UNITED STATES COURT OF APPEALS
FOR THE TWELFTH CIRCUIT

September Term, 2015

Docket Nos. 14-000123 and 14-000124

SYLVANERGY, L.L.C.,

Petitioner

- v. –

SHANEY GRANGER, in her official capacity as Regional Administrator for Region XIII of the United States Environmental Protection Agency,

Respondent

AND

SAVE OUR CLIMATE, INC.,

Petitioner

- v. -

SHANEY GRANGER, in her official capacity as Regional Administrator for Region XIII of the United States Environmental Protection Agency,

Respondent

On Consolidated Petitions for Review of a Final Order of the Regional Administrator

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ORDER

Sylvanergy, L.L.C., and Save Our Climate, Inc. (SOC), have filed timely petitions pursuant to section 307(b) of the Clean Air Act, 42 U.S.C. § 7607(b)(1) (2012), seeking judicial review of the final decision of Shaney Granger, Regional Administrator of the United States Environmental Protection Agency (EPA), granting a Prevention of Significant Deterioration (PSD) preconstruction permit to Sylvanergy for the construction of a biomass-fired electricity generation and wood pellet production facility in Forestdale, New Union (the Forestdale Biomass Facility). The petitions are preceded by an order of the Environmental Appeals Board denying petitions for

review filed by Sylvanergy and SOC pursuant to 40 C.F.R. pt. 124 (2015). This Court has consolidated the petitions for the purpose of its review.

Sylvanergy takes issue with the PSD permit as issued by the state agency, the New Union Air Resources Board (NUARB), which is authorized by EPA delegation to issue such permits pursuant to section 165 of the Clean Air Act, 42 U.S.C. § 7475 (2012). In particular, Sylvanergy takes issue with NUARB's determinations that the proposed Forestdale Biomass Facility was subject to PSD review for greenhouse gases, and that a Sustainable Forest Plan constituted the best available control technology (BACT) for greenhouse gas emissions from the proposed facility. Sylvanergy also seeks to challenge an earlier decision by NUARB denying its request for a Non-Applicability Determination (NAD) and determining that the facility is a "major emitting facility" subject to PSD review pursuant to section 165. SOC agrees with NUARB's treatment of the proposed facility as subject to PSD review for both criteria pollutants and greenhouse gas emissions, but it takes issue with NUARB's BACT review, arguing that NUARB should have rejected the Sustainable Forest Plan as having unacceptable adverse environmental impacts and that NUARB improperly rejected a wood gasification and partial carbon capture and storage plant as BACT for greenhouse gas emissions from the proposed facility.

The Court has previously determined that both petitioners have standing to pursue their petitions for review.

The Court requests briefing and argument on the following issues:

1) Whether this Court has jurisdiction to review NUARB's denial of Sylvanergy's request for a Non-Applicability Determination. (Sylvanergy argues that this Court has jurisdiction to review this issue; SOC and Granger argue that it does not.)

2) If this Court has jurisdiction to review the denial of the NAD, whether NUARB properly determined that the Sylvanergy facility is a "major emitting facility" subject to PSD review.

    a. Whether the Sylvanergy facility is a "fossil-fuel fired" source subject to the 100 ton-per-year threshold under section 169(1) of the Clean Air Act, 42 U.S.C. § 7479(1) (2012). (Sylvanergy and Granger argue it is not; SOC argues it is.)

    b. Whether the Sylvanergy facility otherwise has the "potential to emit" more than 250 tons per year of carbon monoxide despite the limitations imposed by the Village of Forestdale site plan approval. (Sylvanergy argues it does not; SOC and Granger argue it does.)

3) Whether a biomass-fueled facility is subject to PSD review as an emitter of greenhouse gases. (Sylvanergy argues it is not; SOC and Granger argue it is).

4) Whether NUARB properly rejected consideration of a wood gasification and partial carbon capture and storage plant as BACT for the Sylvanergy facility. (SOC argues

that NUARB improperly rejected this option in its consideration; Sylvanergy and Granger argue that NUARB properly rejected it.)

5) Whether NUARB permissibly imposed the Sustainable Forest Plan as BACT for the Sylvanergy facility. (Granger argues that it was permissible for NUARB to impose the plan as BACT; Sylvanergy and SOC argue it was impermissible.)

