

EPA's Decision in *American Electric Power Service* Sets the Stage for Requiring Reduced Greenhouse Gas Emissions

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A recent decision by the U.S. Environmental Protection Agency (EPA) expands the scope of the requirements for analysis and use of "best available control technology" (BACT) and sets the stage for future requirements to reduce greenhouse gas (GHG) emissions under the Clean Air Act.

In *In re: American Electric Power Service Corp.* (Dec. 15, 2009) (*American Electric Power Service*),¹ EPA objected to the Arkansas Department of Environmental Quality (Arkansas) decision to issue an operating permit for a proposed pulverized coal power plant because Arkansas's BACT analysis did not consider construction of an integrated gasification combined cycle (IGCC) plant instead of the conventional coal-fired plant proposed.

At issue is whether IGCC is an additional technology to reduce pollution at a conventional coal power plant or a fundamental redesign of the power plant itself. There has been some debate and differences of opinion in recent decisions of the EPA and the Environmental Appeals Board (the federal administrative body to which many air permitting decisions are appealed). With the decision in *American Electric Power Service*, it appears as though those differences are resolved, with EPA now taking the Environmental Appeals Board's decidedly broader, more inclusive view of what is required for a proper BACT analysis. This broader view potentially includes IGCC for coal-fired power plants and similarly substantial redesign changes for other stationary sources under the Clean Air Act. Hence, EPA's decision in *American Electric Power Service* may have immediate implications for stationary sources of conventional pollutants by increasing development and permitting costs. Furthermore, *American Electric Power Service* may result in GHG emitters having real emissions reducing obligations sooner than previously expected.

The Clean Air Act's BACT Requirement: The History of IGCC

The BACT analysis in *American Electric Power Service* is required by the Clean Air Act's Prevention of Significant Deterioration (PSD) program.² Among other things, the PSD program requires BACT to be used to control emissions from new or modified stationary sources of pollutants "subject to regulation" under the Clean Air Act.³ What constitutes BACT will depend on the proposed source and should be determined in accordance with EPA guidance.⁴ Often, sticking points in the analysis include evaluating whether particular technologies are commercialized to the point of being "available" and whether a particular technology would redefine the proposed source.⁵ EPA guidance indicates that a technology that "redefines the source" goes beyond BACT and is not required by the PSD program.⁶ For example, a wind farm is

highly unlikely to be considered BACT for a coal-fired power plant because building a wind farm instead of the coal-fired power plant would redefine the source—it would be another thing completely.⁷ Thus, a permitting agency could not rely on BACT to require the construction of a wind farm in lieu of a coal-fired power plant.

Applying this legal construct to the issue of whether IGCC should be evaluated in the BACT analysis for a conventional coal-fired power plant, EPA and the Environmental Appeals Board had apparently reached opposite conclusions. In *In re: East Kentucky Power Cooperative, Inc.* (Aug. 30, 2007) (*East Kentucky Power*),⁸ EPA received a Petition to Object to the issuance of an operating permit for a conventional coal-fired power plant. The petitioners argued that the permitting authority improperly refused to consider IGCC technology in the BACT analysis.⁹ EPA denied the petition because, among other reasons, "the IGCC process would redefine the proposed source."¹⁰ Explaining this conclusion, EPA stated:

[t]he combined cycle generation power block of an IGCC process employs the same turbine and heat recovery technology that is used to generate electricity with natural gas at other electric generation facilities. Thus, this portion of the IGCC process is very similar to existing power generation designs that EPA has agreed would redefine the basic design source when an applicant proposed to construct a pulverized coal-fired boiler Furthermore, the core process of gasification at an IGCC facility is fundamentally different than a boiler. Coal gasification is more akin to technology employed in the refinery and chemical manufacturing industries than technologies generally in use in power generation Use of coal gasification technology would necessitate different types of expertise on the part of the applicant and employees to produce the desired product (electricity).¹¹

Not surprisingly then, in *In re: Deseret Power Electric Cooperative* (EAB Nov. 2008) (*Deseret Power*),¹² EPA Region 8 concluded that "the IGCC process need not be considered in the BACT analysis for [a] permit issued to Deseret Power because the IGCC process would 'redefine' the [proposed coal-fired power plant]."¹³ The use of such strong and broad language by EPA could be taken to suggest that, as a universally applicable rule, permitting agencies are free to conclude that IGCC technology would redefine a proposed conventional coal-fired power plant.

