Robert L. Brubaker
rbrubaker@porterwright.com

Porter Wright
Morris & Arthur LLP
41 South High Street
Suites 2800-3200
Columbus, Ohio 43215-6194

Direct: 614-227-2033
Fax: 614-227-2100
Toll free: 800-533-2794

www.porterwright.com

porter wright

CINCINNATI
CLEVELAND
COLUMBUS
DAYTON
NAPLES
WASHINGTON, DC

September 23, 2011

Administrator Lisa P. Jackson
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

EPA Docket Center, EPA West (Air Docket)
ATTN: Docket ID No. EPA-HQ-OAR-2009-0491
Environmental Protection Agency
Mailcode: 2822T
1200 Pennsylvania Avenue, NW.
Washington, DC 20460

RE: Request of Air Products and Chemicals, Inc. for Reconsideration and/or Applicability Determination on United States Environmental Protection Agency's Cross-State Air Pollution Rule, 76 Fed. Reg. 48,208 (Aug. 8, 2011)

Dear Administrator Jackson:

We write on behalf of Air Products and Chemicals, Inc. ("Air Products") to formally request that you reconsider and revise the final August 8, 2011 Cross-State Air Pollution Rule (Transport Rule) to enable blast furnace gas (BFG) clean energy recovery technology to qualify for the rule's "cogeneration unit" exemption. If granted, this request would change the efficiency calculation provisions for cogeneration units to either exclude energy input from BFG or treat the energy used to compress BFG as useful power. In the alternative, we request EPA's determination that the BFG combustion turbine cogeneration technology proposed by Air Products could qualify as a "cogeneration unit" under the Transport Rule, if the compressor were located on another company's property or powered by electricity from a source other than the cogeneration unit. The use of BFG as a cogeneration fuel would result in no increased emissions compared to the current alternative of flaring the gas, but would displace the thousands of tons of CO_2, SO_2, NOx, PM, and Hg that would otherwise be emitted to generate the electricity that Air Products' combustion turbine cogeneration technology would provide. Indeed, the BFG combustion turbine cogeneration technology fulfills each of the Administration's environmental, energy, and economic policy preferences: protection of manufacturing jobs, clean alternative energy, energy efficiency, GHG mitigation, SO_2 and NOx emission reductions, waste recovery, energy diversity, and secure supplies of domestic energy. None of these energy, economic, and environmental benefits will be realized unless the Transport Rule treats energy used on-site at cogeneration units to compress BFG for combustion the same way it treats energy used off-site to prepare conventional fossil fuels such as coal, fuel oil, and natural gas. Efficiency should not be calculated in a way that disadvantages innovative energy recovery technologies relative to conventional fossil fuels.

On November 22, 2010, Air Products submitted comments on the Environmental Protection Agency's Proposed Air Pollution Transport Rule (Proposed Transport Rule). *See* 75 Fed. Reg. 45,210 (August 2, 2010). Air Products' comments explained that high efficiency, combined cycle cogeneration units burning BFG – a byproduct produced in blast furnaces during the process of reducing iron ore to iron – cannot meet the cogeneration unit exemption's efficiency requirements if the energy required to compress the gas for injection into the turbine is considered parasitic load. Because BFG has a low calorific content, compressing BFG to serve as a suitable fuel for the gas turbine requires more energy than that required by an equivalent amount of natural gas (by calorific content). Natural gas arrives at the point of consumption in a high-pressure state, so the energy used in this compression is not considered parasitic load when calculating the efficiency of natural gas-fired cogeneration systems. Because the energy used to compress BFG is considered parasitic load, steel mills that could reduce system-wide emissions of NOx and CO_2 by hundreds of thousands of tons if they switched from purchased coal-fired generation to combusting on-site BFG are instead flaring the BFG. To avoid this needless waste, Air Products proposed modifying the calculation of "total energy input" in the cogeneration unit exemption to exclude energy input from BFG, and/or modifying the definition of "useful power" in the exemption expressly to include energy used to compress BFG.

The final Transport Rule did not incorporate Air Products' proposed revisions to the cogeneration unit exemption. *See* 76 Fed. Reg. 48,208 (Aug. 8, 2011). Additionally, EPA's Primary Response to Comments on the Transport Rule, which the EPA published in June 2011, made no mention of Air Products' comments. Dwight Alpern of EPA's Clean Air Markets Division has informed Air Products that EPA disregarded Air Products' comments because those comments were not timely submitted.

