

VIA EMAIL AND FIRST CLASS MAIL

Shirley Rivera (AIR-3)
U.S. EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901

Email: R9airpermits@epa.gov

DOCKET	
08-AFC-1	
DATE	<u>OCT 14 2009</u>
RECD.	<u>DEC 10 2009</u>

Re: Proposed Permit To Regulate The Emission Of Air Pollutants
Docket No. EPA-R09-OAR-2009-0438
Permit No. SJ 08-01

Dear Ms. Rivera:

These comments are submitted on behalf of El Pueblo Para El Aire y Agua Limpio/People for Clean Air and Water, GreenAction for Health & Environmental Justice, the Center on Race, Poverty & the Environment, and the Natural Resources Defense Council in connection with the proposed Avenal Energy project in Kings County, California at 33119 Avenal Cutoff Road, Avenal, California 93204 (the "Project"). We write to discuss three specific issues: The BACT determinations, the effect of the proposed facility on ambient air quality, and the attainment and maintenance of the NAAQS. We believe that substantial changes must be made in each of these areas for the proposed Prevention of Significant Deterioration permit to be valid under the Clean Air Act.

Factual Background

The proposed Avenal Energy project in Kings County will add hundreds of tons of air pollution per year to what is already one of the most degraded airsheds in the United States. NO_x and VOC are ozone (commonly known as "smog") precursors and fine particle (PM_{2.5}) precursors. Both ozone and PM_{2.5} levels in the San Joaquin Valley constitute a public health crisis. The Environmental Working Group published the Air Resources Board's estimates that show 1,292 San Joaquin Valley residents die each year from long-term exposure to PM_{2.5}.¹ Ozone and PM pollution exacerbate respiratory conditions, including asthma, increase hospitalizations and emergency room visits, contribute to cardiac illnesses, and increase school and work absenteeism.² The American Lung Association ranks the San Joaquin Valley counties of Kern, Tulare, and Fresno as the third, fourth, and sixth most ozone-polluted counties in the United States, respectively.³ For long term exposure to PM_{2.5}, the American Lung Association ranks

¹Renee Sharp and Bill Walker, PARTICLE CIVICS: HOW CLEANER AIR IN CALIFORNIA WILL SAVE LIVES AND SAVE MONEY, Environmental Working Group at 19.

²American Lung Association, STATE OF THE AIR: 2009.

³*Id.* at 21.

the San Joaquin Valley counties of Kern, Tulare, Kings, and Fresno as the first, fourth, seventh, and eighth most polluted counties.⁴ A document prepared jointly by the California Air Resources Board and the American Lung Association describes ozone as

a powerful oxidant that can damage the respiratory tract, causing inflammation and irritation, and induces symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthma symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. The greatest risk is to those who are more active outdoors during smoggy periods, such as children, athletes, and outdoor workers. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage, and a reduction in the amount of air inhaled into the lungs. Recent evidence has, for the first time, linked the onset of asthma to exposure of elevated ozone levels in exercising children (McConnell 2002). These levels of ozone also reduce crop and timber yields, damage native plants, and damage materials such as rubber, paints, fabric, and plastics.⁵

The document also shows the significant health effects and costs of exposure to fine particulate matter and ozone in California.

In late 2008, Jane V. Hall, Ph.D., and Victor Brajer, Ph.D., published a comprehensive analysis of the effects from not meeting the 1997 8-hour ozone standard and the 2008 PM 2.5. The health effects of not meeting these standards, and their concomitant economic values, inflict a conservative measurable cost of \$5.7 billion *each year* –\$1,600 per person – in the San Joaquin Valley.⁶ Given these conditions, it is imperative that EPA subject the Project's PSD application to the highest level of scrutiny to minimize any emissions associated with the Project.

BACT Determinations.

The BACT determinations proposed by the Project and EPA are flawed in several respects. The BACT determinations do not comply with federal PSD program top-down BACT analysis requirements. The PSD permit is also flawed in that the applicant did not perform a BACT analysis for greenhouse gas emissions. Additionally, the proposed CO emission limitation for the combustion turbines is not BACT.

⁴*Id.* at 20.