In September 2009, the Environmental Appeals Board weighed in on the issue in *In re: Desert Rock Energy Co. LLC* (EAB Sept. 24, 2009) (*Desert Rock*).¹⁴ In *Desert Rock*, EPA Region 9 issued a permit for a conventional coal-fired power plant in New Mexico. When issuing the permit, the Region did not evaluate IGCC in the BACT analysis because, in its opinion, IGCC technology would redefine the source.¹⁵ The Region—parroting *East Kentucky Power*—reasoned:

IGCC "would fundamentally change the nature of the proposed major source as it would change the basic design of the equipment . . . proposed" The Region also analogized the design changes that would be necessitated by IGCC to those in previous Board and Administrator cases in which redefining the source was

relied upon to exclude consideration of the use of a different type of electric generating facility as BACT . . . Finally, the Region argued that "the core process of gasification at an IGCC facility is fundamentally different than operating a boiler" and thus would require "different types of expertise to operate."¹⁶

On review, the Environmental Appeals Board remanded the permit for further consideration, expressly rejecting the Region's arguments and implicitly rejecting EPA's reasoning in *East Kentucky Power*. The Environmental Appeals Board explained:

[t]he permit applicant initially "defines the proposed facility's end, object, aim, or purpose—that is the facility's basic design" The permit issuer . . . should take a hard look . . . in order to discern which design elements "may be changed to achieve pollutant emissions reduction without disrupting the applicant's basic business purpose of the proposed facility," while keeping in mind that BACT, in most cases, should not be applied to regulate the applicant's purpose or objective for the proposed facility.¹⁷

The Environmental Appeals Board found that the Region's dismissal of IGCC as BACT failed to meet this standard for a searching and thorough review.

Thus, prior to EPA's decision in *American Electric Power Service*, EPA and the Environmental Appeals Board appeared to be at odds regarding the potential applicability of IGCC to conventional coal-fired power plants as BACT.

American Electric Power Service: The Future

As mentioned above, EPA objected in *American Electric Power Service* to Arkansas's permitting decision because, in EPA's view, Arkansas improperly excluded IGCC technology in its BACT analysis on the ground that IGCC technology would redefine the source.¹⁸ In defending this conclusion, Arkansas relied on EPA's reasoning in *East Kentucky Power* and *Deseret Power*.

The combined cycle generation power of an IGCC process employs the same turbine and heat recovery technology that is used to generate electricity with natural gas at other electric generation facilities. Thus, this portion of the IGCC process is very similar to existing power generation designs that EPA has agreed would redefine the basic design for the source when an applicant proposed to construct a pulverized coal fired boiler.¹⁹

Moreover, Arkansas found, "fundamental differences in equipment design are sufficient to conclude that the IGCC process would redefine the proposed source."²⁰ Finally, Arkansas observed:

[t]he core process of gasification at an IGCC facility is fundamentally different than a boiler. Coal gasification is more akin to technology employed in the refinery and chemical

manufacturing industries than technologies generally in use in power generation Use of coal gasification technology would necessitate different types of expertise on the part of the applicant and employees to produce the desired product (electricity).²¹

Based on the extent to which Arkansas apparently relied on EPA's reasoning in *East Kentucky Power*, one would have thought that Arkansas's decision was likely to withstand EPA's scrutiny.

But something has changed at EPA, or decisions there no longer have precedential value. Although it found the exclusion of IGCC from a BACT analysis to be appropriate in *East Kentucky Power* (and at the Regional level in *Deseret Power*), EPA now finds Arkansas's decision to exclude IGCC from the BACT analysis to be a violation of the Clean Air Act. At bottom, EPA's objection is based on Arkansas's failure to analyze the "redefining the source" question using case-specific facts and a defensible analytic framework. Indeed, in *American Electric Power Service*, EPA has fully embraced the Environmental Appeals Board's preferred test. To determine whether a technology "redefines the source," *per se*, a permit applicant should include a review of "which design elements [are] inherent to [the project] purpose and which design elements could be changed to achieve pollutants emissions reductions without disrupting the applicant's basic business purpose."²² This approach will likely require a broader range of redesigns to be considered under BACT analysis.

New Direction or New Wrinkle?

