the change”); Md. Code Ann., Envir. §9-205(d) (requiring applicants to supplement plans insufficient in scope or detail to support a Refuse Disposal Permit). Supplemented plans for a Frederick County-only facility must consider changed factors, including the necessary facility size, the incoming waste stream’s composition, and ash disposal needs. Due to these changes, stakeholders in Frederick County should have an additional hearing and opportunity to comment. To increase the efficiency and decrease the confusion of this process, MDE should analyze the needs and effects of a Frederick County-only facility before making a final permitting decision on Wheelabrator’s application.

VIII. The Best Available Control Technology Determination for Greenhouse Gases Must Include Waste Separation and Limits on the Recyclable Content of Waste

The Clean Air Act’s Prevention of Significant Deterioration (PSD) program requires major sources of air pollution, including municipal waste combustors, to use the Best Available Control Technology (BACT) to control their emissions of greenhouse gases. Tailoring Rule, 75 Fed. Reg. 31514 (Jun. 3, 2010); Md. Code Ann. Envir. 26.01.06.14(B)(1). The BACT standard requires “the maximum degree of reduction” achievable with “available methods, systems, and techniques, including fuel cleaning [and] clean fuels... for control of the pollutant.” 42 U.S.C. §7479(3); *see also* COMAR 26.11.17.01. For a facility like FCCRWTE, waste separation clearly qualifies as both an available “fuel cleaning” and “clean fuel” technology, yet the applicants and MDE fail to consider even maintaining the current recycling programs in Frederick and Carroll Counties as potential BACT. The Clean Air Act requires a more thorough analysis.

EPA prescribes a 5-step, “top-down” approach to determining BACT for a particular pollutant. By failing to identify “all available control technologies,” the applicants and MDE have botched Step 1.¹¹ Indeed, between the applicant’s PSD application, and MDE’s draft approval conditions, the entire BACT analysis includes little more than an ill-explained reference to trash being a “renewable primary fuel,” a description of several energy efficient design elements, and a superfluous discussion of carbon capture and sequestration. *See* PSD Permit Application at 4-55, 4-56; PSD Permit Approval Conditions, at 5, 11.

This analysis neither supports MDE’s decision to crown energy efficient combustion the best control technology for GHGs, nor satisfies the Clean Air Act. First, as already indicated, MDE has failed to examine waste separation as an available fuel cleaning technology under Step 1, even though this is a simple, proven, and EPA-accepted method of reducing incinerator emissions. *See, e.g., In the Matter of Brooklyn Navy Yard Resource Recovery Facility*, PSD App. No. 88-10, at *6 (E.A.B. Feb. 28, 1992). Second, MDE appears to have endorsed the applicants’ counterfactual and illogical conclusion that all municipal solid waste is “renewable” and, therefore, “clean.” As explained below, MDE must consider recycling and composting programs as a means of “cleaning” the incinerator’s fuel stock, as well as limits on incineration of unseparated waste to ensure that the facility burns a cleaner fuel. To correct these deficiencies, MDE should revise its BACT determination.

A. MDE must consider waste separation as a fuel-cleaning technology.

EPA has long recognized waste separation as BACT for municipal waste combustors (MWCs), and “a proper BACT analysis requires consideration of all potentially ‘available’ control technologies.” Therefore, MDE erred by not considering waste separation as BACT for GHGs. *See In re Inter-Power of New York, Inc.*, PSD App. Nos. 92-8 and 92-9, at *10 (E.A.B. March 16, 1994). The New Source Performance Standards for MWCs, promulgated prior to EPA’s decision to regulate greenhouse gases as pollutants, explicitly authorize consideration of waste separation as BACT. Fed. Reg. 5488, 5496, n.4 (Feb. 21, 1991). EPA’s recent guidance for determining BACT for GHGs does not alter this policy, providing that “‘a control option. . . may be an. . . ‘inherently lower-polluting process/practice’ that prevents emissions from being generated in the first instance.” EPA, PSD and Title V Permitting Guidance for GHGs, at 30 (March 2011) (quoting *In re Knauf Fiberglass, GMBH*, (E.A.B. 1999)). Thus, because waste separation is an available emissions control technology, MDE must revise its BACT analysis for FCCRWTE to consider waste separation as a means of reducing GHG emissions.