⁵The California Air Resources Board and the American Lung Association of California, RECENT RESEARCH FINDINGS: HEALTH EFFECTS OF PARTICULATE MATTER AND OZONE AIR POLLUTION, January 2004 at 2.

⁶See Jane Hall and Victor Brajer, THE BENEFITS OF MEETING FEDERAL CLEAN AIR STANDARDS IN THE SOUTH COAST AND SAN JOAQUIN VALLEY AIR BASINS, November 2008.

Top-down BACT Analysis Requirements

The BACT determinations in this proposed PSD permit are not the result of top-down BACT analyses. In every instance in which PSD is triggered, no control technology or emission limit other than those ultimately proposed as BACT are considered or analyzed. EPA explains what is required in a top-down BACT analysis on pages 15 and 16 of the June, 2009 Statement of Basis, and then summarily disregards these requirements.

Nowhere in the permit application materials or the Statement of Basis do either the applicant or EPA list, rank, or eliminate for technical infeasibility any potential control technologies. Rather, the applicant merely examined other BACT determinations and picked one control technology and one emission limitation for each emission unit and PSD pollutant.

In fact, the BACT analysis provided in the application materials (Appendix 6.2-4) is performed under San Joaquin Valley Air Pollution Control District (SJVAPCD) rules, which differ from EPA's rules and make no mention of top-down analysis. The applicant must perform a top-down BACT analysis, and EPA must reject any BACT determinations proposed by the applicant that are not the result of a top-down BACT analysis.

Greenhouse Gas Emissions

The proposed BACT determination is faulty as a matter of law because it fails to consider or analyze the greenhouse gas emissions ("GHGs") from the Project or any technology to control them. As you know, Administrator Jackson announced on September 30, 2009 that EPA is proposing a rule requiring large industrial facilities that emit at least 25,000 tons of GHGs a year to obtain construction and operating permits covering these emissions. The Project is estimated to emit over 1.2 million tons of GHGs per year; *see* <http://www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480a17968>, Table 6.2-1.1. These construction and operating permits must demonstrate the use of best available control technologies and energy efficiency measures to minimize GHG emissions when facilities are constructed or significantly modified. The rule would address a group of six greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). *See* <http://www.epa.gov/nsr/documents/GHGTailoringProposal.pdf> (proposed rule); <http://www.epa.gov/nsr/fs20090930action.html> (fact sheet for proposed rule).

Even if CO₂ were not already regulated under the Act, it is clear that all GHGs are subject to regulation under the Clean Air Act. "Subject to regulation" means "capable of being regulated" and is not limited to pollutants that are "currently regulated." This reading is confirmed by the fact that federal regulations define "regulated NSR pollutants" to include not only air pollutants for which there are NAAQS under Section 109 of the Act, standards of performance for new sources under Section 111 of the Act, or standards

under or established by Title VI of the Act (relating to acid deposition control), but also “[a]ny pollutant that is otherwise subject to regulation under the Act.” 40 C.F.R. 52.21(b)(50); 40 C.F.R. § 51.166(b)(49). The category of pollutants “otherwise subject to regulation under the Act” must extend beyond pollutants that the U.S. EPA or states have already developed standards for because otherwise its inclusion in the definition of “regulated NSR pollutants” would be superfluous.

GHGs are “subject to regulation” under a number of Clean Air Act provisions, including Sections 111 and 202. Sections 111 and 202 require U.S. EPA to establish standards of performance for emissions of “air pollutants” from new stationary sources and motor vehicles, respectively. 42 U.S.C. §§ 7411, 7521. Regulation under those sections is required where air pollution “may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. § 7411(b)(1)(A); 42 U.S.C. § 7521(a)(1). Reflecting the precautionary nature of the Clean Air Act, this “endangerment” standard does not require proof of actual harm. Instead, EPA is supposed to avoid a “significant risk of harm” by taking action that will “precede, and, optimally, prevent, the perceived threat.” *Ethyl Corp. v. EPA*, 541 F.2d 1, 12-13 (D.C. Cir. 1976). As the Court noted in *Ethyl Corp.*:

Sometimes, of course, relatively certain proof of danger or harm from such modifications can be readily found. But, more commonly, 'reasonable medical concerns' and theory long precede certainty. Yet the statutes and common sense demand regulatory action to prevent harm, even if the regulator is less than certain that harm is otherwise inevitable. *Id.* at 25.