Request for Reconsideration

Pursuant to 42 U.S.C. § 7607(d)(7)(B), Air Products now respectfully requests reconsideration of EPA's decision to disregard Air Products' November 22, 2010 comments. Air Products acknowledges that EPA is required to include in the rulemaking docket only those comments that are "received . . . during the comment period[.]" 42 U.S.C. § 7607(d)(4)(B)(i). Similarly, EPA is required to respond to only those "significant comments" that are "submitted . . . during the comment period." 42 U.S.C. § 7607(d)(6)(B). Air Products further acknowledges that "comment period" is defined as "the period available for public comment" specified in the "notice of proposed rulemaking . . . published in the Federal Register[.]" 42 U.S.C. § 7607(d)(3). The comment period specified in the notice of proposed rulemaking for the Proposed Transport Rule ended on October 1, 2010. However, EPA accepted at least ten comments in the Transport Rule rulemaking docket that were submitted after the relevant deadlines. *See* Regulations.gov, Clean Air Transport Rule, Docket ID EPA-HQ-OAR-2009-0491, Public Submissions, http://www.regulations.gov/#!docketDetail;dct=PS;rpp=250;so=ASC;sb=postedDate;po=0;s=%2522late%252Bcomment%2522;D=EPA-HQ-OAR-2009-0491. Given that EPA has extended the comment submission deadlines for these entities, it would be arbitrary and capricious to fail to extend the comment deadline for Air Products as well.

There are numerous substantive reasons to reconsider the Transport Rule's cogeneration unit exemption. The efficiency standard in the cogeneration unit exemption, as it currently stands, is flawed. It discourages steel mills from obtaining useful power and thermal energy from a gas stream that those steel mills are currently flaring or, at best, consuming in lower-efficiency conventional boilers. Instead, it encourages steel mills to continue to obtain their power from conventional coal or natural gas-fired power plants. Thus, for steel mills considering productive uses for their BFG, the efficiency standard in the cogeneration unit exemption is counter-productive at best.

Ironically, EPA designed the cogeneration unit exemption's fuel standards to discourage coal-firing. When EPA proposed the CAIR rule, it proposed to adopt the efficiency standards from FERC's regulations. But, rather than applying the efficiency standards to oil- and gas-fired units only, as FERC's regulations did, EPA chose to apply them to coal-fired units as well. EPA explained that "not applying an

efficiency standard to coal-fired units would be counter productive to EPA's efforts to reduce SO_2 and NO_X emissions under this proposed rule because of the relatively high SO_2 and NO_X emissions from coal-fired units." 69 Fed. Reg. 4566, 4610 (Jan. 30, 2004). EPA explained again, when it promulgated the CAIR rules, that "without application of the efficiency standards to coal-fired units, highly inefficient coal-fired units, which have particularly high emissions per MWhr generated, could be exempt from the CAIR Program." 70 Fed. Reg. 24,162, 24,277 (May 12, 2005). Yet, because high efficiency, combined cycle cogeneration units burning BFG have difficulty achieving the cogeneration unit exemption's efficiency requirements due to the substantial energy required to compress BFG, steel mills will choose to obtain their electricity from coal-fired units instead. There is no rational basis for an efficiency standard that encourages steel mills not to utilize their own energy resources to the fullest and to select a more polluting source of electricity from the grid.

EPA has revised the cogeneration unit exemption in the past to avoid such unintended consequences. In 2007, EPA modified the CAIR program's cogeneration unit exemption to exclude energy input from biomass. EPA promulgated this amendment because it concluded that "biomass cogeneration units as a group have a particular set of characteristics that together may make it difficult for many units to meet the efficiency standard in the cogeneration unit definition unless the units co-fire significant amounts of fossil fuel, such as coal." 72 Fed. Reg. 49,190, 59,194 (Oct. 19, 2007). EPA noted that encouraging cogeneration units to burn more coal was an "unanticipated[,] unintended[,]" and "paradoxical result" that was "not consistent with the purposes of the efficiency standard." *Id.* at 59,194-195. EPA further noted that "application of the original efficiency standard to existing biomass cogeneration units does not . . . promote the purposes of the standard" because such units "produce significant amounts of useful thermal energy (relative to their total energy output) and . . . achieve efficiency gains over non-cogeneration units." *Id.* at 59,194. Accordingly, EPA revised the efficiency standard in the cogeneration unit definition to exclude energy input from biomass fuels from the efficiency calculations. *See id.* at 59,195.

In its November 2010 comments, similarly, Air Products proposed a revision to the Transport Rule's cogeneration unit exemption that would modify the definition of cogeneration unit to exclude energy input from blast furnace gas. (An alternative, suggested revision would include energy used to compress blast furnace gas in the definition of "useful power" for purposes of the efficiency calculation.) Like the biomass amendments to the CAIR cogeneration unit exemption, amending the Transport Rule's cogeneration unit exemption to exempt BFG fuel input would resolve an unintended consequence that is inconsistent with the purpose of the exemption's efficiency standard.

The primary regulatory principle announced in President Obama's executive order on regulatory review, issued earlier this year, was that "[o]ur regulatory system must protect public health, welfare, safety and our environment while promoting economic growth, innovation, competitiveness, and job creation." *See* Executive Order 13563 (*available at* 76 Fed. Reg. 3821 (Jan. 21, 2011)). To carry out this principle, EPA has announced that "[a] central goal" of its regulatory program will be "to identify methods for reducing unjustified burdens and costs." EPA, Improving Our Regulations: Final Plan for Periodic Retrospective Reviews of Existing Regulations, at p. 5 (Aug. 2011). Revising the Transport Rule's cogeneration unit exemption, in order to make it easier for cogeneration units that combust BFG to meet the exemption's efficiency standards, would further all of these goals. First, EPA would make American steel mills more economically competitive. Second, EPA would encourage greater energy efficiency and reduce emissions from coal-fired power plants. By allowing steel mills to combust their BFG at high-efficiency cogeneration units, rather than flaring it, EPA would achieve greater NOx emissions reductions and would advance the policies underlying the historical exemption of cogeneration units from the Clean Air Act's cap-and-trade programs. Projects like Air Products' proposed Middletown Cogeneration facility (Middletown Cogen) would also displace hundreds of thousands of tons per year of CO_2 that would otherwise be produced by coal-fired generation. In short, Air Products' proposed revisions would be good for the environment and for the economy.