MDE need not consider “every detail of every conceivable separation and collection program” in its revised BACT analysis. Rather, the agency must only examine “realistic separation programs” viable in the locale. *Brooklyn Navy Yard* at *6. Environmental Appeals Board cases demonstrate that such “realistic programs” must meet three requirements. First, the separation method must be targeted at reducing emissions of a particular pollutant. Second, reductions from separation must be calculable. Third, the separation method may not redefine the purpose of the facility. *See, e.g., In the Matter of Genesee Power Station LP*, PSD App. Nos. 93-1 through 93-7, at *14 (E.A.B. Oct. 22, 1993); *Brooklyn Navy Yard*, at *6. Programs to divert nitrogen- and fossil carbon-containing materials from the incinerator, such as enhanced plastics

¹¹ EPA, PSD and Title V Permitting Guidance for Greenhouse Gases, at 17-18 (May 2011).

and carpet recycling, and municipal composting satisfy these three requirements. MDE should examine such programs in a revised BACT analysis, and, at the very least, should take steps to make mandatory the Counties' existing recycling programs as a means of controlling GHG emissions.

1. Separation programs targeted at fossil carbon and nitrogen-containing materials would target greenhouse gas emissions.

Waste materials containing fossil carbon and nitrogen generate carbon dioxide (CO₂) and nitrous oxide (N₂O) when burned. Therefore, programs to increase plastics and carpet recycling and food waste composting would “target” the incinerator’s GHG emissions. *See Genesee Power Station*, at *14 (finding that removing lead-contaminated wood from biomass burner’s fuel targeted lead emissions); *Brooklyn Navy Yard*, at *6 (finding that separation of nitrogen containing waste targeted NO_x emissions). Burning plastics, carpet, and food waste generates significant GHG emissions. Plastics and carpet are both manufactured from petroleum or natural gas, so incinerating them releases fossil carbon in the form of CO₂ into the atmosphere.¹² Even when an MWC replaces a fossil fuel-burning power plant, plastics and carpet still emit more CO₂ than they offset, in part because waste-to-energy plants burn less efficiently than traditional power plants.¹³ Recycling both materials, by contrast, significantly reduces CO₂ emissions compared to combustion, according to EPA.¹⁴

Meanwhile, combustion of nitrogenous waste emits N₂O, a greenhouse gas with 310 times the warming potential of CO₂.¹⁵ Although N₂O emissions are partially dependent on combustion conditions, EPA has found that for MSW combustion, “most of the nitrogen in N₂O emissions is derived from the waste.”¹⁶ Residential and commercial food scraps, which account for roughly 21% of the waste stream, are a major source of nitrogen in municipal waste.¹⁷ Composting instead of combusting this category of waste reduces N₂O emissions significantly,¹⁸ so a program to collect and compost food waste would sufficiently target GHG emissions for

¹² The processes that create fossil fuels take place over millennia, so this extra carbon cannot quickly be reabsorbed and recycled into new fuels, but instead stays in the atmosphere and contributes to global warming. EPA, Causes of Climate Change (Jan. 8, 2013). Accessed at: <http://www.epa.gov/climatechange/science/causes.html>. By contrast, CO₂ emissions from organic materials, or biogenic CO₂, is already in the carbon cycle and can be offset by regrowth of trees and other biomass. EPA does not count biogenic CO₂ in calculating a source’s GHG emissions. GHG Implications of Combustion, Warm Version 12, at 4.

¹³ EPA, GHG Implications of Combustion, WARM Version 12, at 13 (Feb. 2012). EPA, Carpet, WARM Version 12, at 12

¹⁴ EPA, Plastics, Warm Version 12, at 5; Carpet, Warm Version 12, at 4. Because enhanced recycling would curb CO₂ emissions, it should have been considered in BACT.

¹⁵ EPA, Nitrous Oxide Emissions (April 22, 2013). Accessed at <http://epa.gov/climatechange/ghgemissions/gases/n2o.html>.

¹⁶ EPA, Combustion, Warm Version 12, at 4

¹⁷ EPA, Food Waste Basics (March 1, 2013). Accessed at: <http://www.epa.gov/epawaste/conserves/foodwaste/>. Furthermore, only certain types of plastics, e.g. polyamide and polyurethane, contain nitrogen, so they are not as major a source of nitrous oxide emissions as organic materials. Maria J.F. Gutierrez et al. Nitrous Oxide (N₂O) emissions from waste and biomass to energy plants, 23 *Waste Management & Research*, 133, 135 (2005).

