

**ORAL ARGUMENT NOT YET SCHEDULED**

No. 11-1101 (Consolidated with 11-1285, 11-1328  
and 11-1336)

**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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CENTER FOR BIOLOGICAL DIVERSITY, *et al.*,

*Petitioners,*

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
and LISA P. JACKSON, ADMINISTRATOR,

*Respondents.*

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**ON PETITIONS FOR REVIEW OF  
76 FED. REG. 15,249 (MAR. 21, 2011) & 76 FED. REG. 43,490 (JULY 20, 2011)**

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**BRIEF *AMICUS CURIAE* OF THE NATIONAL ASSOCIATION OF  
CLEAN WATER AGENCIES IN SUPPORT OF RESPONDENTS**

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May 21, 2012

## **CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES**

Pursuant to Circuit Rule 28, the National Association of Clean Water Agencies submits the following supplemental statement as to parties, rulings, and related cases:

### **(A) Parties and Amici**

Except for the following, all parties, intervenors, and amici appearing in this Court are listed in the Opening Brief of Petitioners, and Opening Brief of Respondents:

National Association of Clean Water Agencies

### **(B) Rulings Under Review**

Petitioners seek review of a final action of the Environmental Protection Agency entitled *Deferral for CO<sub>2</sub> Emissions From Bioenergy and Other Biogenic Sources Under the Prevention of Significant Deterioration (PSD) and Title V Programs*, 76 Fed. Reg. 43,490 (July 20, 2011).

### **(C) Related Cases**

References to related cases appear in the Opening Brief of Petitioners.

/s/ Lisa Sharp  
Lisa Sharp

## **AMICUS CURIAE’S RULE 26.1 DISCLOSURE STATEMENT**

Pursuant to Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, the National Association of Clean Water Agencies (NACWA) discloses that it is a trade association organized under the laws of the District of Columbia, and represents the interest of nearly 300 of the nation’s publicly owned treatment works (POTWs) in legislative, regulatory, and litigation advocacy matters. Collectively, NACWA-member agencies serve the majority of the sewered population in the United States. NACWA has no parent companies, and no publicly held company has a 10% or greater ownership interest in NACWA.

/s/ Lisa Sharp  
Lisa Sharp

## Table of Contents

	Page
CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES .....	i
TABLE OF AUTHORITIES .....	v
GLOSSARY .....	vii
INTRODUCTION .....	4
ARGUMENT .....	11
I. EPA HAS AMPLE AUTHORITY TO DEFER, AND ULTIMAELY EXEMPT, BIOGENIC CO2 EMISSIONS FROM REGULATION .....	14
A. EPA’s Has No Mandate To Regulate Emissions That Do Not Cause Harm to Human Health or the Environment .....	14
1. CO2 Regulation Arose From Motor Vehicle Emissions .....	15
2. EPA Has The Power To Stay Its Regulatory Hand Under These Circumstances .....	16
B. EPA Has Ample Basis To Conclude That Biogenic CO2 Emissions From POTWs and Similar Sources Are at Least Carbon Neutral and Therefore De Minimis .....	18
1. Biogenic CO2 Emissions from POTWs Are Carbon Neutral .....	19
2. POTW Biogenic Emissions Differ From Those of Other Biomass .....	20
II. REGULATION OF BIOGENEIC CO2 EMISSIONS FROM POTWS WOULD BE COUNTERPRODUCTIVE AND CREATE SIGNIFICANT AND COMPLEX PERMITTING BURDENS .....	22
A. Eliminating the Deferral Would Cause Unnecessary, Disruptive and Counterproductive Administrative Permitting Burdens .....	23
B. Revoking the Deferral Would Burden Clean Energy Projects .....	27
III. CONCLUSION .....	29
CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATIONS .....	31

**Table of Contents**  
(continued)

**Page**

CERTIFICATE OF SERVICE .....	32
------------------------------	----

## **TABLE OF AUTHORITIES**

	<b>Page(s)</b>
<b>CASES</b>	
<i>Alabama Power Co. v. Costle</i> , 636 F.2d 323 (D.C. Cir. 1979).....	16
<i>City of Los Angeles v. County of Kern</i> , 509 F. Supp. 2d 865 (C.D. Cal. 2007).....	5
<i>Public Citizen v FTC</i> , 869 F.2d 1541 (D.C. Cir. 1989).....	16
<i>Public Citizen v. Young</i> , 831 F.2d 1108 (D.C. Cir. 1987).....	17
<b>OTHER AUTHORITIES</b>	
74 Fed. Reg. 66,496 (Dec. 15, 2009).....	16
75 Fed. Reg. 25,324 (May 7, 2010).....	15
Sally Brown and Peggy Leonard, <i>Biosolids and Global Warming: Evaluating the Management Impacts</i> , BioCycle, (Aug. 2004) .....	9
CEC Resolution No. 12-0328-3, Suspension of RPS Eligibility Guidelines Related to Biomethane, March 28, 2012 .....	14
*Combined Heat and Power Partnership, Opportunities for Combined Heat and Power at Wastewater Treatment Facilities: Market Analysis and Lessons from the Field (2011).....	12
Council for Environmental Quality, Draft Greenhouse Gas Reporting and Accounting Guidance (2010) .....	8
Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities.....	28
*IPCC, Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories .....	10

**Authorities upon which we chiefly rely are marked with asterisks.**

IPCC Guidelines for National Greenhouse Gas Inventories, 2006 .....	10
A. Listowski <sup>1</sup> , H. H. Ngo, W. S. Guo, S. Vigneswaran, H. S. Shin and H. Moon, <i>Greenhouse Gas (GHG) Emissions from Urban Wastewater System: Future Assessment Framework and Methodology</i> , 1 J. of Water Sustainability 113, 119 (June 2011) .....	9
Mass. Dept. of Energy Resources, Biomass Energy Rulemaking, Summary of Proposed Final Regulation .....	24
National Association of Clean Water Agencies, Renewable Energy Resources: Banking on Biosolids (2010) .....	6
National Resources Defense Council, Water Efficiency Saves Energy: Reducing Global Warming Through Water Use Strategies, (2009) .....	19
Kathleen O'Connor, Using NYSERDA's Anaerobic Digester Gas-to-Electricity Program (Jan. 21, 2010).....	27
Center, Climate TechBook, Anaerobic Digesters, June 2011 .....	19
US EPA, Combined Heat and Power Partnership, Opportunities for and Benefits of Combined Heat and Power at Wastewater Treatment Facilities (2007) .....	13
US EPA, Combined Heat and Power Partnership, Opportunities for Combined Heat and Power at Wastewater Treatment Facilities: Market Analysis and Lessons from the Field (2011) .....	12