The 1977 Clean Air Act Amendments confirmed and adopted the precautionary interpretation enunciated in *Ethyl*, enacting special provisions, Pub. L. No. 95-95, § 401, 91 Stat. 790-91 (August 7, 1977), designed to “apply this interpretation to all other sections of the act relating to public health protection.” H.R. Rep. No. 294, 95th Cong., 1st Sess. 49 (1977).

GHGs are plainly subject to regulation under Sections 111 and 202 because, as the U.S. EPA recently found in its Proposed Endangerment Finding, there can be no reasonable doubt that GHG emissions from power plants, motor vehicles, and other sources “may reasonably be anticipated to endanger the public health and welfare.”⁷ As

⁷ The Clean Air Act provides a broad definition of “welfare” that encompasses a host of environmental ills:

All language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants.

42 U.S.C. § 7602(h). Of particular importance here, “welfare” refers to “effects on . . . weather . . . and climate.” Thus, the most basic effect of global climate change – that the Earth’s average mean temperature will increase – is directly implicated as an effect on public welfare under the Act. As discussed above, global climate change is already resulting in well documented impacts on climate and weather, including air and ocean temperature increases, widespread melting of snow and ice, changes in precipitation amounts

described above and in the Technical Support Document for the Proposed Endangerment Finding, climate change is likely to cause direct heat-related effects, extreme weather events, climate-sensitive disease impacts, air quality effects, agricultural effects (and related impacts on nutrition), wildlife and habitat impacts, biodiversity impacts, impacts on marine life, property damage, and social disruption (such as population displacement). These far reaching and grave public health and welfare impacts, which are in large part attributable to GHG emissions from power plants, automobiles and other sources, compel the conclusion that GHG emissions “may reasonably be anticipated to endanger the public health and welfare” and, therefore, must be regulated under Sections 111 and 202 of the Clean Air Act.⁸ Because BACT requirements extend to pollutants that are “subject to regulation under the Act” rather than to only those that are actually regulated, EPA need not and, in fact, cannot wait until the it actually promulgates such regulations under Sections 111 and 202. Instead, EPA must include GHG BACT limits for the Project now.

Regulating GHG emissions now, rather than waiting for finalization of the Proposed Endangerment Finding and promulgation of all of the regulations necessary to carry out every facet of the PSD program, is fully consistent with the requirements and goals of that program. A primary aim of the PSD program is:

and wind patterns, and more frequent extreme weather events such as hurricanes, heat waves, floods, and droughts.

⁸ While the Proposed Endangerment Finding focuses on emissions of GHGs by motor vehicles, U.S. EPA has essentially already made an endangerment finding for CO₂ and other greenhouse gases under Section 111 in 1996, when the agency required standards of performance for controlling landfill gas emissions. Such gas consists of 50% methane, 50% carbon dioxide, and less than 1% non-methane organic compounds. In a background technical document for that regulatory process, U.S. EPA, as early as March 1991, acknowledged that air emissions of greenhouse gases, including carbon dioxide and methane “contribut[ed] to the phenomenon of global warming,” and that the “global warming effects” of those emissions posed “potential adverse health and welfare effects.” EPA noted that while, at the time, there was uncertainty as to the timing and ultimate magnitude of global warming, there was already a “strong scientific agreement” that the increasing emissions of greenhouse gases “will lead to temperature increases” and that efforts were underway to develop control options.