EPA did make an effort in *American Electric Power Service* to distance itself from its decision in *East Kentucky Power* and the Region's decision in *Deseret Power*. The distinctions to which EPA pointed reflect the very case-specific evaluation that permitting agencies must go through in the future to determine whether IGCC would redefine the source. With respect to *Deseret Power*, EPA remarked, "Even though Region 8's permitting record . . . used much of the same reasoning [rejected by EAB] in [*Desert Rock*], [Region 8] went further to consider the applicant's objective and purpose of utilizing waste coal, which was not considered compatible with IGCC technology."²³ According to EPA, the Region appropriately evaluated whether IGCC would redefine the source by regulating the applicant's purpose, whereas Arkansas engaged in no such case-specific analysis.²⁴

EPA's distinction of *American Electric Power Service* from *East Kentucky Power*, though, was less satisfying. EPA did "not follow[] the reasoning on the IGCC issue reflected in the . . . order on the East Kentucky permit" because "the current Administrator finds the reasoning of the EAB in the *Desert Rock* matter persuasive on this issue."²⁵ Essentially, EPA appears to recognize that its decisions in *East Kentucky Power* and *American Electric Power Service* are not easily reconciled, but, nonetheless, EPA has objected to the *American Electric Power Service* permit because it now prefers the approach of the Environmental Appeals Board. Why exactly EPA prefers the approach taken in *Deseret Rock* is unclear. EPA may simply appreciate the Environmental Appeals Board's establishment of a standard for answering the "redefining the source" problem. Or it may reflect a change in policy.

In any event, it now appears that EPA and the Environmental Appeals Board are on the same page: before a permitting agency may find that IGCC redefines the source, the agency must conduct a searching, case-specific examination of the purpose of the project and cannot rely on any rule of thumb.

Implications for Future Stationary Source Permitting

From the perspective of all stationary sources, *American Electric Power Service* is important for at least two reasons: (1) *American Electric Power Service* makes it increasingly unlikely that any kind of technology can be categorically excluded from the BACT analysis and (2) the contours of a proper BACT analysis are likely to continue to evolve as EPA appears to have embraced a common law approach to the rules of BACT analysis. Reflecting these points, EPA emphasized that it's "decision in the present Order reflects circumstances presented in this matter, including the particular record of the Arkansas permit, and the evolution of Environmental Appeals Board's approach to the BACT analysis, as reflected in subsequent EAB decisions and other actions."²⁶ Clearly, any given BACT decision must be undergirded by a source-specific evaluation, and wholesale reliance on past EPA and Environmental Appeals Board decisions is not adequate. Requiring a case-by-case evaluation of every potential technology may result in additional pollutant reductions, but it adds uncertainty to the scope of analysis that may be required and may also significantly increase the time and cost associated with permitting and development.

Further increasing the difficulty associated with the BACT analysis for proposed new and modified stationary sources, the rules for BACT analyses are evolving into a common law. EPA believes, "when EPA is called on to assess whether a state action is supported by a reasoned basis, it is appropriate for EPA to consider prior decisions of the [Environmental Appeals Board] and Administrator that reach conclusions regarding the adequacy of particular reasoning."²⁷ EPA's attitude that the rules of BACT analysis are ever evolving can result in marked uncertainty for project proposers and considerable leeway for environmental agencies. The contrast between EPA's decisions in *East Kentucky Power* and *American Electric Power Service* is a good example of the uncertainty and potential retroactivity engendered by this common law approach. When it issued *East Kentucky Power* in August 2007, EPA was satisfied by essentially the same reasoning employed by Arkansas in *American Electric Power Service*. Now, in light of *Desert Rock*—a case decided by the Environmental Appeals Board in September 2009—EPA is no longer satisfied with that reasoning and, as a result, has objected—in December 2009—to a facility the permitting of which was proposed in August 2006 and completed in November 2008. That is, Arkansas's permitting decision was undercut by an Environmental Appeals Board decision issued nearly a year after the permitting decision. Additionally, it is now evident that, to determine the significance of any given BACT determination or statement regarding BACT analysis rules, the decision or statement must be placed in context and viewed as a part, or the beginning, of a trend.

Implications for GHG Emitters

EPA's objection to Arkansas's BACT analysis *American Electric Power Service* was not related to Arkansas's refusal to limit GHG emissions nor was it related to any refusal by Arkansas to evaluate whether IGCC was BACT for GHG emissions. In fact, EPA

specifically denied the request that it object to Arkansas's refusal to limit GHG emissions from "the proposed power plant."²⁸ Under EPA's interpretation of the Clean Air Act, though, GHGs will be "subject to regulation" once EPA promulgates regulations restricting GHG emissions from vehicles,²⁹ and such rules are expected to be finalized as early as March 2010. The Clean Air Act's PSD program requires new and modified stationary sources to apply BACT to control all pollutants "subject to regulation."³⁰ Thus, EPA's promulgation of its vehicle rule will trigger the application of the PSD program, including the BACT requirement, to stationary sources of GHGs.³¹ Thus, the contours of the BACT analysis in general, as well as applied to IGCC in particular, are important to GHG emitters.