## **GLOSSARY**

BACT	Best Available Control Technology
BTU	British Thermal Unit
CAA	Clean Air Act
CEC	California Energy Commission
CHP	Combined Heat and Power
CO <sub>2</sub>	Carbon dioxide
GHGs	Greenhouse Gases
IPCC	Intergovernmental Panel on Climate Change
NACWA	National Association of Clean Water Agencies
POTW	Publicly Owned Treatment Works
PSD	Prevention of Significant Deterioration
RFS	Renewable Fuel Standard
RPS	Renewable Portfolio Standard
UNFCCC	United Nations Framework Convention on Climate Change



## **IDENTITY AND INTEREST OF THE *AMICUS***

Pursuant to Federal Rule of Appellate Procedure Rule 29 and the accompanying motion, NACWA respectfully submits this *amicus curiae* brief in support of Respondents, the United States Environmental Protection Agency and Lisa P. Jackson, Administrator (collectively, EPA).

NACWA is a trade association representing the interest of nearly 300 of the nation's publicly owned treatment works (POTWs), which serve the majority of the sewered population in the United States and collectively treat more than 18 billion gallons of wastewater each day. For over 40 years, NACWA has maintained a leadership role in legal and policy issues affecting public authorities responsible for cleaning and recovering energy from the nation's wastewater and stormwater. NACWA is at the forefront of the development and implementation of scientifically based, technically sound, and cost-effective energy and environmental programs for protecting public and ecosystem health. NACWA is also committed to preserving municipalities' ability to choose the method of biosolids management that works best for their communities.

NACWA's members provide a function vital to public health and environmental protection. Its membership includes municipally-owned clean-water utilities all across the United States whose facilities treat municipal sewage, collect biosolids, and produce biogenic gases as part of the wastewater treatment

process. The EPA Rule at issue defers the regulation of biogenic emissions of carbon dioxide (CO<sub>2</sub>) at POTWs. Accordingly, NACWA-member entities are affected by EPA's *Deferral for CO<sub>2</sub> Emissions From Bioenergy and Other Biogenic Sources Under the Prevention of Significant Deterioration (PSD) and Title V Programs*, 76 Fed. Reg. 43,490 (July 20, 2011) ("Biogenic Deferral" or "Deferral").

Neither EPA nor any other party has addressed in detail the important and unique issues associated with permitting CO<sub>2</sub> emissions from POTWs. POTWs generate biogenic CO<sub>2</sub> emissions both from the activated sludge handling processes typical of every POTW, as well as from the combustion of biosolids to produce power or heat, or for disposal, which occurs at many POTWs. Since biogenic CO<sub>2</sub> emissions are largely inherent in virtually all POTW treatment processes, and larger emissions occur at the many POTWs that rely on biosolids combustion for power generation or disposal, NACWA's members have significant concerns that POTWs will have to bear the burden of seeking and complying with PSD and/or Title V permits in order to continue to discharge their critical public service functions, while providing no added benefit to the environment. Accordingly, NACWA has a vital interest in presenting the perspective of the municipal POTW community to the Court on this important issue.

The foregoing brief was written wholly by counsel for NACWA. NACWA has not received money from any party, party's counsel, or any other person apart from its members, intended to fund the preparation or submission of this brief.

## INTRODUCTION

EPA's Biogenic Deferral should be upheld for the simple reason that bioenergy and biogenic CO<sub>2</sub> emissions are fundamentally different from anthropogenic CO<sub>2</sub> emissions, and therefore merit separate regulatory consideration. Unlike anthropogenic CO<sub>2</sub>, generated by excavating carbon-rich material beneath the Earth's surface and burning it as fossil fuel, biogenic CO<sub>2</sub>—generated from biological processes—has always been part of the planet's natural carbon cycle. Different sources of biogenic CO<sub>2</sub> have different carbon cycle profiles and as such should not be evaluated or addressed in any monolithic way.

EPA is therefore entirely correct in considering biogenic CO<sub>2</sub> emissions as a category apart from anthropogenic emissions, and in deciding that it is prudent to take additional time to collect and evaluate scientific evidence, and make applicable policy decisions before subjecting one or more specific sources of biogenic CO<sub>2</sub> emissions to potentially unnecessary regulation. In addition, setting aside biogenic emissions from other source categories, CO<sub>2</sub> emissions from POTWs are decidedly biogenic under any reasonable standard.

### **Wastewater Management Produces CO<sub>2</sub> Biogenic Emissions**

Many key POTW wastewater treatment functions and biosolids management options result in emissions of biogenic CO<sub>2</sub> that would be needlessly regulated absent the EPA deferral. POTWs perform a critical and necessary public function

that protects the environment by treating and reclaiming more than 18 billion gallons of wastewater each day. Once wastewater reaches a POTW it goes through a series of physical, chemical, and biological processes that clean the wastewater and remove the solids. Biological treatment of the wastewater is required at most POTWs. During biological treatment, bacteria and other organisms consume the soluble organic matter in the wastewater, producing biogenic CO<sub>2</sub> emissions. Consequently, virtually all POTWs will emit CO<sub>2</sub> as part of the basic wastewater treatment process, and the entire source category is potentially at risk for unnecessary and counter-productive permitting.

In addition to the CO<sub>2</sub> emissions inherent in the wastewater treatment processes, CO<sub>2</sub> emissions also occur as part of biosolids management and disposal practices at many POTWs. Biosolids are the nutrient-rich, solid, semisolid or liquid organic materials resulting from wastewater treatment. As one court noted:

[C]ollection and treatment of wastewater, and the resulting generation of biosolids that must be recycled or disposed of, is a constant non-discretionary governmental function ... In other words, government agencies cannot decide to stop producing biosolids and instead must find ways to manage those that are produced.<sup>1</sup>

Some biosolids management practices often recognize the inherent heating value of biosolids, and the prospect of recovering some amount of energy from them. Because biosolids consist of organic material, they have an inherent energy

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<sup>1</sup> *City of Los Angeles v. County of Kern*, 509 F. Supp. 2d 865, 871 (C.D. Cal. 2007).

or fuel content. Unprocessed biosolids contain approximately 8,000 Btu per pound on a dry-weight basis, which is similar to the content of low-grade coal. To take advantage of the energy content of biosolids, POTWs may incinerate biosolids and recover some waste heat in that process, produce biodiesel from the biosolids, or use biogas created from biosolids to produce heat and power.<sup>2</sup>

In contrast to other possible biogenic source categories, POTWs that recover energy content from the never-ending supply of biosolids are not the “industrial facilities” “extract[ing] biomass fuels” from the environment that Petitioners target in their opening brief. *See* Pet. Br. 21. Rather, these POTWs beneficially harness the energy value of biosolids in a few different ways.