¹⁸ Aerobic composting generates N₂O emissions in much lower amounts than combustion. *Compare* N₂O emissions factors for composting in IPCC, Biological Treatment of Waste, IPCC Guidelines for National Greenhouse Gas Inventories, 4.1, 4.6 (2006) *with* those for combustion, IPCC, Stationary Combustion, IPCC Guidelines for National Greenhouse Gas Inventories, 2.1, 2.19 (2006).

BACT purposes. Likewise, the high N₂O emissions from burning sewage sludge provide additional support for limiting the amount of sludge that FCCRWTE will be able to burn.

2. Waste separation would calculably reduce GHG emissions.

EPA has developed emissions factors, or the “greenhouse gas emission in metric tons of carbon dioxide equivalent per short ton of material managed,”¹⁹ for combustion of multiple types of plastic and organic wastes.²⁰ Thus, the GHG reductions from preventing incineration of plastics, carpeting, and food wastes can be accurately estimated. Where hard data show that waste separation will in fact reduce emissions, they must be considered as part of the BACT analysis. *See Ctr for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1202 (9th Cir. 2008) (requiring highway agency to monetize carbon reductions where petitioners had provided “substantial evidence of the value of carbon emissions reduction”); *Genesee Power Station*, at *14-15 (separation of lead-containing waste was an available control technology where a study showed a direct relationship between the amount of lead in an incinerator’s fuel and the facility’s lead emissions); *Brooklyn Navy Yard*, at *5 (separating nitrogen-containing waste was an available NO_x technology where EPA had concluded that “materials separation. . . will result in further reductions of emissions from MWCs”).

EPA’s Waste Reduction Model (WARM) closely examines how combustion of waste materials, including carpet, plastics, and food waste, contributes to greenhouse gas emissions.²¹ The emissions savings from recycling are likewise well-documented.²² Thus, “hard data” on the emissions reductions that recycling and composting programs could achieve clearly exist for GHGs. Such programs are particularly important tools for reducing GHG emissions, because, as NEA and Wheelabrator explore at length in their permit application, there are no add-on controls for GHGs in existence at power plants or incinerators like FCCRWTE. PSD Permit Application, at 4-56; *see also* EPA & DOE, Report of the Interagency Task Force on Carbon Capture and Storage, at 8-9 (Aug. 2010).

3. Waste separation would not redefine FCCRWTE.

Control technologies that do not disrupt the stated purpose of a source, nor alter its inherent design, do not redefine the source. *See In re Desert Rock Energy Co., LLC*, PSD Appeal Nos. 08-03 through 08-06, at *36 (E.A.B. Sept. 24, 2009) (finding insufficient support for agency’s conclusion that coal gasification would interfere with the purpose of a coal plant and alter inherent design elements); *see also Brooklyn Navy Yard*, at *7, *8 (separating nitrogen-containing waste did not redefine a municipal waste combustor). Here, requiring FCCRWTE to burn separated waste and support recycling and composting would not inhibit the facility’s capacity to generate energy from waste, nor alter the inherent design of the facility.

¹⁹ EPA, WARM Definitions and Acronyms, WARM Version 12, at 2 (Feb. 2012).

²⁰ *See generally* EPA, Combustion, Warm Version 12; Plastics, Warm Version 12.

²¹ *See generally* EPA, WARM Version 12; *see also* IPCC, Incineration and Open Burning of Waste, 2006 IPCC Guidelines for National Greenhouse Gas Inventories, 5.1, 5.21 (2006).

²² *See, e.g.*, EPA Region 10, Reducing Greenhouse Gas Emissions through Recycling and Composting, 14, 18 (May 2011).

FCCRWTE's purpose is twofold: waste disposal and electricity generation. Decreasing the amount of plastics, carpet, and food waste in the facility's feedstock would not redefine these objectives. MSW with less plastic and food scraps is still MSW and can still be burned in the same proportion to other materials that the permit application specifies. Therefore, MDE may not avoid considering waste separation as BACT on the ground that it would redefine FCCRWTE.