Once BACT is required to control emissions of GHGs, the *American Electric Power Service* decision may accelerate the day on which GHG emitters must bear actual compliance costs. If no control technology is available (the "A" in BACT), then, by definition, there would be no BACT to apply and any compliance obligation would be only theoretical. To date, little GHG emission control technology has been commercialized, suggesting that little if any technology is available. IGCC, though, is close to being commercialized (and some would argue that it has been commercialized), and, when combined with carbon capture and storage (CCS), IGCC has been viewed as a method of reducing GHG emissions from coal-based power generation. Conventional wisdom, rightly or wrongly, has held that IGCC and CCS would not be BACT regardless of availability because the technology would redefine the source. *American Electric Power Service* runs contrary to conventional wisdom by suggesting that IGCC may not necessarily redefine the source for conventional coal-fired power plants. Consequently, *American Electric Power Service* suggests that availability may be the key issue to be resolved before the Clean Air Act's BACT requirement begins forcing agencies to require project proposers to construct IGCC plants rather than conventional coal-fired power plants.

With respect to GHG emitters other than coal-fired power plants, EPA's seemingly growing view of what could be considered BACT in any particular case will have implications for any GHG emitter subject to BACT requirements. It will result in a more searching, and expensive, case-by-case examination of potential technologies. In fact, it will make it difficult to establish any default rules regarding whether technologies may or may not be considered BACT for a proposed source of any given type. Also, this trend could result in a more liberal interpretation of what is "available," which would further accelerate the day on which GHG emitters nationwide will have real, rather than theoretical, compliance obligations.

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¹ *In re American Electric Power Service Corp.*, Petition No. VI-2008-01 (EPA Dec. 15, 2009).

² See 42 U.S.C. § 7475.

³ *Id.* § 7475(a)(4).

⁴ New Source Review Workshop Manual (Draft) at B.1, *et seq.* (EPA Oct. 1990).

⁵ *Id.* at B.11–B.14.

⁶ *Id.* at B.14.

⁷ See, e.g., *id.* at B.13–B.14 (discussing that "a gas turbine normally would not be included in the list of control alternatives for a coal-fired boiler").

⁸ *In re East Kentucky Power Cooperative, Inc.*, Petition No. IV-2006-4 (EPA Aug. 30, 2007).

⁹ *Id.* at 39–40.

¹⁰ *Id.* at 40.

¹¹ *Id.* at 39–40 (internal quotations and citations omitted).

¹² *In re Deseret Power Electric Coop.*, PSD Appeal No. 07-03 (EAB Nov. 2008).

¹³ *American Electric Power Service Corp.*, *supra* n.1 at 7.

¹⁴ *In re Desert Rock Energy Co. LLC*, PSD Appeals Nos. 08-03, *et seq.* (EAB Sept. 24, 2009).

¹⁵ *Id.*, slip. op. at 56.

¹⁶ *American Electric Power Service Corp.*, *supra* n.1 at 9 (quoting *In re: Desert Rock Energy Co. LLC*, slip. op. at 68–69 (EAB Sept. 24, 2009)).

¹⁷ *Desert Rock Energy Co. LLC*, *supra* n.14 at 64 (quoting *In re Prairie State Generating Co.*, PSD Appeal No. 05-05, slip. op. at 29–30 (EAB 2006)).

¹⁸ *American Electric Power Service Corp.*, *supra* n.1 at 7.

¹⁹ *Id.* at 7.

²⁰ *Id.*

²¹ *Id.*

²² *Id.* at 9 (a permitting authority must follow this approach or, if the authority "intends to follow a different approach . . . the [authority] must articulate a statutory foundation for any alternative approach").

²³ *Id.* at 10.

²⁴ *Id.*

²⁵ *Id.* at 11.

²⁶ *Id.*

²⁷ *Id.* at 8

²⁸ *Id.* at 22.

²⁹ Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, Proposed Rule, 74 Fed. Reg. 55292, 55294 (EPA Oct. 27, 2009); see also Bloomberg Law Reports - Sustainable Energy, *EPA Proposes Rule to Tailor Emissions Thresholds Under the Clean Air Act's PSD and Title V Programs for New Stationary Sources in Preparation for GHG Regulation* (Oct. 23, 2009).

³⁰ 42 U.S.C. § 7475(a)(4).

³¹ Among other things, one function of the Tailoring Rule would be to raise the volume of GHG emissions that would trigger the BACT requirement from 100 or 250 tons per year to 10,000 or 25,000 tons per year. See Proposed Greenhouse Gas Tailoring Rule, *supra* n.29 at 55294-95.