In March 1996, EPA issued its final rule requiring control of landfill gas emissions, after determining that the gas “contributes to global climate change,” and meets the endangerment standard. Although the Rule was designed in part to control emissions of the trace amounts of non-methane organic compounds in the gas, one of the specific justifications that EPA articulated for adopting the Rule (particularly at the level of stringency chosen) was to limit emissions of methane to avoid global warming impacts. *See* 56 Fed. Reg. 24468, 24481 (March 12, 1996) (“[i]n considering which alternative to propose as BDT, EPA decided to consider both NMOC’s and methane reductions”); 61 Fed. Reg. 9905, 9906 (“Briefly, specific health and welfare effects from [landfill gas] emissions are as follows . . . methane emissions . . . contribute to global climate change as a major greenhouse gas”); *Id.* at 9914 (anticipated “methane reductions . . . are also an important part of the total carbon reductions identified under the Administration’s 1993 Climate Change Action Plan”). While the rule was directed at reducing methane rather than carbon dioxide emissions, EPA noted in the preamble to the final rule that “[c]arbon dioxide is also an important greenhouse gas contributing to climate change.” 56 Fed. Reg. at 24472. EPA also quantified the benefits of the rule based on “equivalent reduction in CO₂.” *Id.* (stating that “1.1 to 2.0 billion trees would need to be planted . . . to achieve an equivalent reduction in CO₂ as achieved by today’s proposal”).

to protect public health and welfare from any actual or potential adverse effect which in the Administrator's judgment may reasonably be anticipated [sic] to occur from air pollution or from exposures to pollutants in other media, which pollutants originate as emissions to the ambient air, notwithstanding attainment and maintenance of all national ambient air quality standards

42 U.S.C. § 7470(1). Given the well known actual and potential adverse impacts of GHG emissions, and the widely acknowledged need to reduce and control such emissions, it would be nonsensical to allow a major new source of GHGs to slip in under the wire and avoid regulation, especially when EPA has already issued a Proposed Endangerment Finding regarding GHG emissions.

What is not in controversy, however, is that the proposed BACT determination did not consider or analyze GHG emissions at all. This was plain error.

Carbon Monoxide

Though all of the BACT determinations must be set aside for failure to perform top-down analysis, the proposed CO BACT emission limitation runs afoul of even the flawed procedure. The BACT emission limit of 2.0ppmvd for CO for units GEN1 and GEN2 is flawed because it does not represent the most stringent emission limitation achieved in practice for this category and class of source. EPA states on page 18 of the Statement of Basis that they “believe 2.0 ppmvd CO is the lowest emission rate that has been included in a permit or in practice for a facility of this type.” A more thorough examination of the RACT/BACT/LAER Clearinghouse (RBLC) reveals several similar facilities with lower emission limitations.

Kleen Energy Systems (RBLC ID: CT-0151) is a similar generating facility with BACT limits for CO of 0.9ppmvd without duct burning, and 1.7ppmvd with duct burning at 15% O₂ over a 1 hour period. EPA should reject the 2.0ppmvd proposed BACT CO emission limitation because it does not represent the most stringent emission limitation for natural gas fired combined cycle combustion turbines.

The Virginia Electric and Power Company, Warren County Facility (RBLC ID: VA-0308)(operating scenarios 1 and 2) has CO limits of 1.2 and 1.3ppmvd, though the averaging time is unclear. If the averaging time is 1 hour, then this represents the most stringent emission limit achieved in practice. If the averaging time is longer than 1 hour, the Project must determine whether this lower limit with a longer averaging time represents the most stringent emission limitation achieved in practice, or should be required in addition to a 1 hour limit.

Under either federal or local BACT regulations, the Project must include these lower emission limitations in the CO BACT analysis.

Ambient Air Quality

The Project is expected to emit 80.7 tons/year of PM/PM10. *See* the June 16, 2009 EPA Statement of Basis And Ambient Air Quality Impact Report at p. 14. As we discuss below, we believe that the Project's plan to offset these PM emissions through SO_x offsets is invalid under the Clean Air Act. Accordingly, ambient air quality will be impaired by the Project.

Attainment and Maintenance of the NAAQS.

As you know, the San Joaquin Valley is in non-attainment for PM_{2.5}. The Project proposes to meet 98% of its PM offset requirements from SO_x offsets at a one-to-one ratio. *See* Final Staff Report, Air Quality Table 19. This is highly problematic for a number of reasons.

First, the one-to-one ratio ignores the very different health risks of SO_x and PM. The U.S. EPA has found that particulate matter can cause or contribute to:

- increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing, for example;
- decreased lung function;
- aggravated asthma;
- development of chronic bronchitis;
- irregular heartbeat;
- nonfatal heart attacks; and
- premature death in people with heart or lung disease.