SO ORDERED.

Entered 1st day of September, 2015

[NOTE: No decisions decided or documents dated after September 1, 2015 may be cited either in the briefs or in oral argument.]

BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

IN RE SYLVANERGY, L.L.C.

PSD Appeal No. 15-0123

ORDER DENYING REVIEW

Decided June 1, 2015

Before Environmental Appeals Judges Wink, Blinc, and Knod

Opinion of the Board by Judge Knod:

On June 12, 2014, the New Union Air Resources Board (NUARB) issued a federal Prevention of Significant Deterioration (PSD) permit to Sylvanergy, L.L.C., pursuant to section 165 of the Clean Air Act, 42 U.S.C. § 7475 (2012). The permit authorizes Sylvanergy to construct a new 500 million btu/hour biomass-fired electricity generation and wood pellet fuel production facility near Forestdale, New Union (the Forestdale Biomass Facility). On July 10, 2014, both Sylvanergy and Save Our Climate, Inc. (SOC) filed petitions for review of this PSD permit pursuant to 40 C.F.R. part 124 (2015), requesting on a number of grounds that the permit be remanded to NUARB for further consideration. For the reasons set forth below, the Environmental Appeals Board (Board) denies both petitions for review.

STATUTORY AND REGULATORY BACKGROUND

Congress amended the Clean Air Act (CAA or Act) in 1977 to provide for PSD review of new sources of air pollution in areas considered to be in attainment of the National Ambient Air Quality Standards established for criteria pollutants regulated under the Act. *See Clean Air Act Amendments of 1977*, Pub L. No. 95-95, 91 Stat. 685. Congress intended "to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources." CAA § 160(3), 42 U.S.C. § 7470(3) (2012). In order to implement this goal, Congress provided for PSD review to be applied to all new "major emitting facilities." Under PSD review, a party wishing to construct a "major emitting facility" in a PSD or attainment area must first obtain preconstruction approval in the form of a PSD permit. CAA § 165(a), 42 U.S.C. § 7475(a). In

order to obtain such a permit, the new facility must achieve emissions limits that reflect the Best Available Control Technology, or BACT, for regulated pollutants emitted from their facilities at significant rates. CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(b)(23), (j)(2) (2015). Regulated pollutants are not limited to those criteria pollutants for which NAAQS have been established, but include each pollutant subject to regulation under the Clean Air Act. *See Util. Air Regulatory Grp. v. EPA*, 573 U.S. __, __, 134 S. Ct. 2427, 2448-49 (2014).

FACTUAL BACKGROUND

Sylvanergy, L.L.C., proposes to construct a new facility, which will house a 500 million Btu/hour biomass-fired electricity generation unit, with the capacity to process and combust 150,000 tons of biomass fuel (dry weight) per year, and a wood pellet fuel production plant in the village of Forestdale, New Union. The Forestdale Biomass Facility would consist of an advanced stoker design wood-fired boiler together with two ultra-low sulfur diesel (ULSD) start-up burners, each with a maximum heat input rate of 60 MMBtu/hr. The facility would have an electrical generation capacity of 40 MW. The facility would be located on a property approximately 2 km from the center of Forestdale. Sylvanergy proposes to incorporate conventional pollution control equipment in the form of a multiclone, electrostatic precipitator and multi-pollutant catalytic reactor.

Based on a 96-percent capacity factor, the facility would emit the following amounts of the following air pollutants (in tons per year): PM 2.5: 63; SO2: 45; NOx: 110; CO: 255; VOC: 40. However, as part of the site plan approval process for the Village of Forestdale, operation of the facility was limited to no more than 6,500 hours per year, which would limit the facility to a capacity factor of 75 percent. The limitation was adopted in order to mitigate the impact of log trucks bringing raw logs to the facility for processing into pellet fuel. This limitation is reflected in the site plan approval granted to the project, and can be enforced by the building inspector of the Village of Forestdale. Based on a capacity factor of 75 percent, the facility would emit the following amounts of the following air pollutants (in tons per year): PM 2.5: 47; SO2: 32; NOx: 80; CO: 190; VOC: 30. In addition, the facility would emit 350,000 tons per year of greenhouse gas emissions in carbon dioxide equivalents (CO2E) when operating at full capacity.