Incineration is a well established and commonly employed thermal conversion technology for biosolids processing that oxidizes the organic matter in biosolids, leaving behind only the inert (ash) fraction. Heat can be recovered from the incinerator off-gas and used at the plant for process heat or to generate power using steam turbines.

Anaerobic digestion is another widely used biosolids-processing technology where the biodegradable portion of the solids is decomposed by microorganisms in the absence of oxygen, which produces a useful biogas. Biogas is primarily

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<sup>2</sup> National Association of Clean Water Agencies, *Renewable Energy Resources: Banking on Biosolids* (2010).

composed of methane, which can be burned in a flare or in a device for on-site electric power production.

Power generation from biogas is widespread at POTWs, especially in areas with high electric rates and/or aggressive renewable energy programs and incentives. For example, the Los Angeles County Sanitation Districts produce 21 megawatts (MW) of renewable power from biogas at their Carson facility. The Orange County Sanitation District in California generates 9.3 MW of renewable power from biogas, and the Metro Wastewater Reclamation District in Denver, Colorado generates about 5 MW of renewable power from biogas.<sup>3</sup> Finally, the East Bay Municipal Utility District (EBMUD) recently expanded its renewable power project capabilities to efficiently generate 10.6 MW of power, making EBMUD a net producer of energy.<sup>4</sup>

Emissions from the wastewater treatment process and from the combustion of biosolids and biogas have the potential to make POTWs “major” sources under the Title V or PSD regulatory programs. In addition, permitting issues associated with CO<sub>2</sub> emissions from biogas or biosolids can be expected to increase, as many states continue to press for development of renewable or “green” power, including

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<sup>3</sup> *Id.*

<sup>4</sup> “Wastewater & Energy | East Bay Municipal Utility District – EBMUD.” *East Bay Municipal Utility District – EBMUD*. 12 Apr. 2012, available at <http://www.ebmud.com/our-water/wastewater-treatment/wastewater-energy>. (last visited May 21, 2012).

power generated from combustion of biosolids, or biogas derived from biosolids.

Thus, EPA's rule to defer regulation of CO<sub>2</sub> emissions from biogenic source such as biosolids and biogas is of great importance to many NACWA members.

### **Wastewater Treatment Processes Are Carbon Neutral**

The role of POTWs is to concentrate and accelerate the effectiveness of natural processes that decompose human waste. The over eight million dry tons of biosolids that POTWs process every year are distinct from other types of biomass.<sup>5</sup> Biosolids naturally release CO<sub>2</sub> as they undergo biological treatment, and also when they decompose in digesters or are combusted in sewage sludge incinerators or electric energy recovery units. All of these emissions come from the stored carbon originally "fixed" or sequestered in the recent past by biological sources (i.e., plants grown for consumption) through photosynthesis.

Biogenic CO<sub>2</sub> emissions from POTWs are naturally "offset" by the recent and future carbon absorption/sequestration of the flora and fauna that cause biosolids in the first place, creating a short-term closed-loop system. When new biomass is replanted to provide food for human consumption, the cycle begins all over again.<sup>6</sup> Thus, the release of the stored biogenic carbon fixed in biogas or biosolids, by itself, cannot *cause* an increase in atmospheric CO<sub>2</sub> levels, because

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<sup>5</sup> See EPA, Office of Wastewater Management, Emerging Technologies for Biosolids Management, EPA 832-R-06-05, Page 1-1 (2006).

<sup>6</sup> See, e.g., Council for Environmental Quality, Draft Greenhouse Gas Reporting and Accounting Guidance (2010).



the combustion of biosolids or resulting biogas is simply a natural carbon recycling process.<sup>7</sup> Moreover, such biogenic CO<sub>2</sub> emissions would be released into the atmosphere whether or not a POTW were there to properly manage them because they are already in the decomposition process.<sup>8</sup> As EPA has stated:

Biogenic emissions, in contrast [to anthropogenic emissions], result from natural biological processes, such as the decomposition or combustion of vegetative matter. Biogenic emissions are part of a closed carbon loop. Biogenic CO<sub>2</sub> emissions are balanced by the natural uptake of CO<sub>2</sub> by growing vegetation, resulting in a net zero contribution of CO<sub>2</sub> emissions to the atmosphere.<sup>9</sup>

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<sup>7</sup> See Wastewater Treatment Division, King County Department of Natural Resources and Parks, *Alternative Uses and Market Opportunities for Biosolids*, A Report to the King County Council (2009) (“Every year plants absorb carbon from the atmosphere and convert it into organic matter. This organic matter is what supports life on earth. The fixation and decomposition of this organic matter forms the basis for what is called the short-term carbon cycle. Biosolids, as they are made up of newly fixed carbon, are part of the short-term carbon cycle.”); *see also*, Sally Brown and Peggy Leonard, *Biosolids and Global Warming: Evaluating the Management Impacts*, BioCycle, Aug. 2004, at 54 (“All fixed carbon on earth was initially derived from plants using energy from the sun to reduce carbon from the atmosphere. There are two carbon cycles. The rapid cycle involves atmospheric carbon that is fixed by plants and returned to the atmosphere after the plant material is eaten. Biosolids fit into this cycle.”).

<sup>8</sup> A. Listowski, H. H. Ngo, W. S. Guo, S. Vigneswaran, H. S. Shin and H. Moon, *Greenhouse Gas (GHG) Emissions from Urban Wastewater System: Future Assessment Framework and Methodology*, 1 J. of Water Sustainability 113, 119 (June 2011) (“Urban Wastewater System”) (“Wastewater treatment is also considered a global warming mitigation factor. Without proper treatment, the carbon in discharged wastewater will eventually enter the ecosystem as CH<sub>4</sub> (or CO<sub>2</sub>), without the potentials for offset associated with biomass segregation and biogas energy recovery.”)