See <http://www.epa.gov/particles/health.html>. These problems are exacerbated where, as here, most of the PM to be emitted by the Project will likely be PM_{2.5} or smaller. While SO₂ can also cause health problems, SO₂ particles tend to travel farther from their source than do PM particles. *See* <http://www.epa.gov/air/urbanair/so2/chf1.html> ("SO₂ and the pollutants formed from SO₂, such as sulfate particles, can be transported over long distances and deposited far from the point of origin. This means that problems with SO₂ are not confined to areas where it is emitted"). This means that it is not an even trade for people living near the Project to give away local PM reductions for SO_x reductions far away.

There simply is no reputable science supporting a one-to-one offset ratio of these pollutants when public health effects are considered. Nor is it clear that removing one ton/year of SO_x, a PM precursor, will in fact prevent one ton/year of PM particles from being created.

EPA recognized this when it recommended a 40 to 1 ratio for SO_x to PM trading. *See* 73 Federal Register 28339 (May 16, 2008). In this case, that would mean that the Project would need to meet its 100 tons/year PM requirement by offsetting against 4,000

tons/year of SO_x. That is nearly half the SO_x emissions inventory for the District for 2005.⁹

Moreover, the San Joaquin Valley Air Pollution Control District told EPA that the District did not need to control SO_x in the District because the SO_x levels “[have] been reduced to a level that makes further control measures ineffectual and unnecessary with respect to attainment of the PM₁₀ NAAQS.”¹⁰ They can’t have it both ways. If the nearly 8,000 tons/year of SO_x emitted in the Valley in 2005 is not a problem as a PM precursor, then there is no reason for the District to allow SO_x as a PM precursor to offset actual PM emissions. Yet, that is what is proposed for the Project.

Second, the Project applicants should not be allowed to use PM₁₀ as a surrogate for PM_{2.5} emissions. The EPA Statement of Basis And Ambient Air Quality Impact Report, at Sec. 7.1.3, page 21, states that: “The applicant has assumed, for this proposed project, that combustion emissions of PM are considered equivalent to those of PM₁₀ emissions [fn. omitted].”

The Draft Permit for the Project is legally and technically inadequate because it attempts to use PM₁₀ as a surrogate for avoiding the direct regulation of PM_{2.5} that is required by the Clean Air Act. As the U.S. EPA recently found, this surrogacy approach is “no longer substantially justified in light of the resolution of the technical issues” that had initially been used to attempt to justify the approach.¹¹ Moreover, the surrogacy approach is contrary to the plain requirements of the Clean Air Act, particularly where, as here, the local air district is in nonattainment for PM_{2.5}. See 73 Fed. Reg. at 28,342.

The PM_{2.5} requirements have been in place since 1997 when U.S. EPA issued the PM_{2.5} NAAQS. Now, *twelve years later*, the proponents of the Project are proposing to build a plant that still fails to comply with PM_{2.5} requirements – and would likely continue to do so for more than fifty years into the future. In order to fully protect public health and the environment, especially the health of California’s most vulnerable citizens, EPA should reject the use of PM₁₀ as a surrogate for PM_{2.5}, require the Project proponents to submit direct BACT analyses for PM_{2.5}, and include PM_{2.5} BACT limits in any final permit for the Project.

In 1997, U.S. EPA promulgated new annual and 24-hour NAAQS for PM_{2.5}. 62 Fed. Reg. 38,652, 38,711 (July 18, 1997); 40 C.F.R. § 50.7. EPA’s bases for regulating PM₁₀ and PM_{2.5} separately under distinct NAAQS were and remain differences in people’s exposure, where the particles lodge in the body (PM_{2.5} penetrates deeper into the lungs), and the health effects associated with each. See 71 Fed. Reg. 61,144 at 61,147 (Oct. 17, 2006). In essence, U.S. EPA determined 12 years ago that, in order to protect public

⁹ San Joaquin Valley Air Pollution Control District, 2007 PM₁₀ Maintenance Plan and Request for Redesignation, Appendix E, p. 58.