The State of New Union Air Resources Board (NUARB) is authorized to issue preconstruction permits under section 165 of the Act pursuant to a delegation memorandum entered into between the Environmental Protection Agency, Region XIII, and the State of New Union. The entire State of New Union is considered to be an attainment, or PSD area, under the Act. *See generally* CAA § 107(d), 42 U.S.C. § 7407(d) (2012); 40 C.F.R. pt. 81 (2015). On January 15, 2013, Sylvanergy petitioned NUARB for a Non-Applicability Determination (NAD)—that is, a determination that it was not required to obtain a PSD preconstruction permit under section 165 of the Act. Sylvanergy took the position that it did not have the potential to emit pollutants in excess of the relevant thresholds under section 169(1) of the Act, 42 U.S.C. § 7479(1)

(2012), because it did not qualify as a "fossil-fuel fired steam electric plant" subject to the 100-ton-per-year, "major emitting facility" threshold applicable to such plants, and because it did not have the potential to emit more than the otherwise-applicable threshold of 250 tons per year of regulated pollutants. In making this argument, Sylvanergy relied on the Forestdale site plan approval's limitation on hours of operation to reduce its potential to emit carbon monoxide below the threshold. NUARB rejected both of these arguments and denied the NAD. NUARB's denial of the requested NAD reasoned that since the facility would include ULSD start-up burners, it was a fossil-fuel fired facility despite its primary reliance on wood biomass for energy production. NUARB also reasoned that the restriction on operating hours contained in the Forestdale site plan approval did not constitute a "federally enforceable" limitation, as required by 40 C.F.R. § 52.21(b)(4) (2015), in order to reduce the facility's potential to emit below the thresholds. Sylvanergy then filed a PSD preconstruction permit application under protest.

NUARB published a draft permit for public comment on September 12, 2013. Save Our Climate, a non-profit environmental protection group, filed extensive public comments. The New Union Loggers Association also filed comments on the draft permit. NUARB issued the PSD permit that is the subject of these petitions for review on June 12, 2014. NUARB approved Sylvanergy's proposed flue controls for particulates, sulphur dioxide, nitrogen oxides, carbon monoxide, and VOCs as constituting the Best Available Control Technology as required by section 165(a)(4) of the Act, 42 U.S.C. § 7475(a)(4). These permit requirements are not being challenged in this proceeding.

Over Sylvanergy's objection, NUARB also conducted a BACT review for greenhouse gas (GHG) emissions from the proposed facility, using a 96-percent capacity factor. Sylvanergy took the position that as a renewable energy facility, it should be considered to have zero GHG emissions. NUARB disagreed, reasoning that the plant would in fact emit greenhouse gases, and that controls on those emissions were possible. SOC filed detailed comments on the proposed permit and argued that not only was the Sylvanergy facility subject to BACT review for GHG emissions, but that NUARB should determine that BACT for GHGs from the facility was partial carbon capture and storage using a system of wood fuel gasification and combined cycle combustion.

To summarize NUARB's BACT review, the agency applied a top-down approach to available control technologies for greenhouse gases:

> (a) It first considered the possibility of carbon capture and storage as the technology capable of achieving the greatest reduction in greenhouse gas emissions, but rejected that technology on the grounds that there was no proven technology for removing CO2 from the dilute flue gas streams that result from biomass combustion.

(b) NUARB then considered whether use of alternative fuels such as natural gas or oil would result in lower carbon emissions for a 40-MW generation facility, and it concluded that such alternative fuels would constitute a redefinition of the facility and could not be considered as BACT.

(c) NUARB also rejected the implementation of wood gasification and partial carbon capture and storage as an impermissible redefinition of the proposed source.

(d) NUARB then considered the implementation of a Sustainable Forest Plan requiring Sylvanergy to purchase and manage a dedicated reforestation area as BACT for the biomass facility. NUARB concluded that based on an assumed production rate of 10 dry tons of wood per hectare per year, acquisition of 25,000 hectares of dedicated forest land at a total cost of approximately $10 million was economically feasible and would offset approximately 70 percent of the GHG emissions of the plant and assure sustainable biomass feedstock production based on short-rotation coppice plantings such as poplar. The calculation of acreage needed was based on an expected yield of 10 tons of dry biomass per hectare per annum for a temperate region such as New Union. NUARB noted that the requirement to acquire and maintain this forestation area was consistent with, and required by, New Union Executive Order 005-12. This order was issued by Governor Halley Comet, on recommendation of the Governor's Task Force on Climate Change and Sustainability. According to Executive Order 005-12, all State agencies in New Union must, to the maximum extent allowed by law, ensure that any new construction project they undertake or approve will be carbon neutral. The Executive Order does not distinguish between actions taken pursuant to State law and actions taken pursuant to delegated federal authority.