<sup>9</sup> See US EPA, Green Power Market, Green Power Partnership, <http://www.epa.gov/greenpower/gpmarket/> (last visited May 21, 2012).

The short- or near-term carbon cycle to which biogas and biosolids are a fundamental and necessary part is universally considered to be carbon neutral. It is this baseline understanding that explains why biogenic CO<sub>2</sub> emissions from biogas and biosolids are excluded from most GHG impact analyses around the world.<sup>10</sup>

This contrasts with the release of *anthropogenic* CO<sub>2</sub> emissions through combustion of carbon stored in fossil fuels. That carbon was sequestered long ago, would be expected to remain sequestered absent human intervention, and, when released, is additive to the short-term carbon cycle and therefore cannot be

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<sup>10</sup> See King County Report, *supra* note 6, at 10 (“Biosolids contain significant amounts of carbon, which is part of the actively cycling or short-term carbon cycle. Carbon that is actively cycling through plants, animals, and humans has no net impact on overall long-term levels of carbon in the atmosphere...”). The Intergovernmental Panel on Climate Change (IPCC) guidance and the United Nations Framework Convention on Climate Change (UNFCCC) reporting protocols both recognize the carbon neutrality of biosolids. See, IPCC, Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, at 5.28: “In sewage sludge the fossil carbon usually can be neglected”; IPCC, Frequently Asked Questions – Questions about the Waste Sector, at Page 15, Q53: “CO<sub>2</sub> emissions from wastewater treatment are not included in the national total in the IPCC Guidelines since these are assumed to be of biogenic origin.”; IPCC Guidelines for National Greenhouse Gas Inventories, 2006, at 6.6: “Carbon dioxide (CO<sub>2</sub>) emissions from wastewater are not considered in the IPCC Guidelines because these are of biogenic origin and should not be included in national total emissions.”; *Id.*, at 6.9: “Emissions from flaring are not significant, as the CO<sub>2</sub> emissions are of biogenic origin.”; UNFCCC, Clean Development Mechanism, Methodology AM0080, Mitigation of Greenhouse Gases Emissions with Treatment of Wastewater in Aerobic Wastewater Treatment Plants, Table 1, at 3-4: “CO<sub>2</sub> emissions from the decomposition of organic waste are not accounted for.”; similarly, the European Union directive on carbon trading specifies that “[b]iomass is considered as CO<sub>2</sub>-neutral.” EU Guidelines for the monitoring and reporting of greenhouse gas emissions, Annex I, 4.2.2.1.6.

immediately and naturally offset absent further human intervention. Biogenic CO<sub>2</sub> emissions from the wastewater treatment process, including biogas and biosolids, are also in contrast to the carbon cycle of other forms of biomass harvested specifically for combustion.

There is no getting around the fact that POTWs provide a non-discretionary government function of protecting public health and the environment by safely managing material created by human biological processes that would result in the creation of atmospheric CO<sub>2</sub> even if POTWs did not exist. Simple logic would require EPA to separately consider whether entities whose biogenic CO<sub>2</sub> emissions are part of the natural carbon cycle, like POTWs, should be subject to the same burdens and regulations applicable to entities whose CO<sub>2</sub> emissions release carbon from buried fuels into the atmosphere. For these reasons and those that follow, EPA acted lawfully when it authorized the Biogenic Deferral and this Court should uphold it.

### **ARGUMENT**

Heat or power generated by biosolids or biogas provides both a direct and indirect climate benefit – the energy production process captures the biogenic carbon that would otherwise be emitted (including transport and fugitive emissions), and the power produced avoids anthropogenic CO<sub>2</sub> emissions by displacing an amount of fossil fuel power that would otherwise be supplied by the

electric grid.<sup>11</sup> Substituting biogas to replace fossil-fuel combustion therefore helps reduce atmospheric CO<sub>2</sub> levels. If all POTWs with existing anaerobic digesters maximized their power production with Combined Heat and Power units (CHP), the amount of renewable energy production from POTWs would significantly increase.

<b>Potential Carbon Dioxide Emissions Displaced with CHP at POTWs<sup>12</sup></b>	
Input/Output	Value
Electric potential at POTWs with anaerobic digesters	<b>411 MW</b>
Total annual electric production (assumes year-round operation)	<b>3,602,826 MWh</b>
Adjusted all-fossil average CO <sub>2</sub> emissions factor	<b>1,860.14 lb CO<sub>2</sub>/MWh</b>
Total displaced CO <sub>2</sub> emissions	<b>3,350,880 tons CO<sub>2</sub>/year or 3,040,726 metric tons CO<sub>2</sub>/year</b>
Equivalent number of passenger vehicles	<b>596,052</b>

Additional energy production measures, such as food waste digestion, could increase these CO<sub>2</sub> displacement values even more.

<sup>11</sup> See generally, US EPA, Combined Heat and Power Partnership, Opportunities for Combined Heat and Power at Wastewater Treatment Facilities: Market Analysis and Lessons from the Field (2011), available at [www.epa.gov/chp/documents/wwtf\\_opportunities.pdf](http://www.epa.gov/chp/documents/wwtf_opportunities.pdf) (last accessed May 20, 2012)(“Opportunities for CHP”).

<sup>12</sup> *Id.*, at Table 8: Potential Carbon Dioxide Emissions Displaced with CHP at Wastewater Treatment Facilities.

State renewable portfolio standards (RPS) and other local programs and incentives encourage construction and development of biosolids/biogas power production facilities at POTWs. RPS programs promote the generation of renewable power through economic incentives or mandatory purchase obligations, and seek to achieve a defined and increasing percentage of total power supplied in the state from renewable resources. Many state RPS programs have designated power produced from biogas or biosolids as an eligible and qualifying renewable resource.<sup>13</sup> These designations typically reflect a policy determination that power derived from biomass or biogas provides a net GHG benefit. In fact, some states have impliedly concluded that biogas combusted onsite to produce power should be promoted as clean energy because such facilities help achieve net GHG emissions reduction goals.<sup>14</sup>

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<sup>13</sup> See, e.g., NACWA, *supra* note 1 at 12-15; Water Environment Research Foundation, Energy Management, Exploratory Team Report, Version 6 at 5 (2011), available at <http://www.werf.org/EnergyETReport>; see also, US EPA, Combined Heat and Power Partnership, Opportunities for and Benefits of Combined Heat and Power at Wastewater Treatment Facilities (2007) (“The use of biogas from anaerobic digestion at [POTWs] is often eligible for renewable fuel credits and clean energy funding. For example, biogas-fueled electricity generation qualifies as a renewable energy source in each state with a renewable portfolio standard”).