For all of these reasons, Air Products respectfully requests that the EPA reconsider its decision and revise the efficiency standard in the Transport Rule's cogeneration unit exemption per Air Products' November 2010 comments.

Request for Applicability Determination

If the EPA should choose, however, to disregard Air Products' proposed amendments to the Transport Rule's cogeneration unit exemption yet again, Air Products respectfully requests a determination of the applicability of that exemption to Air Products' proposed Middletown Cogen facility.

As Air Products explained in its November 22, 2010 comments, Air Products proposes to convert BFG into useful electricity and industrial process steam at the Middletown Works of AK Steel Corporation (AK Steel) in Middletown, Ohio. The Middletown Cogen would be owned and operated by Air Products at a leased parcel within AK Steel's mill next to the blast furnace. AK Steel would provide approximately 75% of the BFG produced by the blast furnace to Air Products, without compensation, under a 20-year Energy Conversion Agreement. Most of that BFG is presently flared. At the Middletown Cogen, however, the BFG from the mill (supplemented by a relatively small amount of natural gas) would be combusted. Most of the BFG would go to a combustion turbine rated at 100 MW. An unfired heat recovery boiler would take waste heat from the combustion turbine and convert it to steam for use at a 70 MW steam turbine generator. About 20% of the BFG sent to Air Products would go to two auxiliary steam boilers, which would create additional high-pressure steam for use in the steam turbine generator. Up to 430,000 pounds per hour of low-pressure steam extracted from the 70 MW steam turbine would be pipelined to AK Steel for use in the steel manufacturing process. The gas turbine generator and the steam turbine generator would normally produce approximately 117 MW, on an annual average net of steam demand. However, within defined limits, AK Steel would have sole authority to alter the ratio of steam to electricity produced by the Middletown Cogen at any given time. Air Products would retain title to the first 14 MW of net output from the Cogen in any hour. AK Steel would hold title to the remainder of power from the Cogen.

Air Products intends for the proposed Middletown Cogen facility to be designed and operated in a manner that does not trigger the applicability of the Transport Rule. Under the Transport Rule's cogeneration unit exemption, a cogeneration unit or system must produce "*[u]seful power* that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of *total energy input*, if useful thermal energy produced is 15 percent or more of total energy output, or not less than 45 percent of *total energy input*, if useful thermal energy produced is less than 15 percent of total energy output." 40 C.F.R. §§ 97.402 (2011), 97.502 (2011), 97.602 (2011), and 97.702 (2011) (emphasis added). "Useful power" is defined to exclude any energy from a cogeneration unit that is "used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls)." *Id.*

As indicated above, a large amount of energy is required to compress BFG to be a suitable fuel for a combustion turbine. On average, about 27 MW would be required to compress the BFG at the Middletown Cogen. If the compressor is powered by electricity from the Middletown Cogen and the "useful power" does not include the energy required for BFG compression, then the Middletown Cogen will not meet the cogeneration unit exemption's efficiency standards. In comparison, natural gas arrives at the point of consumption in a high-pressure state and the energy used in this compression is not considered to be parasitic load. Accordingly, Air Products respectfully requests a determination from the EPA as to whether the following potential, alternative arrangements may allow the Middletown Cogen to meet the efficiency standards:

- If the compressor were located on nearby property owned by AK Steel, would the compression of the BFG not be considered "on-site processing or treatment of fuel"?

- If AK Steel or a third party purchased the power needed to operate the BFG compressor from a source other than the Middletown Cogen and the compressor were not directly electrically linked to Middletown Cogen, would the energy used to compress BFG for use in the combustion turbine or boilers at the Middletown Cogen not be excluded from "useful power" in calculating the energy efficiency of the three cogeneration units (i.e., the combustion turbine and the two auxiliary steam boilers)?

We appreciate your consideration of these and Air Products' prior comments or, in the alternative, your determination regarding the application of the Transport Rule's cogeneration unit exemption to the proposed Middletown Cogen. If you have any questions or request any additional information with respect to these comments, please contact the undersigned.

Respectfully submitted,

Robert L. Brubaker

Eric B. Gallon

Porter Wright Morris & Arthur LLP
Counsel for Air Products and Chemicals, Inc.

cc: Gina McCarthy, Office of Air and Radiation
Tim Smith, OAQPS Air Quality Policy Division
Sonja Rodman, Office of General Counsel
Sam Napolitano, Clean Air Markets Division
Dwight Alpern, Clean Air Markets Division
Robert Miller, Clean Air Markets Division