PROCEDURAL BACKGROUND

Sylvanergy and SOC each filed timely petitions for review with this Board. Sylvanergy challenges both the denial of the NAD by NUARB and the imposition of the Sustainable Forest Plan in its permit. SOC challenges the refusal of NUARB to order wood gasification and partial carbon capture and storage as BACT for the Sylvanergy facility.

DISCUSSION

Jurisdictional Issues

At the outset, this Tribunal must address its jurisdiction to consider certain claims asserted by Sylvanergy. Specifically, Sylvanergy challenges NUARB's denial of its request for a NAD.

This Board has jurisdiction over a petition for review of a "PSD final permit decision." 40 C.F.R. § 124.19(a). Since the denial of the NAD is not a "PSD final permit decision," this Board has no authority to consider Sylvanergy's challenge to the denial of the NAD. We note that Sylvanergy had the option of seeking judicial review of the denial of the NAD, and failed to avail itself of that option. *See Puerto Rican Cement Co. v. EPA*, 889 F.2d 292, 294-96, 299 (1st Cir. 1989).

This Board likewise lacks jurisdiction to review the question of whether the Sustainable Forest Plan was required by the Governor's Executive Order 12-005. *See, e.g.*, *In re Sutter Power Plant*, 8 E.A.D. 680, 690 (EAB 1999) ("The Board may not review, in a PSD appeal, the decisions of a state agency made pursuant to non-PSD portions of the CAA or to state or local initiatives and not otherwise relating to permit conditions implementing the PSD program."). Accordingly, this Board will review NUARB's BACT determination without reference to Executive Order 12-005.

Standard of Review

Review of a PSD permit ordinarily will not be granted unless the conditions of the permit are based on a clearly erroneous finding of fact or conclusion of law, or involve an important matter of policy or exercise of discretion that warrants review. 40 C.F.R. § 124.19(a); *see also* 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). We are mindful that our review of PSD permits is guided by the preamble to 40 C.F.R. § 124.19, which states that review "should be only sparingly exercised" and that "most permit conditions should be finally determined at the [permit issuer's] level." 45 Fed. Reg. at 33,412. The burden is on the petitioner to establish that the issues raised merit review. *In re BP Cherry Point*, 12 E.A.D. 209, 217 (EAB 2005); *In re Steel Dynamics, Inc.*, 9 E.A.D. 740, 744 (EAB 2001).

Biomass Facility GHG Emissions

As a threshold matter, Sylvanergy argues that it was improper for NUARB to consider PSD limits for greenhouse gases. Sylvanergy argues that since biomass fuels such as wood are a renewable resource, carbon dioxide emissions associated with their combustion are fully offset by the carbon sequestration afforded by the regrowth of the biofuels. Sylvanergy also points to the exemption from PSD review afforded to biofuels in the so-called "Deferral Rule." *See EPA Deferral Rule*, 76 Fed. Reg. 43,490, 43,507-08 (July 20, 2011) (codified at 40 C.F.R. pts. 51, 52, 70, and 7). However, that exemption would have expired by its own terms, and, more importantly, it was rejected by the District of Columbia Circuit in *Center for Biological Diversity v. EPA*, 722 F.3d 401, 409-12 (D.C. Cir. 2013). The D.C. Circuit suggested that the question of biological sequestration offsets for GHG emissions from biogenic facilities was better considered at the BACT determination stage. *See id.* at 411. Accordingly, Sylvanergy has not stated grounds for review based on its claimed exemption of biogenic GHG emissions from PSD review.

BACT Issues

The Act defines the BACT requirement as follows:

> The term [BACT] means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under [the Act] emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant.

CAA § 169(3), 42 U.S.C. § 7479(3) (2012); *see also* 40 C.F.R. § 52.21(b)(12) (2015) (providing a similar regulatory definition of BACT).