<sup>14</sup> On March 28, 2012, the California Energy Commission (CEC) voted to suspend the RPS eligibility of facilities that use pipeline biomethane (i.e. biogas) under California’s RPS because it was unclear whether pipeline biomethane achieved additional GHG reductions. Facilities that utilize biogas produced on-site were not suspended because the CEC implied there is no question that additional GHG emission reductions could occur as such facilities. See CEC Resolution No. 12-

**I. EPA HAS AMPLE AUTHORITY TO DEFER, AND ULTIMATELY EXEMPT, BIOGENIC CO<sub>2</sub> EMISSIONS FROM REGULATION**

Petitioners make an erroneous argument that EPA has no authority to exempt emissions of a pollutant from Clean Air Act (CAA) regulation even if the emissions have no adverse impact of human health or the environment. To support this argument, Petitioners would have to find some evidence in the CAA that Congress intended EPA to regulate emissions that do not harm the environment. There is no such evidence, which may explain why Petitioners' argument relies on snippets of the CAA without context.

**A. EPA's Has No Mandate To Regulate Emissions That Do Not Cause Harm to Human Health or the Environment.**

In the CAA, Congress made clear that the Act's overriding purpose is to regulate pollutants that EPA concludes pose some threat of harm. EPA's primary regulatory powers are its authority to regulate emissions of pollutants for which EPA has set a National Ambient Air Quality Standard, and its authority to regulate pollutants emitted by specific source categories.<sup>15</sup> Each of these provisions requires a threshold showing of harm to human health or the environment before

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0328-3, Suspension of RPS Eligibility Guidelines Related to Biomethane, March 28, 2012, available at <http://www.energy.ca.gov/portfolio/documents/#03282012> (last accessed May 20, 2012).

<sup>15</sup> See CAA § 109(b) regarding NAAQ Standards, § 111 for emissions from stationary sources and § 202 for mobile sources.

the authorized regulatory machinery may be set into motion.<sup>16</sup> The specific harm standards are somewhat different, but not relevantly so.

Petitioners, however, argue that EPA cannot rely on the *de minimis* or one-step-at-a-time doctrines to defer or ultimately exempt biogenic CO<sub>2</sub> emissions because neither the PSD nor Title V statutory provisions allow for consideration of off-site (i.e., not at the “source”) emissions decreases, or off-site CO<sub>2</sub> absorption. Pet. Br. 40-47. This argument puts the cart before the horse because it assumes that non-harmful emissions must be regulated in the first place. The entire CAA is premised on the requirement that EPA must find harm from emissions *before* those emissions may be regulated. This necessarily means that EPA has no Congressional mandate to regulate emissions for which no harm is or can be found.

### **1. CO<sub>2</sub> Regulation Arose From Motor Vehicle Emissions.**

The reason EPA began regulating CO<sub>2</sub> emissions from stationary sources in the first place is because CO<sub>2</sub> became a pollutant “subject to regulation” after EPA issued regulations governing GHGs from motor vehicles. 75 Fed. Reg. 25,324 (May 7, 2010). This rule was itself backed by an EPA rulemaking concluding that emissions of GHGs from motor vehicles were reasonably anticipated to endanger public health or welfare. 74 Fed. Reg. 66,496 (Dec. 15, 2009)(the Endangerment Finding). If EPA can conclude, as it expects to do, that at least some biogenic

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<sup>16</sup> See 74 Fed. Reg. at 66,516 (EPA acknowledges that concepts for NAAQS setting and endangerment determinations are “similar.”)

sources such as POTWs have no “net atmospheric impact,” 76 Fed. Reg. at 43,496, then it will be able to conclude that these sources do not need to be regulated since their emissions do not endanger public health and welfare.

## **2. EPA Has The Power To Stay Its Regulatory Hand Under These Circumstances.**

Biogenic CO<sub>2</sub> emissions have no adverse effect on public health and welfare, especially those emitted during as vital a process as public wastewater treatment. Petitioners take a far too narrow view of the scope of EPA’s discretion not to regulate under the CAA and the administrative doctrines the agency relied upon to support the deferral. Those doctrines, *de minimis* and “one-step-at-a-time,” are focused on one overriding issue: whether the decision not to regulate is consistent with the purposes of the statute and Congressional intent. Under the *de minimis* doctrine, an agency need not apply the language of the statute in a literal manner if this leads to “patently absurd results that will undermine Congress’ broader purposes,” *Public Citizen v. FTC*, 869 F.2d 1541, 1557 n. 33 (D.C. Cir. 1989), and the covered matter can be “fairly considered *de minimis*,” *Alabama Power Co. v. Costle*, 636 F.2d 323, 360 (D.C. Cir. 1979). The exception cannot “thwart a statutory command; it must be interpreted with a view to ‘implementing the legislative design;’” *Public Citizen v. Young*, 831 F.2d 1108, 1113 (D.C. Cir. 1987)(quoting ” *Alabama Power Co. v. Costle*, 636 F.2d at 360-61).



Using that framework, EPA is perfectly entitled to analyze lifecycle impacts of biogenic CO<sub>2</sub> emissions to determine whether Congress ever intended those emissions to be regulated under the statute. Moreover, EPA's determination in the Endangerment Finding that GHGs including CO<sub>2</sub> threaten human health and the environment was premised on its conclusion that "anthropogenic emissions are outpacing the rate at which greenhouse gases are removed from the atmosphere by natural processes over timeframes of decades to centuries." *Id.* at 66,517. For this reason, an extended timeframe needed to be applied to an endangerment determination because "the relevant time frame is decades to centuries for the primary greenhouse gases of concern." *Id.* at 66,514.

These conclusions allow EPA to consider the impacts on "the overall" or net energy balance of biogenic CO<sub>2</sub> emissions when determining what emissions are harmful, and this necessarily would include both "on-site" CO<sub>2</sub> emissions and off-site absorption/sequestration. Similarly, EPA is allowed to consider appropriate timeframes for emissions and absorption/sequestration to take into account the natural carbon cycle and possible delays between the rate of CO<sub>2</sub> emissions from certain biogenic sources and rate of absorption to create new sources.