B. MDE must revise its BACT analysis of clean fuels to include separated waste.

Applicants claim that "since MSW itself is considered a renewable fuel and the majority of the CO₂ emissions are biogenic CO₂, MSW is considered a 'clean fuel' for GHG purposes." PSD Application, at 4-56. This claim ignores the 47% of CO₂ emissions from waste that are *not* biogenic,²³ confuses renewability with cleanliness, and evades consideration of actual clean fuel options, such as separated waste. According to this analysis, trash itself is clean. What's more, MDE has apparently accepted this reasoning, because it lists the facility's "renewable primary fuel" as BACT for GHGs in its Approval Conditions. PSD Approval Conditions, at 11. The agency should revise this determination to clarify the relationship between clean and renewable fuels and to analyze separated waste as a control technology for FCCRWTE.

1. Maryland law does not require FCCRWTE to qualify as "renewable" in order to operate.

Waste-to-energy does not automatically qualify as a renewable resource under Maryland law, although the definition of Tier 1 renewable sources includes waste-to-energy. A waste-to-energy facility must meet certain specifications before the power it produces qualifies for the Renewable Portfolio Standards. Md. Code Ann. Pub. Util. Cos., §7-704(a)(2), (f)(1)-(2). In particular, 80% of waste burned must come from counties that achieve recycling rates required by the Maryland Recycling Act. Md. Code Ann. Pub. Util. Cos., §7-704(f)(2)(ii). Thus, some recyclables must be removed from MSW before it counts as a renewable fuel source. However, Maryland law does not require waste-to-energy plants to qualify for the Portfolio Standards, or to comply with 7-704(f)(2)(ii), in order to operate. Nor has MDE indicated that it approved the PSD permit on condition that FCCRWTE qualify for the standard. Rather, under the current approval conditions, Wheelabrator could apparently decide not to apply for renewable energy credits, and would not be bound by §7-704(f). MDE should clarify its characterization of waste as a "renewable primary fuel," specifying, at the very least, that FCCRWTE must meet the current Portfolio Standards as a condition of operation.

2. Municipal waste is not clean.

The renewability of waste is a separate issue from its cleanliness, and the arguably "renewable" character of the trash fed into the incinerator should not exempt the applicants and MDE from undertaking a full clean fuels analysis. Maryland law does not recognize waste-to-energy as a "clean" energy source, so the elision of clean and renewable fuels is inaccurate even in that narrow sense. *Compare* Md. Code Ann., Pub. Util. Cos., §7-701(r)(10) (Apr. 9, 2013) (listing waste-to-energy among Tier 1 Renewable Energy Sources) *with* Md. Code Ann., Econ.

²³ EPA, Air Emissions from MSW Combustion (Mar. 22, 2013). Accessed at: <http://www.epa.gov/waste/nonhaz/municipal/wte/airem.htm>.

Dev. §10-801(f) (not listing waste-to-energy among sources eligible to issue clean energy bonds). Indeed, MSW is far from clean. As the PSD permit application demonstrates, FCCRWTE will generate large quantities of pollutants; EPA data show WTE plants emit more GHGs than coal.²⁴ However, as described above, waste is not uniform: its components have distinct emissions profiles. Thus, waste can be made more or less “clean” depending on what it contains

3. MDE’s “clean fuels” analysis must consider separated waste as a control technology.

The only conceivable “clean fuel” for an MSW incinerator is separated waste, from which a specified percentage of recyclables has been removed. A BACT analysis must identify versions of a facility’s fuel that will reduce emissions without necessitating major design changes to the facility. *See, e.g., In re Mississippi Lime*, PSD App. No. 11-01, at *15 (E.A.B. Mar. 22, 2011) (rejecting agency’s SO₂ BACT selection, coal containing 3.5% sulfur, when “the record was devoid of any analysis of why [coal with 3.2% sulfur content] was not available, and thus not technically feasible, or not cost-effective.”); *Sierra Club v. EPA*, 499 F.3d 653, 657 (7th Cir. 2007) (affirming that the difference between low- and high-sulfur coal amounted to “a difference in control technology” unless using the cleaner fuel would require major redesign of the facility).

Here, separated waste would be a lower-emitting alternative to unseparated waste, but MDE has not analyzed how limits on the composition of the waste stream would affect GHG emissions. Instead, the agency seems to treat waste as homogeneous, apparently accepting the permit application’s suggestion that the waste’s 53% biogenic carbon content confers cleanliness on the fuel as a whole. In fact, recycling and composting could significantly reduce the facility’s total GHG emissions, so MDE should have considered separated waste as a clean fuel. While the permit application presupposes the continued existence of the Counties’ recycling programs,²⁵ MDE does not formally condition its approval of the PSD permit on the Counties maintaining or improving these programs. Likewise the agency does not require the applicant to procure any of its waste from communities in compliance with the Maryland Recycling Act,²⁶ either directly or by qualifying for renewable energy credits. Such options to impose at least a minimum separation requirement are clearly feasible and would help to ensure that the facility actually does burn a clean fuel and generate lower emissions.