We explained the application of this definition at length in *In re Northern Michigan University Ripley Heating Plant*, 14 E.A.D. 283 (EAB 2009), and we reproduce that explanation here:

> This high threshold demands corresponding exertions from permitting authorities. Proceeding "on a case-by-case basis," CAA § 169(3), 42 U.S.C. § 7479(3), taking a "careful and detailed" look, *In re Cardinal FG Co.*, 12 E.A.D. 153, 162 (EAB 2005), attentive to the "technology or methods appropriate for the particular facility," *In re Prairie State Generating Co.*, 13 E.A.D. 1, 121 (EAB 2006), *aff'd sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007), they are to seek the result "tailor-made" for that facility and that pollutant. *In re CertainTeed Corp.*, 1 E.A.D. 743, 747 (Adm'r 1982), *cited in, e.g.*, *In re Christian County Generation, LLC*, 13 E.A.D. 449, 454 (EAB 2008); *In re Three Mountain Power, LLC*, 10 E.A.D. 39, 47 (EAB 2001).
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> The analytical rigor demanded by Congress has found widely adopted expression in a guidance manual issued by EPA's Office of Air Quality Planning and Standards in 1990. *See generally* Office of Air Quality Planning & Standards, U.S. EPA, *New Source Review Workshop Manual* (draft Oct. 1990) ("NSR Manual"). While not binding Agency regulation or the required vehicle for making a BACT determination, *Prairie State*, 13 E.A.D. at 13, the NSR Manual offers the "careful and detailed analysis of [BACT] criteria" required by the CAA and regulations. *Cardinal*, 12 E.A.D at 162. For this reason, it has guided state and federal permitting authorities on PSD requirements and policy for many years.

> *E.g.*, *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 183 (EAB 2000) ("[t]his top-down analysis is not a mandatory methodology, but it is frequently used by permitting authorities to ensure that a defensible BACT determination, involving consideration of all requisite statutory and regulatory criteria, is reached"); *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 129 n.14, 134 n.25 (EAB 1999) (same). The Board has commonly used it as a touchstone for Agency thinking on PSD issues. *E.g.*, *In re Deseret Power Elec. Coop.*, 14 E.A.D. 212, 220 n.7 (EAB 2008); *In re Indeck-Elwood, LLC*, 13 E.A.D. 126, 133 n.13, 158-59 & n.65 (EAB 2006).
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> The NSR Manual's "top-down" method is simply stated: assemble all available control technologies, rank them in order of control effectiveness, and select the best. So fixed is the focus on identifying the "top," or most stringent alternative, that the analysis presumptively ends there and the top option selected – "unless" technical considerations lead to the conclusion that the top option is not "achievable" in that specific case, or energy, environmental, or economic impacts justify a conclusion that use of the top option is inappropriate. NSR Manual at B.2, .7-.8, .24, .26. In those events, remaining options are then reranked, the several factors applied, and so on until a "best" technology emerges out of this winnowing process.

In re Northern Michigan Univ., 14 E.A.D. at 291-92 (footnotes omitted).

The NSR Manual provides for implementing the "top-down" method through five steps: (1) identify all potentially available control technology options; (2) eliminate "technically infeasible" control options; (3) rank the remaining technologies in terms of effectiveness, with the most effective technology ranked at the top; (4) confirm or reject the top-ranked technology taking into account energy, environmental, and economic impacts; and (5) select the most effective control technology not eliminated in step 4. *See* NSR Manual at B.5-9; *accord In re Prairie State*, 13 E.A.D. 1, 13-14 (EAB 2006).

The remaining issues in this petition boil down to the first step of the BACT "top-down" analysis: whether particular control technologies should be considered "potentially available." Sylvanergy argues that BACT may not include "beyond-the-fence" measures such as the Sustainable Forest Plan. SOC argues that NUARB impermissibly excluded from consideration its proposal to implement carbon capture and storage by using a wood gasification and steam reformation process with a gas-driven combined cycle generation unit. We consider each of these contentions in turn.

Sustainable Forest Plan

Sylvanergy challenges the imposition of the Sustainable Forest Plan on two grounds. First, it argues that since all biofuels are renewable fuels, biofuel combustion should be considered BACT per se without any additional controls. Second, Sylvanergy challenges the imposition of the Sustainable Forest Plan as BACT on the grounds that BACT cannot include "beyond-the-fence" mitigation measures unrelated to the control of the actual emissions from the facility.

