

PSD/Clean Air Act: U.S. Environmental Appeals Board Addresses BACT/Redefining the Source

Arkansas Environmental, Energy, and Water Law Blog



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The United States Environmental Appeals Board (“EAB”) issued a September 1st Order addressing a challenge to a Clean Air Act Prevention of Significant Deterioration (“PSD”) permit issued by Maricopa County, Arizona (“County”) to Arizona Public Service Company (“APSC”) authorizing construction of five new natural gas-fired combustion turbines at the utility’s Ocotillo power plant in Tempe, Arizona. See PSD Appeal No. 16-01.

The County is authorized to issue PSD permits pursuant to a delegation agreement with the United States Environmental Protection Agency (“EPA”).

States whose Air Quality Control Regions (“AQCR”) are in attainment with the National Ambient Air Quality Standards (“NAAQS”) are required by Part C of Title I of the Clean Air Act to prevent significant air quality deterioration (i.e., “PSD program”).

The basic goal of the PSD program is to “ensure that air quality in clean air areas does not significantly deteriorate while maintaining a margin for future industrial growth”. To achieve this objective, the program establishes a set of air pollution budgets or “increments” which specify how much of an additional amount of a given criteria air pollutant can be added to the relevant AQCR. The Clean Air Act divides these attainment areas into three classes of allowable criteria air pollutant increases.

The key PSD issue addressed in the appeal of the APSC PSD permit involved the selection of Best Available Control Technology (“BACT”). PSD permit limits are based on BACT and any additional emission reductions necessary to stay within the available increments. Unlike the Clean Air Act New Source Performance Standard program, the PSD-mandated technology-based controls are applied on a facility-by-facility basis.

The Clean Air Act defines “BACT” as an emission limit that is based on a “case-by-case” analysis of the “maximum degree of reduction of each pollutant subject to regulation. . . from any major emitting facility. . . taking into account energy, environmental, and economic impacts and other costs,” that is “achievable” by employing certain identified processes, techniques or technologies.

The Sierra Club filed a Petition with the EAB arguing that the County clearly erred or abused its discretion in conducting its BACT analysis for the power plant’s projected greenhouse emissions when it concluded that pairing energy storage with combustion turbines would “redefine the source”. The Sierra Club had argued in comments to the County that the greenhouse gas BACT analysis was deficient because it did not consider the use of various energy storage technologies.

The cited technologies were battery storage, compressed air storage, or liquid air energy storage (as add-on or lower-emitting control options for reducing the power plant's greenhouse gas emissions). Sierra Club further asserted that APSC's project purpose could be served by replacing some or all of the proposed combustion turbines with energy storage.

The EAB Order notes:

. . . In discussing these alternatives, the Sierra Club identified both replacement and pairing energy storage options with other technologies including the project's turbines. *See id. at 4-15*. The Sierra Club claimed that "(i)nterfacing energy storage with gas turbines would eliminate the need to operate the [proposed] turbines of low loads," which purportedly would improve Ocotillo's efficiency and reduce its greenhouse gas and other criteria pollutant emissions.

The County responded in part to the Sierra Club's public comments by contacting APSC requesting more detailed information on the greenhouse gas BACT analysis and other matters. The utility submitted more detailed explanations of its consideration of energy storage, including battery storage and other subjects. Further, a revised permit application was submitted to the County that included an updated BACT analysis and discussion of energy storage, including battery storage as options. This application described the purpose of the proposed project as:

. . . A peaking and load shaping power plant, capable of quickly starting/escalating and stopping energy generation multiple times daily to meet rapidly changing electricity demands. Arizona Public Service identified an electric power ramp rate of 50 MW per minute per turbine as "critical for the project to meet its purpose," because that rate would allow all five turbines operating together at 25% load to provide approximately 375 MW of ramping capacity (from 125 to 500 MW) in less than 2 minutes.

As previously noted, the Sierra Club's Petition raised one primary substantive issue:

Whether the County clearly erred or abused its discretion when it eliminated the pairing of energy storage with combustion turbines in its BACT analysis based on the County's conclusion that the option would "redefine the source".

EAB concluded in the September Order denying review that the fundamental business purposes and site-specific peaking capacity needs described in the administrative record support the County's conclusion that adding energy storage options to the power plant would redefine the source. It further held that the record supported the County's determination that the Sierra Club's proposed alternatives would interfere with the project's inherent design elements, including the ability to start and stop quickly several times a day. This ability was deemed needed to provide "fast, flexible, and sustained capacity to meet fluctuating power needs and mitigate grid instability caused by the increasing integration of renewable energy into the electrical system served by the Ocotillo plant".

The EAB also noted that the County's consideration of energy storage, and its conclusion that the paired stored energy may be exhausted before it can be recharged to meet fluctuating demand, supported the determination that energy storage is not compatible with the purpose and design of a peaking facility (such as this power plant), to provide rapid, reliable power to its customers.

The Board did note in regards to the holding that it:

. . . should not be read as an automatic off-ramp for energy storage technology as a consideration and Step 1 in future BACT analyses.

The Board also rejected a procedural argument raised by the Sierra Club.

[A copy of the EAB Order can be downloaded here.](#)