Accounting for these factors does not, as Petitioners contend, "change what the statute tells [EPA] to measure." Pet. Br. 46. They are what the statute tells EPA to measure when deciding whether to regulate at all, and in the first place.

These factors considered, EPA has ample authority to defer the regulation of POTWs that are vital to their communities instead of unduly burdening them with regulations that will provide no benefits.

**B. EPA Has Ample Basis To Conclude That Biogenic CO<sub>2</sub> Emissions From POTWs and Similar Sources Are at Least Carbon Neutral and Therefore *De Minimis*.**

Petitioners contend that EPA did not show that any biogenic emissions exempted by the rule “were truly *de minimis* or trivial.” Pet. Br. 20. Biogenic CO<sub>2</sub> emissions are part of the natural carbon cycle and do not contribute to an increase in atmospheric CO<sub>2</sub> levels.<sup>17</sup> Carbon that is actively cycling through plants, animals, and humans has no net impact on overall long-term levels of CO<sub>2</sub> in the atmosphere.<sup>18</sup>

This is particularly true for certain biogenic CO<sub>2</sub> emission sources, including CO<sub>2</sub> generated during the wastewater treatment process and from the combustion of biogas collected from “biological decomposition of waste in landfills, wastewater treatment or manure management process.” 76 Fed. Reg. at 43493.

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<sup>17</sup> “Urban Wastewater System”, *supra* note 7 at 116 (“Short-cycle or natural sources of atmospheric CO<sub>2</sub> which cycles from plants to animals to humans as part of the natural carbon cycle and food chain do not contribute to global warming. Photosynthesis produced short-cycle CO<sub>2</sub>, removes an equal mass of CO<sub>2</sub> from the atmosphere that returns during respiration or wastewater treatment. Digestion processes, either aerobic or anaerobic, also only emit short-cycle CO<sub>2</sub>.”)

<sup>18</sup> *Id.*

The conclusion that there is no net increase in atmospheric CO<sub>2</sub> levels attributable to CO<sub>2</sub> emissions from such sources is neither complicated nor in dispute.

Indeed, Petitioner Natural Resource Defense Council agrees, having stated

[i]t is estimated that if all 544 large sewage treatment plants in the United States operating anaerobic digesters were to install [Combined Heat and Power] systems, about 340 megawatts of clean energy could be generated, offsetting 2.3 million metric tons of CO<sub>2</sub> emissions annually – equivalent to planting about 640,000 acres of forest, or the emissions of about 430,000 cars.<sup>19</sup>

The Pew Center on Global Climate Change has similarly concluded that “anaerobic digestion is a carbon-neutral technology to produce biogas that can be used for heating, generating electricity, mechanical energy, or for supplementing the natural gas supply.”<sup>20</sup>

### **1. Biogenic CO<sub>2</sub> Emissions from POTWs Are Carbon Neutral.**

Nowhere in Petitioners’ brief it is argued that CO<sub>2</sub> emissions from POTW biosolids are not biogenic or carbon neutral. Petitioners also do not contest the fundamental basis for EPA’s conclusion that biogenic CO<sub>2</sub> emissions are typically carbon neutral. Instead, they point to a few recent, and still disputed, studies that suggest some types of woody biomass burned as feedstock for power production are “not always carbon neutral.” Pet. Br. 14. Petitioners therefore seek to use the

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<sup>19</sup> NRDC, Water Efficiency Saves Energy: Reducing Global Warming Through Water Use Strategies, (2009), at 4.

<sup>20</sup> Pew Center, Climate TechBook, Anaerobic Digesters, June 2011, at 1.

limited and disputed possibility that one category of “traditional” biogenic CO<sub>2</sub> emissions, woody biomass energy production facilities, may “not always” be carbon neutral if certain parts of the overall available feedstock are used, to undermine EPA’s entire regulatory deferral.

However, Congress vested EPA, and not Petitioners, with the task of making final scientific and policy judgments that necessarily attend any decision to exclude any particular category of biogenic CO<sub>2</sub> sources in the first instance. Second, it is patently unreasonable to regulate all biogenic CO<sub>2</sub> emission sources just because there are disputed studies pertaining to just one type of biomass source. While biogenic CO<sub>2</sub> emissions from some source categories may require further life-cycle analyses to assess their overall impact on the carbon cycle, there are *no* issues concerning the carbon neutrality of biogenic CO<sub>2</sub> emissions from POTWs.

## **2. POTW Biogenic Emissions Differ From Those of Other Biomass.**

Biogenic CO<sub>2</sub> emissions from POTWs have what is essentially a “pristine” CO<sub>2</sub> neutrality profile. There are three key differences between wastewater biogenic CO<sub>2</sub> emissions and biogenic carbon emitted from energy production facilities combusting other sources of biomass. These differences are true both for CO<sub>2</sub> emissions inherent in biological wastewater treatment processes as well as CO<sub>2</sub> emissions resulting from combustion of biogas or biosolids.

First, unlike dedicated energy-production facilities, harvesting the biomass (crops) for food that ultimately results in the generation of biosolids collected by POTWs is an independent action that would occur whether the POTW collected and managed the biosolids or not. Thus, potential concerns about the land-use practices surrounding the crops harvested specifically for use at biomass energy sources do not arise with POTW biosolids.

Second, organic material in POTW biosolids will be replanted in at least equal quantities. The organic material is simply food for human or livestock consumption. So long as people continue to need to eat, that organic material will be replanted, generally on a like-kind basis. Thus, concerns about what might be replanted to continue the short-term carbon cycle with respect to non-POTW biomass facilities simply does not exist with respect to POTW biosolids.

Third, the organic material in POTW biosolids has a very short re-growth period, and therefore a very short-term carbon debt.<sup>21</sup> Almost all food crops are harvested and replanted at least annually. Thus, issues about the duration/length of the carbon debt payback period for different types of biomass are not a genuine concern with POTW biosolids.

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<sup>21</sup> See Brown & Leonard, *supra* note 7, at 54.

Consequently, neither EPA nor Petitioners have any reasonable basis to conclude that biogenic CO<sub>2</sub> emissions released from biosolids collected at POTWs or the wastewater treatment process will be anything other than carbon neutral.