With respect to the first contention, Sylvanergy argues that the combustion of biofuels, by its very nature, is fully offset by the carbon sequestration effects of biofuel production, and because this biogenic production and combustion process results in a zero net increase in carbon dioxide concentrations in the atmosphere, biofuel combustion should be considered BACT per se, without additional controls. In essence, Sylvanergy argues that in step 3 of the BACT review process, biofuel combustion is its own best control technology and should be the top-ranked technology without consideration of any other control measures, all of which are, in any event, more expensive. We find that this contention fails to establish "clear error" on the part of the permit writer. As noted in the EPA Guidance Document for BACT for biofuels, not all biofuels are created equal, and not all biofuels in fact offset their combustion CO2 emissions over a time frame equal to their consumption. U.S. EPA OFFICE OF AIR AND RADIATION, GUIDANCE FOR DETERMINING BEST AVAILABLE CONTROL TECHNOLOGY FOR REDUCING CARBON DIOXIDE EMISSIONS FROM BIOENERGY PRODUCTION 6, 21, 32-33 (2011). Greenhouse gases emitted by the facility are still pollutants, and they may still be subject to controls. The Sylvanergy facility, as proposed, made no commitment that its fuel sources would be sustainably harvested, and NUARB did not commit clear error by rejecting biomass combustion as per se BACT.

Sylvanergy's second challenge to the Sustainable Forest Plan condition of its permit is more serious. Sylvanergy argues that nothing in the Clean Air Act authorizes implementation of air pollution control measures outside the control of the facility owner—so-called "beyond-the-fence" measures. In essence, Sylvanergy makes a plain meaning argument that "Best Available Control Technology" can only mean a pollution-limiting technology implemented onsite, and that offsite mitigation measures or offsets are not "control" technologies. We are unaware of any previous case where such offsite measures have been required as BACT. However, we note that EPA's proposed Carbon Pollution Emission Guidelines for Existing Sources, 79 Fed. Reg. 34,829, 34,888-89 (June 18, 2014), contemplates such beyond-the-fence measures as acceptable control technologies under the analogous Best System for Emission Reduction (BSER) requirements of section 111(d) of the Act, 42 U.S.C. § 7411(d) (2012).

Sylvanergy does not challenge NUARB's finding that suitable forestry land is available in the vicinity of Forestdale at a total cost of $10 million. Nor does it contend that this cost would render the project economically unviable. Indeed, the Sustainable Forest Plan can be seen as

entirely within the control of Sylvanergy: the land is available on the market, and the wood production area can be viewed as part of the energy project itself, so that the "fenceline" includes the sustainable forest production area, and one portion of the source is controlling emissions from another part of the source. *Cf. In re Prairie State*, 13 E.A.D. at 24, 28 (holding that the basic purpose of a mine-mouth coal-fired power plant for purposes of BACT review included dedicated fuel production). In addition, we agree that the offset provided by the Sustainable Forest Plan appears to be required by Governor's Executive Order 12-005. The record also includes comments by the New Union Loggers Association pointing out the employment that will be provided by a dedicated New Union-based source of wood fuel feedstocks for the facility. We cannot say that NUARB's adoption of the Sustainable Forest Plan constitutes "clear error."

SOC also opposes the Sustainable Forest Plan, but on different grounds. SOC asserts that the Sustainable Forest Plan should have been rejected under BACT step 4 as having unacceptable adverse environmental impacts. SOC submitted extensive comments and ecological studies asserting that monoculture forestry practices as contemplated by the Sustainable Forest Plan destroy biodiversity and promote tree diseases and pest invasions. While NUARB did not address these comments, we have considered these arguments, and we find no clear error in NUARB's rejection of them.

Wood Gasification and Partial Carbon Capture and Storage

SOC filed extensive comments in the record in support of its argument that BACT requires the implementation of wood gasification technology together with steam reformation of the resulting synthetic gas in order to separate out the carbon dioxide gases for sequestration. SOC submitted geological studies showing that Forestdale is located on the Union Shale geologic unit, which consists of a 4,000-foot-deep layer of shale deposits overlying a sandstone layer known as the Comptom Formation. This geological formation is said to be an ideal location for a carbon capture and storage facility, and is indeed very similar to the Decatur Carbon Sequestration Demonstration facility sponsored by the United States Department of Energy, located in Decatur, Illinois.