¹⁰ *Id.*, p. 57.

¹¹ See Letter from U.S. EPA Administrator Lisa Jackson to Paul Cort (April 24, 2009) (hereinafter, “Jackson PM 2.5 Letter”), attached hereto as Exhibit 1.

health and welfare, PM₁₀ and PM_{2.5} need to be regulated as separate and distinct air pollutants. They are not equivalents, and indeed the San Joaquin Valley is now in attainment for PM₁₀ but not for PM_{2.5}.

Leaving aside its legal invalidity, the PM₁₀ surrogacy approach is no longer appropriate by its own terms because the technical difficulties upon which it is based have been solved. As the U.S. EPA recently noted, there has been “resolution of the technical issues with respect to PM_{2.5} monitoring, emissions estimation, and air quality modeling that led to the PM₁₀ surrogacy policy in 1997.”¹² For example, technical capabilities for modeling PM_{2.5} do exist, 70 Fed. Reg. 68218, 68234-68235, 40 C.F.R. § 51, App W, 5.1 (e), (t), (h), 5.2.2.1, and U.S. EPA has identified both ISC and AERMOD as available models to analyze the impacts of PM_{2.5} in its Guideline to Air Quality Models. 40 C.F.R. § 51, Appendix W. EPA has issued Other Test Method 27 (OTM-27), previously known as Conditional Test Method 40 (CTM-040) for filterable PM_{2.5}. While this is not yet a promulgated test method, it is based on Method 201A, a well-established test method that has been formally adopted by EPA.¹³ Further, Method 202 is in regular use to measure condensable PM. As with any test method, EPA will continue to assess this method based on user feedback and will make necessary modifications to improve its accuracy and repeatability. EPA has also developed a test method capable of measuring both filterable and condensable particulate. The draft of this method, known as the “dilution sampling method,” is available on the EPA website as CTM-039.¹⁴ In addition, even under the PM_{2.5} Implementation Rule, the PM₁₀ surrogate approach cannot be used for sources in PM_{2.5} non-attainment areas (such as the San Joaquin Valley) as of July 15, 2008; this provision shows that PM_{2.5} can be regulated directly. 73 Fed. Reg. at 23,842.

A BACT analysis for PM₁₀ is simply not equivalent to a BACT analysis for PM_{2.5}. Because PM₁₀ and PM_{2.5} are different sized particles, technologies and work practices designed to control PM₁₀ have different and lower control efficiencies for PM_{2.5}. Therefore, an analysis focused solely on PM₁₀ will not identify the control options needed to achieve the maximum emission reductions of PM_{2.5}. In addition, there are a number of PM_{2.5} precursors, such as SO₂, NH₃, and NO_x, that need to be evaluated as part of a PM_{2.5} BACT analysis, but would not be in a PM₁₀ analysis.

In light of all of the above, it is clear that from a legal, technical and public health standpoint EPA must require BACT emission limits for PM_{2.5} directly as part of any final permit for the Project. As such, EPA must engage in a PM_{2.5} BACT analysis that identifies all available and feasible control options for that pollutant, ranks those options by effectiveness, selects the most effective options that are not properly ruled out due to collateral economic, energy, or environmental concerns, and establish emission limits that reflect the use of the most effective technology.

¹² Exhibit 1, Jackson PM_{2.5} Letter at 1; *see also* 73 Fed. Reg. at 28,340; *see also* 72 Fed. Reg. 54,112 (Sept. 12, 2007)

¹³ 72 Fed. Reg. at 20653 (“we believe that further validation of this method is unwarranted since the technology and procedures are based upon the same as evaluated for promulgated Method 201A”).

¹⁴ EPA website: www.epa.gov/ttn/emc/ctm.html.

Accordingly, the proposed permit should be rejected.

Thank you for your consideration of these comments.

Maricela Mares Alatorre

El Pueblo Para El Aire y Agua Limpio/People for Clean Air and Water

Bradley Angel

Executive Director

Greenaction for Health and Environmental Justice

Ingrid Brostrom

Staff Attorney

Center on Race, Poverty and the Environment

David Pettit

Senior Attorney

Natural Resources Defense Council