Additionally, the size of the carbon-neutral category of POTW biogenic emissions is quite large. There are approximately 16,000 POTWs nationally, with almost all of these generating CO<sub>2</sub> emissions inherent in the biological wastewater treatment processes, and many of these generating biogenic CO<sub>2</sub> emissions from biogas and biosolids management. Moreover, POTW facilities perform essential services to protect human health and welfare, and are financially supported by the general public. Contesting the reasonableness of EPA's deferral from regulation of the biogenic CO<sub>2</sub> emissions from these fundamentally carbon neutral sources, because of disputed, potential life-cycle impacts of a minimal number of biomass energy production facilities, simply makes little sense.

## **II. REGULATION OF BIOGENEIC CO<sub>2</sub> EMISSIONS FROM POTWs WOULD BE COUNTERPRODUCTIVE AND CREATE SIGNIFICANT AND COMPLEX PERMITTING BURDENS.**

Petitioners argue that EPA has not supported its assertion that “regulating sources of biogenic CO<sub>2</sub> emissions, including having to make BACT determinations taking into account lifecycle fuel characteristics” would paralyze the permitting agencies.” Pet. Br. 54. Requiring states to make case-by-case assessment of a project's biogenic CO<sub>2</sub> emissions would cause (1) unreasonable

delay, (2) unnecessary costs, and (3) regulatory uncertainty, and (4) potentially conflicting determinations. Moreover, regulating biogenic CO<sub>2</sub> emissions would cause significant administrative uncertainty and delay energy recovery projects at POTWs, thereby harming the country's ability to achieve net CO<sub>2</sub> reductions.

**A. Eliminating the Deferral Would Cause Unnecessary, Disruptive and Counterproductive Administrative Permitting Burdens.**

Regulating biogenic CO<sub>2</sub> emissions under Title V and PSD would unnecessarily burden and significantly disincentivize development of new facilities seeking to recover energy from biosolids to generate carbon neutral power and minimize *anthropogenic* CO<sub>2</sub> emissions. In fact, such regulation would frustrate the very policy objectives it seeks to address.

The primary burden associated with permitting biogenic facilities, absent a deferral, stems from the need to make BACT determinations taking into account CO<sub>2</sub> life-cycle fuel characteristics on a case-by-case basis, and to issue a written analysis to support the permit determination reached. *See* 76 Fed. Reg. 43,496. Biogenic CO<sub>2</sub> life-cycle analyses of any kind are inherently complex. As EPA observes, state permitting authorities will “need to identify the specific energy and economic benefits of utilizing particular biomass feedstocks” to make the assessment. 76 Fed. Reg. 43,500. After that initial analysis, EPA recognizes that states “may need to explore the net carbon cycle in more depth to justify the conclusion that utilization of a biomass feedstock is BACT by itself.” *Id.*

The required application of net CO<sub>2</sub> emissions factors to a specific emission source is case-specific and takes time, resources, and data. For example, it took the Commonwealth of Massachusetts approximately three years to produce a study of the life-cycle impacts of woody biomass and then to integrate such study into proposed RPS regulations.<sup>22</sup> Even EPA, with far more resources than any state, required several years to conduct and finalize a similar assessment of renewable fuels for the Renewable Fuels Standard life-cycle analysis.<sup>23</sup> With respect to

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<sup>22</sup> On June 10, 2010, the Massachusetts Department of Energy Resources and Manomet Center for Conservation Sciences (Manomet) released the results of a six-month study that began in 2009 to answer some critical questions about using forest wood for energy in Massachusetts. See ManometBiomassPressRelease, available at [http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&ved=0CFMQFjAB&url=http%3A%2F%2Fwww.manomet.org%2Fsites%2Fdefault%2Ffiles%2FManometBiomassPressRel06%252009%252010%25201630.pdf&ei=5hi4T43-CIbegQev1cDECg&usg=AFQjCNE7\\_xyr6LPnXWDHT30EyxGN6AiYaQ&sig2=99j4-WlguoiFr0kmdiDsag](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&ved=0CFMQFjAB&url=http%3A%2F%2Fwww.manomet.org%2Fsites%2Fdefault%2Ffiles%2FManometBiomassPressRel06%252009%252010%25201630.pdf&ei=5hi4T43-CIbegQev1cDECg&usg=AFQjCNE7_xyr6LPnXWDHT30EyxGN6AiYaQ&sig2=99j4-WlguoiFr0kmdiDsag) (last accessed May 20, 2012). Proposed regulations based on the Manomet study were proposed on April 27, 2012. See Mass. Dept. of Energy Resources, Biomass Energy Rulemaking, Summary of Proposed Final Regulation, available at <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&ved=0CFMQFjAC&url=http%3A%2F%2Fwww.mass.gov%2Feea%2Fdocs%2Fdoer%2Frenewables%2Fbiomass%2Fsummary-of-rps-proposed-final-regulation.pdf&ei=0xm4T8CkN4Phggf0xoXjCg&usg=AFQjCNGJKA8tGyycY0VfK0ot2jBurSvuKA&sig2=Z-qs4ybzHRFIZDOAi3fKxA> (last accessed May 20, 2012).

<sup>23</sup> The Energy Independence and Security Act of 2007, P.L. 110-140, significantly expanded the renewable fuel standard (RFS) established in the Energy Policy Act of 2005 (P.L. 109-58). To classify biofuels under the RFS, EPA was required to calculate the lifecycle emissions of each fuel relative to gasoline or diesel fuel. Lifecycle emissions include emissions from all stages of fuel production and use, as well as both direct and indirect changes in land use from farming crops to produce biofuels. Starting in 2007, EPA issued a Notice of Proposed Rulemaking



biogenic emissions, EPA proposes here to take three years to complete its life-cycle assessment, which, absent a deferral, states would have to complete on a case-by-case basis for each source that requires or seeks a Title V or PSD permit, with far fewer resources at their disposal.

Life-cycle analyses also require policy judgments. Assessments of the pay-back period of a particular feedstock, and whether that period supports the conclusion that a source is relevantly carbon neutral in consideration of the long term horizon related to global warming, necessarily require permit writers to make policy decisions. For example, after Massachusetts concluded its life-cycle analysis of certain biomass facilities to assess which facilities should receive credit (incentives) as “renewable power” under the state’s standard, it ended up with a complicated series of matrices that provided differing amounts of credit for differing biomass facilities, fuel supplies and configurations, all based on differing conclusions as to the overall life cycle benefits of different biomass feedstocks. These are exactly the types of policy judgments that would have to be made by individual states, on a case-by-case basis, with a strong likelihood of different and even inconsistent decisions.