4. The waste separation program chosen must impose some responsibility for separation on the applicant.

Should MDE determine that waste separation qualifies as BACT for GHGs, the chosen program must impose responsibility on Wheelabrator for ensuring that plastics and food scraps have been removed from the waste and enable MDE to verify that the company has fulfilled this

²⁴ EPA, Air Emissions from MSW Combustion (Mar. 22, 2013). Accessed at: <http://www.epa.gov/waste/nonhaz/municipal/wte/airem.htm>

²⁵ *See, e.g.,* PSD Application at 4-56 (describing FCCRWTE’s activities to include “combustion of postrecycled MSW”).

²⁶ Maryland requires communities to recycle either 35% or 25% of their waste, depending on size. MD Code Ann. Envir. §9-905(a)(18)-(19).

responsibility. To be valid, waste separation programs must make the applicant “ultimately responsible for ensuring, to the extent feasible” that pollutant-emitting materials have been removed from the waste stream, as well as “provide a means of determining compliance with the fuel cleaning requirements.” See *Genesee Power Station*, at *15 (requiring BACT analysis to consider only lead removal programs that placed burden of compliance on incinerator operator). Here, the PSD and Refuse Disposal Approval Conditions contain no measures for verifying removal of GHG-emitting waste once it reaches FCCRWTE. See Refuse Disposal Permit Approval Conditions, V-2 (Dec. 21, 2012); PSD Permit Approval Conditions, at 5. Thus, if MDE does choose fuel cleaning as BACT, the agency must obligate Wheelabrator to ensure that separation has taken place, if not perform some separation itself.

C. Waste separation is not only an available technology, it is the best available technology for GHG reduction.

Requiring higher diversion rates for plastics, carpet and food waste would be both technically feasible and cost-effective. The Counties have a high potential to increase recycling of these materials. At 41.6% and 38%,²⁷ respectively, Frederick and Carroll Counties’ waste diversion rates are several percentage points below the Maryland average (45.2%²⁸), and significantly lower than rates in other counties, such as Montgomery County, which has a waste diversion rate of 57.7%.²⁹ The diversion rates in some American cities, like San Francisco, at 80%,³⁰ and Portland, with 63%,³¹ indicate that still more ambitious recycling is possible.

Indeed, the Counties could improve their recycling regime in simple, readily apparent ways. For instance, neither county currently has a recycling program for carpet,³² which alone makes up 2% of the waste stream nationally,³³ and has “one of the highest emissions reduction potentials through recycling.”³⁴ Likewise, data from Frederick County’s Waste Management plan suggest the Counties’ could do more to recover plastics for recycling. Only 8% of Frederick County’s total plastic waste was recycled in 2009,³⁵ meaning roughly 12,000 tons of plastics still stand to be burned each year.³⁶ Composting is similarly feasible: more than 160 communities

²⁷ Refuse Disposal Permit Application, at 3-2, 3-10.

²⁸ MDE, Maryland State, County and City Recycling (2011). Accessed at: <http://www.mde.state.md.us/programs/Land/RecyclingandOperationsprogram/StateCountyandCityContactInfo/Pages/programs/landprograms/recycling/local/recyclingrates.aspx>

²⁹ Montgomery County, Montgomery County Has the Highest Waste Diversion, Recycling Rates in Maryland (April 16, 2013). Accessed at: http://www6.montgomerycountymd.gov/Apps/News/press/PR_details.asp?PrID=9391.

³⁰ CBS Local, San Francisco Reports 80 Percent Waste Diversion Rate (Oct. 5, 2012). Accessed at: <http://sanfrancisco.cbslocal.com/2012/10/05/san-francisco-reports-80-percent-waste-diversion-rate/>.

³¹ City of Portland, Portland Recycles!, at 4 (August 2008).

³² Refuse Disposal Permit Application, at 3-7, 3-14 - 3-15

³³ EPA, Greening Your Purchase of Carpet, at 1 (Dec. 2001).