SOC relies heavily on a study published in 2005, which examined the engineering feasibility and economics of a biomass gasification, steam reformation, carbon sequestration, and energy production plant. *See* James S. Rhodes and David W. Keith, *Engineering Economic Analysis of Biomass IGCC with Carbon Capture and Storage*, 29 BIOMASS AND BIOENERGY 440 (2005) ("Rhodes and Keith Study"), *available at* http://keith.seas.harvard.edu/papers/67.Rhodes.2005.BiomassCCS.e.pdf. The Rhodes and Keith Study was made part of the record in this case. The study concluded that such a plant was feasible using technologies already in use with an overall electric generation efficiency of approximately 25 percent [note: this efficiency is approximately the same as that for Sylvanergy's proposed

advanced stoker wood fired boiler], and could achieve a carbon sequestration efficiency of 55 percent. *Id.* at 443. The Rhodes and Keith Study concluded that such a plant could generate electricity at a cost of approximately 9 cents per kilowatt hour, with costs converted to year-2000 dollars and assuming no market for carbon offsets. *Id.* at 446. The study concluded that the cost per kilowatt hour would decrease with an available market for selling carbon offsets generated by sequestration. *Id.* at 448. SOC also submitted an analysis by an environmental economist, Dr. Costanza Outt, updating the costs assumed in the Rhodes and Keith Study. Dr. Outt concluded that, taking into account inflation and cost increases since 2000, the reduced transportation costs of on-site carbon storage facilities due to the site geology, and the existing market for carbon credits available to Sylvanergy on the Outer States Greenhouse Exchange (a regional GHG trading system), Sylvanergy's cost per kilowatt hour for generating electricity using a wood gasification and carbon sequestration would remain about 9 cents per kilowatt hour.

NUARB did not reject any of these factual assertions made by SOC. Sylvanergy has accepted these assertions for the purpose of this appeal, but reserves the right to supplement the record to contest these claims in the event this Board remands the matter to NUARB. Rather, NUARB rejected the concept of a wood gasification combined cycle electricity generation facility as impermissibly "redefining the source."

The NSR Manual states that "[h]istorically, EPA has not considered the BACT requirement as a means to redefine the design of the source when considering available control alternatives." NSR Manual at B.13. This Board has repeatedly applied EPA policy against considering facility alterations that change the fundamental nature of the proposed source. *See, e.g., In re Prairie State*, 13 E.A.D. at 18, 25; *In re Hillman Power Co.*, 10 E.A.D. 673, 691-92 (EAB 2002); *In the Matter of Haw. Commercial & Sugar Co.*, 4 E.A.D. 95, 99-100 (EAB 1992); *In re Old Dominion Elec. Coop.*, 3 E.A.D. 779, 793-94 (Adm'r 1992); *In re Pennsauken County, N.J., Res. Recovery Facility*, 2 E.A.D. 667, 673 (Adm'r 1988)). The *Prairie State* decision is instructive. In that case, we declined to require consideration of low-sulfur coal fuel as possible BACT for a proposed mine-mouth, coal-fired power plant co-located with a high-sulfur coal mine. 13 E.A.D. at 1, 28. As the whole point of the project in *Prairie State* was to burn the locally available coal, requiring low-sulfur coal would have impermissibly "redefined" the source. *Id.* The same is true here: Sylvanergy proposes to generate electricity by burning wood, not by gasifying wood and burning gas. NUARB did not commit clear error when it determined that requiring wood gasification and carbon sequestration would impermissibly "redefine" the Sylvanergy facility.

CONCLUSION AND ORDER

For the foregoing reasons, this Board lacks jurisdiction to review NUARB's determination that the Sylvanergy facility was subject to PSD review as a major emitting facility. Further, neither Sylvanergy's nor SOC's petition for review has identified a clearly erroneous factual or legal

determination that would justify the grant of the petition. Accordingly, the petitions for review are hereby denied. In accordance with 40 C.F.R. § 124.19(l)(2)-(3), the Regional Administrator of Region XIII, or appropriate delegate, shall promptly publish in the Federal Register a notice of this final agency action.

So Ordered.