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on May 26, 2009, for the RFS with suggested methodology for the lifecycle emissions analysis. EPA issued a final rule on February 3, 2010. See Congressional Research Service Report, Calculation of Lifecycle Greenhouse Gas Emissions for the Renewable Fuel Standard (RFS), 7-5700, R40460, March 10, 2010.

Congress charged EPA with making these types of combined factual/policy judgments in the first instance. EPA has carried out this responsibility and has issued a deferral to determine whether biogenic CO<sub>2</sub> emissions should be regulated at all, and if so, how. Consistent with Congress' intent, EPA should be allowed the time to apply its expertise so that biogenic permitting exemptions are nationally consistent.

Nor are the permitting burdens for sources associated with Title V to be underestimated. If POTWs are brought into Title V as a result of biogenic CO<sub>2</sub> emissions, a suite of new administrative and monitoring requirements for a variety of pollutants will follow. These burdens would include new periodic and compliance assurance monitoring requirements, which have to be set and then adhered to, as well as a number of additional administrative burdens such as annual and semi-annual reporting. In some cases, new monitoring equipment will have to be purchased, installed and maintained. As well, such permits require an extensive public comment process, which is burdensome to both sources and state permitting agencies.

In addition, EPA observes that allowing states to permit biogenic emission sources on a case-by-case basis that take into account life-cycle analyses does not provide certainty to the sources seeking permits.<sup>24</sup> It is well established that

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<sup>24</sup> 76 Fed. Reg. 43500.

permitting uncertainty will tend to retard project development. For example, New York State's Energy Research and Development Authority recently concluded that one of the three main "obstacles" cited by state POTWs for not maximizing energy production from biogas was "air permitting requirements."<sup>25</sup>

### **B. Revoking the Deferral Would Burden Clean Energy Projects.**

Without the Biogenic Deferral, biogenic energy recovery projects would face significant obstacles. In the final rule, EPA recognized that use of biogas for energy production "can be part of a national strategy to reduce dependence on fossil fuels," and that "efforts are underway at the Federal, State and regional level to foster the expansion of renewable resources and promote bioenergy projects when they are a way to address climate change." 76 Fed. Reg. 43,492. EPA has also separately indicated that sewage sludge contains potentially 10 times the energy needed to treat it, and that it is technically feasible to recover energy from treated wastewater.<sup>26</sup>

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<sup>25</sup> Kathleen O'Connor, Using NYSERDA's Anaerobic Digester Gas-to-Electricity Program, (Jan. 21, 2010) at 7, available at [http://www.epa.gov/chp/documents/wbmr012110\\_oconnor.pdf](http://www.epa.gov/chp/documents/wbmr012110_oconnor.pdf), (last accessed May 20, 2012).

<sup>26</sup> According to EPA, "[s]ewage contains 10 times the energy needed to treat it, and it is technically feasible to recover energy from sludge. As renewable energy, it can be directly used in wastewater treatment, reducing the facility's dependency on conventional electricity. The greater the quantity of energy produced by the industry, the more the industry can help reduce emissions of greenhouse gases. Using solids as a resource rather than a waste may help stressed public budgets as well. Wastewater solids must be processed prior to disposal, and solids handling accounts for as much as 30% of a wastewater treatment facility's costs." US EPA,

Recovering the energy contained in biogas provides a direct and indirect climate benefit – it captures the biogenic carbon that would otherwise be emitted as methane, a more potent GHG (including transport and fugitive emissions), and also displaces or completely avoids anthropogenic CO<sub>2</sub> emissions that would be necessary to treat wastewater and manage biosolids. It can also potentially meet up to 10% of the nation’s electric energy demand.<sup>27</sup> When electricity is generated through combusting biogas, the produced power offsets all or a large percentage of a POTW’s electric power demand. The recovered thermal energy can be also used to meet digester heating loads and facility space heating requirements, further reducing the energy loads required to treat wastewater while also reducing overall CO<sub>2</sub> emissions.

Absent the EPA deferral, there is significant risk that the renewable energy potential and beneficial reduction of atmospheric CO<sub>2</sub> will be delayed or avoided altogether. If state permitting burdens increase for biogenic energy projects, project delays will increase and project costs will also increase. Permitting uncertainty also leads sources not to pursue new projects. As a consequence, states

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Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities, available at [http://www.epa.gov/waterinfrastructure/pdfs/guidebook\\_si\\_energymangement.pdf](http://www.epa.gov/waterinfrastructure/pdfs/guidebook_si_energymangement.pdf), (last accessed May 20, 2012).

<sup>27</sup> See *supra* note 13 at Appendix A (“Electricity recovered to the maximum extent from domestic wastewater can potentially meet 10 percent of the national electrical demand”).

seeking to incentivize production of green energy through tax incentives or renewable portfolio standards (or both) would be unable to achieve their stated RPS goals either at all, or in the ways intended. The consequences of delayed, deferred or avoid biogenic energy projects would therefore burden states that seek to promote “clean energy.”

In short, the administrative burden caused by regulating biogenic CO<sub>2</sub> emissions associated with wastewater treatment by POTWs would produce results directly counter-productive to very policy objectives of regulating biogenic CO<sub>2</sub> emissions in the first place – i.e. reducing the increase of overall atmospheric CO<sub>2</sub> levels.

### **III. CONCLUSION**

For the reasons stated above, EPA acted lawfully when issuing the Biogenic Deferral. Thus, NACWA respectfully requests that the Court deny the Petitions.

Respectfully submitted,

NATIONAL ASSOCIATION OF CLEAN  
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**CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME  
LIMITATIONS**

I HEREBY CERTIFY THAT the foregoing brief complies with the type-volume limitations, and typeface and type-style requirements of Fed. R. App. P. 32(a). As determined by the Microsoft Word 2003 software, the proportionally spaced typeface Times New Roman, 14 point, was used to produce this brief, which contains 6,631 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii) and Circuit Rule 32(a)(1).

/s/ Lisa Sharp  
Lisa Sharp

May 21, 2012

**CERTIFICATE OF SERVICE**

I certify that on May 21, 2012, I electronically filed the foregoing with the clerk of court of the U.S. Court of Appeals for the District of Columbia Circuit using the electronic case filing system of the court. The electronic case filing system sent a "Notice of Electronic Filing" to the attorneys of record who have consented to accept this Notice as service of this document by electronic means.

/s/ Lisa Sharp

Lisa Sharp