³⁴ EPA Region 10, Reducing Greenhouse Gas Emissions through Recycling and Composting, 14 (May 2011).

³⁵ According to Frederick County’s Waste Management plan, the County generated a total of 127,024 tons (at 3-2). The county estimated that roughly 10.4%, or 13,210.5 tons, of its waste was plastics (consistent with EPA’s 12.4% figure) (see 3-9). The County reported that only 1063.08 tons of plastics were recycled, as of 2009 (Table 3-3). This amounts to an 8% recycling rate for plastics.

³⁶ *Id.* at Table 3-3.

throughout the U.S. now have curbside food waste composting,³⁷ so the Counties have a roadmap for implementing analogous programs here.

Finally, enhancing existing recycling and composting programs would be comparatively cheap. Frederick and Carroll Counties already have the infrastructure to process recyclables. According to the Refuse Disposal permit application, Carroll County's materials recovery facility only operates at partial capacity. Refuse Disposal Permit Application, at 2-7. Both counties provide for yard waste collection and operate composting facilities, from which they sell or give away compost to local residents. *Id.*, at 3-8, 3-15. Therefore, increasing the rate of plastics recovery or expanding the composting programs would not require construction of additional infrastructure or inundate the Counties with waste they could not process.

IX. The Refuse Disposal Permit Does Not Specify Disposal Sites for Ash.

Maryland regulations require Refuse Disposal Permits for incinerators to identify "a proposed disposal site for the ash generated by the facility." COMAR 26.04.07.25(B)(11). The applicants acknowledge this obligation in the Refuse Disposal Permit Application, which lists the Reichs Ford Road Landfill in Frederick County and Northern Landfill in Carroll County as possible ash recipients. Refuse Disposal Permit Application at 1-2, App. B. The Application includes a disclaimer with this listing, however, that "the counties may secure airspace in other landfills and arrange for out-of-county ash disposal." *Id.* In fact, assuming the incinerator runs anywhere near its full capacity, the counties will exhaust the capacity of both named landfills unless they make out-of-county arrangements. Yet the Refuse Disposal Permit Application offers no further elaboration on what landfill space will enable the counties to avoid this scenario. This omission is confounding, given that the incinerator's sole stated purpose is to "preserve disposal capacity" at the Reichs Ford Road and Northern Landfills. Materials Separation Plan at 4-1, 4-2.

According to the incinerator's proponents, "any jurisdiction bringing waste to the Facility will be responsible for the disposal of its own portion of the ash."³⁸ If this is the case, a revised Refuse Disposal Permit Application should specify the out-of-county landfills to which ash may be trucked and describe how ash will be divided among source locations. Finally, a revised application should identify a recipient facility for ash that the required testing demonstrates to be hazardous.

X. The permit application fails to identify offsets for NO_x emissions.

MDE may not approve the permit-to-construct because it fails to identify where required offsets for NO_x will be obtained. The agency must deny a permit unless the applicant obtains "more than equivalent emission offsets from existing sources in the area impacted by the proposed new major stationary source." COMAR 26.11.17.03(B)(3). Here, the FCCRWTE applicants acknowledge that "FCCRWTE will be required to obtain offsets for NO_x," but attempt to defer identifying the sources of the offsets until later, assuring the agency that "the necessary

³⁷ Debra Atlas, Curbside Food Waste Collection – A Growing Trend, Sierra Club Green Home (Feb. 5, 2013). Accessed at <http://www.sierraclubgreenhome.com/go-green/curbside-food-waste-collection-a-growing-trend>.

³⁸ Michael Marschner. Frederick County Division of Utilities and Solid Waste. Letter to Mayor and Council of the City of Brunswick, at 3 (Mar. 20, 2013).

offsets [will be] identified and obtained as required.” PSD application, at 3-15. This delay violates Maryland regulations and the Clean Air Act. *See, e.g., N. Baton Rouge Env'tl. Ass'n v. La. Dept. of Env'tl. Quality*, 805 So.2d 255, 258 (La. Ct. App. 2001) (agreeing with agency that permit application was complete once applicant had obtained VOC offsets from another facility). Thus, before MDE can approve the FCCRWTE permit to construct, the agency must ensure that the facility can offset its NO_x emissions.

Conclusion

For the foregoing reasons, MDE should withhold approval of the permits for this facility and require Wheelabrator and the Authority to provide additional analyses and fully disclose the impacts of the proposed project.

Sincerely,

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